Institute for Fiscal Studies

The IFS Green Budget
February 2017

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In association with ICAEW and funded by the Nuffield Foundation.
With additional analysis from ICAEW and Oxford Economics.

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The IFS Green Budget: February 2017

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The Institute for Fiscal Studies

Published by

The Institute for Fiscal Studies

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London WC1E 7AE

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with support from

The Economic and Social Research Council (ESRC)
through the Centre for Microeconomic Analysis of Public Policy
(CPP, reference ES/M010147/1)
http://www.esrc.ac.uk/

Funded by

The Nuffield Foundation

28 Bedford Square
London WC1B 3JS
http://www.nuffieldfoundation.org

and analysis from

Oxford Economics

Abbey House, 121 St Aldates
Oxford OX1 1HB
http://www.oxfordeconomics.com/

printed by

Pureprint Group, Uckfield

ISBN 978-1-911102-33-5

Foreword from ICAEW

ICAEW is once again very pleased to be associated with the IFS Green Budget.

This 2017 report comes at a crucial time for the public finances. New fiscal targets and a different fiscal direction were set out in the Autumn Statement just a couple of months ago. The most significant issue – the uncertainty over the medium-term effects of the UK leaving the EU – remains. By providing an independent, evidence-based commentary on the economic choices and challenges that we face, this publication offers much-needed perspective for policymakers as well as the wider public ahead of two important fiscal events in 2017.

ICAEW believes that the government needs to focus not just on the deficit as recorded in the National Accounts, but also on long-term liabilities for things such as public service pensions and clinical negligence. The accounting deficit which includes these liabilities is much bigger than, and has come down much less quickly than, the headline deficit. In addition, there is a case for a new focus on debt management. Something like £650 billion of debt to be issued over the next five years, and how this happens – how much is index linked and what average maturities are issued – will matter to the public finances for years to come.

With these challenges in mind, we have produced two chapters for this year's report. The first (Chapter 4) provides an analysis of the government balance sheet through the lens of the Whole of Government Accounts (WGA). The WGA is a world-leading development in public sector financial reporting.

Chapter 9 focuses on the government's debt funding strategy and the need to refinance a substantial proportion of existing debt.

ICAEW is a world-leading professional accountancy body with 147,000 members in over 160 countries. As an organisation and a profession, we stand for high-quality financial information that can be used to inform good decision-making. We hope the Green Budget will be widely used to that end.

Michael Izza

Chief Executive Officer of ICAEW

ICAEW is a world-leading professional membership organisation that promotes, develops and supports over 147,000 chartered accountants worldwide. They provide qualifications and professional development, share their knowledge, insight and technical expertise, and protect the quality and integrity of the accountancy and finance profession. As leaders in accountancy, finance and business ICAEW members have the knowledge, skills and commitment to maintain the highest professional standards and integrity. Together they contribute to the success of individuals, organisations, communities and economies around the world. Because of this, people can do business with confidence. ICAEW is a founder member of Chartered Accountants Worldwide and the Global Accounting Alliance.

Foreword from the Nuffield Foundation

In an era of ‘alternative facts’, it has never been more necessary to secure a place for an independent, trusted and evidence-based analysis of the core issues that will determine social well-being in an increasingly uncertain UK economy. That is what the IFS Green Budget provides.

The Institute for Fiscal Studies is a long-standing partner of the Nuffield Foundation, and we fund the Green Budget because we believe in the value of independent and rigorous evidence and its power to improve people’s lives. We stand back from the twists and turns of politics to take a long-term view of policy and its implementation. Last year’s Green Budget considered, amongst other things, the options for the Chancellor to meet his goal of a budget surplus by 2020. The date for the EU referendum had not yet been set, though the Green Budget identified it as a ‘key uncertainty’ in the discussion of domestic risks to the UK’s economic outlook. This year, the Green Budget sets out the terrain for the post-referendum economy. It ranges from the broadest economic horizon to the implications for specific areas that will bear most directly on families and individuals – heath, social care and disability, self-employment, apprenticeships and the future of work. Its quality and rigorous impartiality mean that it is trusted, not only by economists, policymakers and journalists, but by all who seek to engage with the debate about our public finances.

Each year Nuffield commits around £10 million to funding research that will improve social well-being and educational opportunity in the UK by examining how disadvantage and inequality might best be addressed through changes to social policy and institutional practice. The Green Budget, with its focus on how different policy decisions might affect the day-to-day lives of individual people in the UK, exemplifies this, and we are pleased to support it.

Tim Gardam
Chief Executive of the Nuffield Foundation

The Nuffield Foundation is an endowed charitable trust that aims to improve social well-being in the widest sense. It funds research and innovation in education and social policy and also works to build capacity in education, science and social science research. The Nuffield Foundation has funded this project, but the views expressed are those of the authors and not necessarily those of the Foundation. More information is available at http://www.nuffieldfoundation.org.

Preface

Welcome to the IFS 2017 Green Budget. In it we discuss some of the issues confronting the Chancellor as he prepares for his first Budget, and the third of this parliament.

At the core of this year's Green Budget is an analysis of the challenges facing a Chancellor seeking to eliminate the deficit in the next parliament, whilst facing unprecedented levels of economic uncertainty and risks on both tax and spending. We have a chapter focusing on one of the big spending risks: health and social care. We also look at the design of incapacity and disability benefits, in light of the government's ambitious commitment to halve the disability employment gap. We analyse the tax treatment of employees, the self-employed and owner-managers – a complex topic but one that is increasingly important given how the labour market is changing. And we look at apprenticeship policy in England, in advance of the new apprenticeship levy that comes into operation from April.

As ever, we collaborate with others to write the macroeconomic chapters. We are grateful to Oxford Economics, and in particular to Andrew Goodwin, Martin Beck and Ángel Talavera, for their chapters on the outlook for the UK economy and the global economy.

We are delighted to work again with ICAEW. In addition to providing financial support for the Green Budget, they have contributed two valuable complements to our own detailed analysis of the public finances: a chapter on the Whole of Government Accounts and a chapter on the financing of the government's borrowing.

We are also very grateful to the Nuffield Foundation for the funding it has provided to support the Green Budget. Our most important aim for the Green Budget is to influence policy and inform the public debate. It is particularly appropriate, then, that it should be supported by the Nuffield Foundation, for which these are also central aims.

The continuing support that the Economic and Social Research Council (ESRC) provides for our ongoing research work via the Centre for the Microeconomic Analysis of Public Policy at IFS underpins all our analysis in this volume and is gratefully acknowledged.

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As with all IFS publications, the views expressed are those of the named chapter authors and not of the institute – which has no corporate views – or of the funders of the research.

Paul Johnson
Director, Institute for Fiscal Studies

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Executive summary

1. The global economy

Global economy will accelerate in 2017.

After growing an estimated 2.2% in 2016 – the slowest pace since 2009 – the world economy is expected to accelerate this year and expand by 2.6%, boosted by stronger growth in the US and some emerging markets. However, this still represents a modest pace compared with historic standards and would be below the long-term average of 2.8%.

A year of higher inflation and higher bond yields.

This year will mark the return of inflation for many advanced economies, as the effect of lower oil prices in 2015–16 fades and expansionary policies in the US create additional inflationary pressures. A combination of higher inflation expectations and a gradual monetary policy normalisation in the US will see bond yields rising further in most developed economies.

Risks are unusually large this year, but go both ways.

The election of Donald Trump as US President and the unpredictability of some of his policies add an additional layer of uncertainty to forecasts this year. A case can be made for both stronger- and weaker-than-expected growth. Equally, there are fears that a heavy electoral calendar in Europe could yield destabilising results, but the common currency area proved remarkably resilient to shocks during a difficult 2016 and we think this year will be no different.

2. The UK economic outlook

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.

3. Challenges for the UK public finances

The Chancellor's new fiscal targets afford him much more flexibility than his predecessor's.

Fiscal policy is not currently subject to any fiscal targets that can be met or missed in the remainder of this parliament. Mr Hammond's first target pertains to the deficit in 2020–21 – on current forecasts, he could loosen fiscal policy by more than £25 billion in that year and still be on course to meet the target.

The profile of planned deficit reduction is uneven, and even in 2021–22 – after more than a decade of tax rises and spending cuts – the deficit is forecast to be 0.7% of national income.

Real levels of day-to-day public service spending have actually fallen very little overall in the last three years. The rate of reduction is set to speed up after this year, with cuts of nearly 4% due between 2016–17 and 2019–20. In addition, tax is rising as a share of national income and by 2019–20 is due to reach its highest level since 1986–87.

The forecast reduction in the deficit is much slower than that planned before the last general election or the June referendum, largely due to a worse economic outlook.

The government is likely to enact further tax-cutting measures that are not currently reflected in the forecast, which would add to borrowing.

The government is committed to increases in the personal allowance and the higher-rate threshold by the end of this parliament. These measures, combined with the likely continuation of a cash freeze to the rates of fuel duties, would cost £4¼ billion in 2020–21.

Focusing public spending cuts on the day-to-day spending of (unprotected) government departments, while increasing capital spending, is changing the make-up of government spending.

In 2007–08, central government spending on public services comprised 17p of capital spending for every £1 of day-to-day spending. In 2012–13, this had fallen to 13p of capital spending for every £1 of day-to-day. The forecasts imply that in 2021–22 this will increase to 21p of capital spending for every £1 of day-to-day.

By the end of the parliament, public spending on health, pensions and overseas aid will be higher as a share of national income than in 2007–08, while spending on schools, defence and (in particular) public order & safety will be lower.

Uncertainty surrounding the economic forecast is the largest risk to the public finances.

The Office for Budget Responsibility (OBR) downgraded the size of the economy in 2020–21 by 1.2% between March and November, but other forecasters are more pessimistic. If growth is lower than expected, borrowing is likely to increase. The public finances will also deteriorate if the fall in sterling leads to a greater-than-expected increase in household inflation and/or interest rates turn out higher than forecast.

Past forecasting performance suggests there is a one-in-five chance that the deficit in 2021–22 will actually be around or above its current level of 3.5% of national income. More optimistically, there is almost a two-in-five chance that there will be an overall budget surplus in that year.

The main objective of fiscal policy – returning the public finances to balance as soon as possible in the next parliament – will be made harder by forecast sluggish growth and pressures on public spending.	Demographic and non-demographic pressures are projected to put upward pressure of 1.0% of national income on health, social care and pension spending by 2025. Taking into account possible negative effects from lower growth, the government may need to enact further measures worth £40 billion (in 2016–17 terms) in order to eliminate the deficit in the next parliament.

4. ICAEW: public sector liabilities in the Whole of Government Accounts

The Whole of Government Accounts reflect the financial consequences of decisions made by successive governments, in particular in the increasing level of liabilities being recorded.	Total liabilities of £3.6 trillion (191% of GDP) were reported at 31 March 2015, almost two-and-a-half times the narrower measure of public sector net debt reported in the National Accounts of £1.5 trillion (or 83% of GDP).
The effectiveness of the Whole of Government Accounts as a tool to support good public financial management would be improved by a better commentary and by more timely preparation.	The Whole of Government Accounts are a world-leading development in public sector financial reporting, but progress is needed to reduce the 14 months taken to produce them and to improve narrative disclosures to the standards expected of listed companies.
The focus on reducing the 'near cash' fiscal deficit measure in the National Accounts risks less attention being given to controlling costs incurred that will be settled in the longer term.	The 38% reduction in the fiscal deficit over the five years to 2014–15 was not matched by the 19% reduction in accounting deficit over the same period, a significant divergence from the government narrative about the public finances.

After debt, the most significant liabilities are for public sector pension entitlements. Decisions made to provide defined benefit pensions to employees have exposed the public sector to significant economic and demographic risks, in particular to unanticipated increases in longevity.

Public sector unfunded pension liabilities amounted to £1.4 trillion at 31 March 2015, up by £354 billion since 2010. Local authority and other funded pension scheme liabilities of £377 billion were supported by investments of £257 billion, with investment growth offsetting most of the increase in liabilities since 2010.

Better information is needed to allow decision-makers to choose between spending today and increasing long-term liabilities, such as deciding whether to invest in addressing medical failures versus the cost of clinical negligence claims.

Liabilities for nuclear decommissioning, clinical negligence and the Pension Protection Fund continue to rise, with long-term liabilities up to £175 billion at 31 March 2015. These are obligations to pay cash in the future, reducing the amount available in future for other priorities.

5. UK health and social care spending

The period between 2009–10 and 2014–15 saw historically slow increases in UK public spending on health, averaging 1.1% per year.

This was the lowest five-year growth rate since a consistent time series of health spending began in 1955–56. However, due to cuts to other services, health spending continued to increase as a share of public service spending.

NHS spending in England is set to increase by £11.6 billion between 2014–15 and 2020–21: more than the £7 billion increase pledged.

However, Department of Health (DH) spending – a wider measure of health spending in England – will increase by only £8.4 billion. This is because the non-NHS part of the DH budget (which includes the funding of education and medical research) will be cut by 20.9%.

Over the decade from 2009–10 to 2019–20, the population is growing and ageing, placing additional pressure on the health care system.

The extra NHS spending is enough to compensate the NHS for pressure created by a growing and ageing population over the next few years, but it does not account for other cost and demand pressures.

But looking at all DH spending rather than the NHS only, after adjusting for the ageing of the population, per-capita real spending will be lower in 2019–20 than in 2009–10. An additional £1.3 billion of DH spending would be required in 2019–20 just to maintain 2009–10 levels.

Real public spending on social care organised by English local authorities fell by 1.0% between 2009–10 and 2015–16. Within this, spending on adult social care fell by 6.4%, during a period when the population aged 65 and above grew by 15.6%.

Looking forward, the ability of councils to maintain 2015–16 levels of social care will depend on how much revenue is raised through council tax, and whether they want and can continue to protect social care relative to other services. Overall, it looks very challenging for councils to maintain per-adult social spending at current levels over the next few years.

The latest projections from the Office for Budget Responsibility (OBR) indicate substantial long-run spending pressures in health and long-term care. They suggest spending could rise from 8.0% of national income in 2021–22 to 14.7% by the mid 2060s.

These new estimates take account of both the ageing of the population and other cost pressures, and are more realistic than previous OBR projections which accounted only for demographic change. We have some big choices to make about how we deliver health and social care, and about the size and shape of the state.

6. Working-age incapacity and disability benefits

Incapacity and disability benefits make up a large share of total working-age welfare spending.

Just over half of disabled working-age people who are not in paid work receive disability or incapacity benefits. The government will spend £24 billion on these benefits for 3.5 million working-age people in 2016–17. This is 26% of non-pensioner benefit spending.

There has been a big shift from spending on incapacity benefits to spending on disability benefits over time.

Spending on incapacity benefits is now a smaller share of national income than in any year since 1989–90. In part, that reflects the fact that average awards have fallen from 24% of average earnings in 1986–87 to 19% in 2016–17. Meanwhile, spending on disability benefits for working-age people has consistently grown as a share of national income.

The government has committed to halve the 'disability employment gap'.

17% of people of working age are disabled. 49% of them are in paid work, compared with 81% of the non-disabled. This suggests that the government ultimately wants around one-third of working-age disabled people who are not working to be in work.

The employment gap narrowed over the 2000s and has since been stable. Looking at those aged 25 and over, the gap is especially large among the low-educated: 42% versus 85%.

Incapacity benefit claims are increasingly concentrated among the low-educated, and less concentrated among older men, than in the past.

Low-educated men aged 25–34 are now twice as likely to receive incapacity benefits as high-educated men aged 55–64. This will present a significant challenge: closing the employment gap, and reducing the incapacity benefits caseload, will depend on increasing the labour market attachment of an increasingly low-skilled group.

There is considerable variation across Great Britain in the proportion of working-age individuals receiving incapacity benefits.	This proportion varies from 2.2% in the City of London to 13.0% in Blackpool. The proportion of working-age individuals in the ESA support group also varies dramatically.
Recent governments have struggled to achieve what they intended with reforms to incapacity and disability benefits.	In 2012, spending on incapacity benefits was forecast to be 27% lower in 2015–16 than in 2010–11; but instead it was 6% higher. So spending was £15 billion, not £10 billion as forecast. There is a need to avoid over-optimism about what further reform can achieve.
The government has proposed that Jobcentre work coaches have more discretion to engage the ESA support group in work-related activity in a way tailored to individual circumstances.	This is the group assessed as having limited capability for work-related activity, which has unexpectedly become the majority of incapacity benefits claimants. To deliver a substantial impact will certainly require considerably greater resources. The support group is 50% bigger than the group of ESA and JSA claimants (combined) who are already engaged in work-related activity.
Increased discretion could have positive consequences (e.g. engagement tailored to individual circumstances) or negative consequences (e.g. inconsistency in treatment of similar claimants).	The support group is a diverse group with a range of circumstances, and many of them have multiple health conditions. A particular challenge when potentially engaging them in more work-related activity will be treating those with mental and behavioural disorders appropriately. These disorders are now the primary health condition in half of ESA cases.

7. Tax, legal form and the gig economy

The labour market is changing in interesting ways, but not fundamentally (yet).	Employees make up the majority (85%) of the workforce. But there has been growth in individuals working for themselves (either through self-employment or as a company owner-manager). Over a quarter (27%) of the workforce are part-time, higher than a decade ago. Roughly the same proportion (3.7%) as 10 years ago have a second job, which is now slightly more likely to be working for themselves.
The 'gig economy' is somewhat new but hard to spot in the data.	Workers in the 'gig economy' are distinct from previous generations of individuals who worked for themselves and 'gigged', largely due to the use of digital platforms. Current data are not designed to capture many features associated with the gig economy.
The self-employed should be distinguished from owner-managers of companies.	The self-employed and company owner-managers, while often considered as one group, differ in interesting and systematic ways. For example, company owner-managers are, on average, better educated, more likely to work full-time and tend to work in different industries. They are also treated very differently by the tax and legal systems.
The tax advantage that comes with self-employment equates to a subsidy of £1,240 per person per year.	The self-employed pay lower National Insurance contributions than employees. This amounts to £1,240 per self-employed person per year. In principle, lower access to social security benefits may justify some tax reduction, but in practice, the differences in benefit entitlements are small.
Company owner-managers get the most generous tax deal.	Company owner-managers can pay themselves in (more lightly taxed) dividends, and possibly capital gains, rather than just wages. Along with the self-employed, they also have more opportunities to avoid or evade taxes.

The massive tax advantages that come with working for your own business are not new and not justified.	The tax system has long encouraged people to work for their own business rather than be an employee. Lower tax rates are not justified by differences in employment rights or compliance burdens and are not well targeted at encouraging entrepreneurship.
Differing taxes based on how people work (their legal form) are unfair and inefficient.	Similar individuals can face very different tax burdens. This is unfair and creates economic inefficiency. Some people set up a business when, absent tax, they would be an employee. Much time and effort goes into policing the boundaries between legal forms.
The tax system should be reformed to align taxation of income across legal forms while not discouraging capital investment.	Saving and investment should be deductible from the tax base. Each extra pound of income earned should then be taxed at the same overall rates for employees, the self-employed and company owner-managers. This would simultaneously deal with many problems that plague the tax system.

8. Reforms to apprenticeship funding in England

The government is committed to 3 million apprenticeship starts in England in the five years from 2015 to 2020.	Apprenticeships are full-time jobs with an accompanying skills development programme, which includes both on- and off-the-job training. The target of an average of 600,000 new apprentices a year in this parliament represents an increase of 20% on the level in 2014–15.
From April 2017, the government is introducing an 'apprenticeship levy', which is a 0.5% tax on employers' paybill above £3 million per year.	The Office for Budget Responsibility (OBR) estimates that the levy will raise £2.6 billion in 2017–18, rising to £2.8 billion in 2019–20. Most of the increase in revenue will not be used to fund apprenticeships. In England, apprenticeship funding is set to increase by £640 million in cash terms between 2016–17 and 2019–20.

We estimate that at least 60% of employees work for an employer who will pay the levy.	This is despite the fact that, as the government highlights, only 2% of employers will pay the levy (because they have large paybills). We would expect a payroll tax such as the apprenticeship levy to result in lower wages for employees. The OBR estimates that the levy will reduce aggregate wages by 0.3% by 2020–21.
Government will pay over 90% of off-the-job training costs for apprenticeships, up to certain price caps.	This will significantly increase the incentive to employ apprentices – particularly those aged 19 or over, for whom the government subsidy was previously 50% or lower.
The increased subsidies will incentivise employers to relabel existing training schemes as apprenticeships.	This is one form of 'deadweight', with the government funding some training that would have occurred anyway. Such relabelling is made easier by the fact that employers can be funded to provide some training themselves.
Significant expansion of apprenticeships could come at the expense of quality.	The new Institute for Apprenticeships may be under pressure to approve new apprenticeship standards quickly. An expanded role for Ofsted is welcome, but it has already expressed concerns about the quality of some of the apprenticeship schemes created more recently.
The government has set all large public sector bodies legally binding targets for apprenticeship starts each year.	All public sector employers with at least 250 employees in England must employ new apprentices amounting to 2.3% of their headcount each year. This potentially costly policy is largely designed to hit the government's target for 3 million new apprentices, not as a way to increase the quality of public services. It should be removed.

There might be a strong case for expanding apprenticeships but the government has failed to make it.	There has not been the collapse in training by employers that the government claims and the returns to public investment in apprenticeships are not nearly as high as the government suggests. However, young people in England are comparatively low skilled and research has found higher returns to apprenticeships than to other forms of vocational education. There is a good case for expanding apprenticeships, but perhaps more gradually and where we can ensure high-quality provision.

9. ICAEW: debt

The government continues to rely on external finance to provide the funds it needs to pay for spending, for investment, and to repay existing debts as they fall due.	The government needs to raise £646 billion from external investors over the next five years. This is £11 billion more than the amount it raised over the last five years, with greater refinancing, higher government lending and lower asset sales more than offsetting a £293 billion reduction in fiscal deficits.
The government should update its treasury management objectives and strategy to ensure they are fit for purpose.	The government's most recently published treasury strategy is embodied in a 1995 treasury management review that predates Bank of England independence, the global financial crisis, quantitative easing and the UK's decision to leave the EU.
By purchasing gilts, the Bank of England has significantly altered the risk profile of the government's debt portfolio.	Gilt maturities have increased to an average of more than 18 years, much greater than for other countries. This should reduce exposure to changes in short-term interest rates, but the Bank of England's gilt holdings have the effect of swapping a significant proportion of this exposure back again.

Higher inflation and interest rates could significantly increase interest charges, potentially putting back the government's objective of eliminating the fiscal deficit.	Higher inflation, and potentially higher interest rates too, would have a significant impact on interest charges. A 1 percentage point increase in inflation and a 1 percentage point increase in short-term interest rates would increase interest charges by around £10 billion a year.
Scenario planning, including 'country-level stress tests', should be undertaken to assess the resilience of the UK to potential adverse developments in credit markets and to develop contingency plans accordingly.	Market sentiment in UK sovereign debt remains strong and the risk of investors withdrawing from credit markets appears to be very low. However, the high level of fundraising planned by the exchequer over the next five years means the UK is more exposed to adverse credit market events were they to occur.

1. The global economy

Ángel Talavera (Oxford Economics)

Key findings

Global economy will accelerate in 2017.	After growing an estimated 2.2% in 2016 – the slowest pace since 2009 – the world economy is expected to accelerate this year and expand by 2.6%, boosted by stronger growth in the US and some emerging markets. However, this still represents a modest pace compared with historic standards and would be below the long-term average of 2.8%.
A year of higher inflation and higher bond yields.	This year will mark the return of inflation for many advanced economies, as the effect of lower oil prices in 2015–16 fades and expansionary policies in the US create additional inflationary pressures. A combination of higher inflation expectations and a gradual monetary policy normalisation in the US will see bond yields rising further in most developed economies.
Risks are unusually large this year, but go both ways.	The election of Donald Trump as US President and the unpredictability of some of his policies add an additional layer of uncertainty to forecasts this year. A case can be made for both stronger- and weaker-than-expected growth. Equally, there are fears that a heavy electoral calendar in Europe could yield destabilising results, but the common currency area proved remarkably resilient to shocks during a difficult 2016 and we think this year will be no different.

1.1 Introduction

World GDP growth was very weak in 2016. At an estimated 2.2%, the global economy expanded at its slowest pace since the global financial crisis and was some way below the 2.6% forecast at the time of the 2016 Green Budget.

Last year was the year of Brexit and Trump. As far as the economy was concerned, both developments were considered likely to cause self-inflicted pain at first, but as the months pass the short-term repercussions appear not to have been as dramatic as initially feared

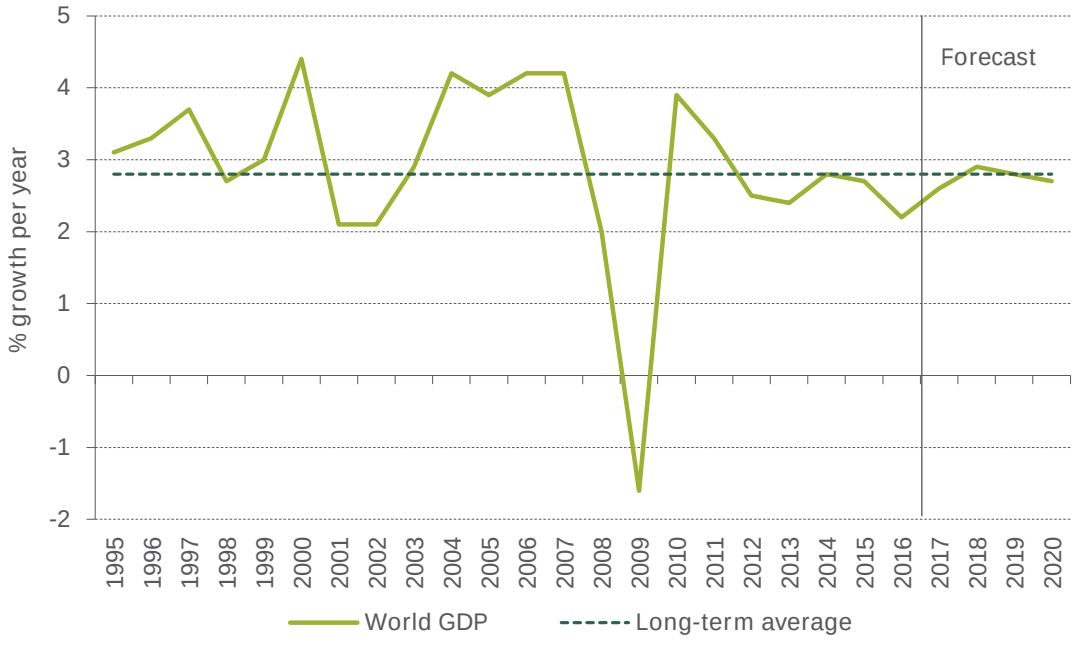
and, in the case of the latter, could even turn into a positive for world economic growth. Ultimately, a disappointing performance in the US was the main reason for the 2016 undershoot compared with our forecasts of a year ago.

We expect world growth to accelerate in 2017 (see Figure 1.1), but only modestly to 2.6%, which would still be below the 2.8% a year average of the last 30 years. The global economy is expected to benefit from stronger growth in the US (up to 2.3% from 1.6% in 2016) and also from a better performance in emerging markets (with growth rising to 4.1% from 3.4%), as a further modest slowdown in China will be offset by faster growth in other large emerging economies. Growth should remain relatively resilient in Europe, including the UK, although slowing from 2016 rates. The impact of more expansionary policies in the US will not be fully seen until 2018 when we expect world growth to rise to 2.9%.

As in 2015, the main weak points of the global economy last year were trade and industrial activity. World trade grew by an estimated 1.4% (see Figure 1.2), below the already dismal 1.6% expansion seen in 2015. A key factor behind this was declining import volumes in most 'BRIC' economies (only China recorded positive growth, and even that was very low) as well as extremely weak import growth in the US.

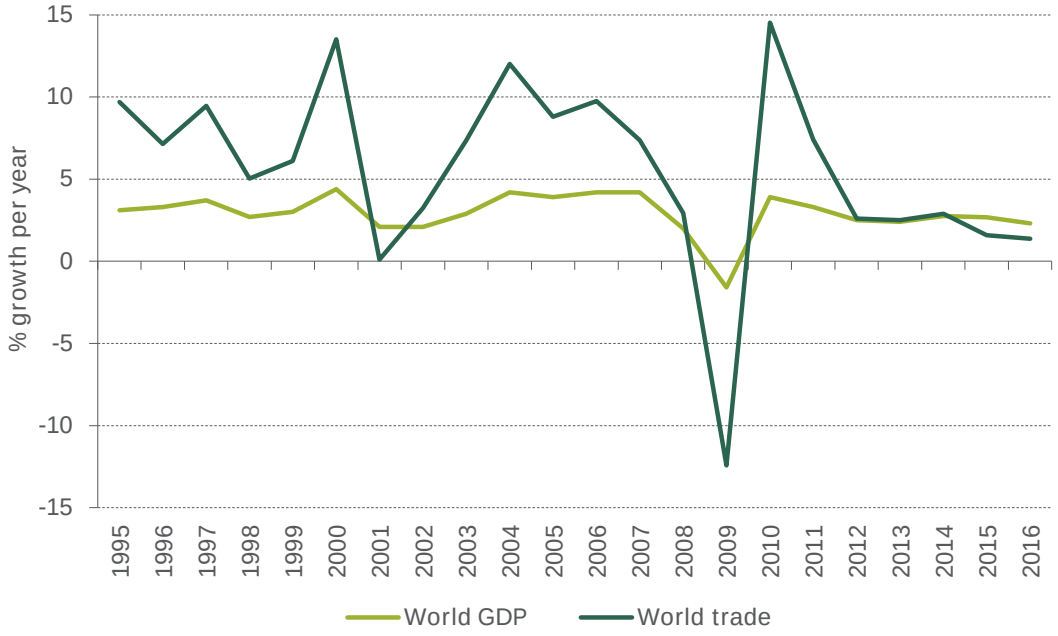
World goods trade bottomed out in mid 2016 and started to show some signs of recovery in the second half of the year. Growth in global trade will continue to improve this year, rising to 2.8%, helped by stronger import demand not just from the US, but also in Russia, Brazil and India – all of which were a drag on world trade growth in 2016. But while this year will mark an improvement from the very weak 2016, growth in trade will remain far below the long-term average of around 5% a year.

Figure 1.1. World GDP growth



Source: Oxford Economics, Haver Analytics.

Figure 1.2. World GDP and trade growth



Source: Oxford Economics, Haver Analytics.

Low global economic growth is an obvious culprit for the poor performance of trade, but we think there are some other fundamental reasons. Structural factors, such as the maturing of international supply chains and increasing protectionism in some areas, mean that there has been a significant drop in world trade elasticity – the ratio between trade growth and GDP growth – from over 2 in the 1990–2007 period to around 1.3.

Meanwhile, world industrial output rose just 1.6% in 2016 (also below an already weak 2015 and the worst performance since 2009), weighed down by a contraction in US and Japanese industrial output.

Services activity was generally stronger in 2016, helped by the boost to real incomes from low energy prices, rising employment and signs of improved wage gains in the US. Although the expected rise in inflation this year will cause real disposable income growth to moderate, we think that services can continue to grow at a robust pace, as employment dynamics remain positive in most advanced economies, and wage gains should continue to rise in more mature labour markets such as the US and Germany. In addition, monetary policy remains extremely loose in most advanced economies and property prices continue to rise in several of them, thereby supporting household wealth.

Equally important, global manufacturing PMIs (Purchasing Managers' Indices) showed a steady recovery in the second half of 2016, so we expect industrial output to bounce back this year, partially as a result of the improvement in global trade previously outlined.

There are some downside risks as well. We expect the Fed to raise rates twice this year, something not seen in more than a decade, so there is a question mark over whether the global economy will be able to absorb this. We believe it can, as monetary conditions will still be very accommodative by historic standards and financial markets ended a rather turbulent 2016 largely unscathed, with equities yielding double-digit returns in many

countries and the VIX volatility index falling to its lowest level in a year. However, a more hawkish Fed poses increased risks to emerging markets, especially countries with large amounts of US$-denominated debt and those with large current account deficits which are more vulnerable to sharp changes in capital flows.

Our forecast for the global economy is set out by region in Section 1.2, while Section 1.3 describes the key risks to this forecast. Section 1.4 concludes.

1.2 Global outlook

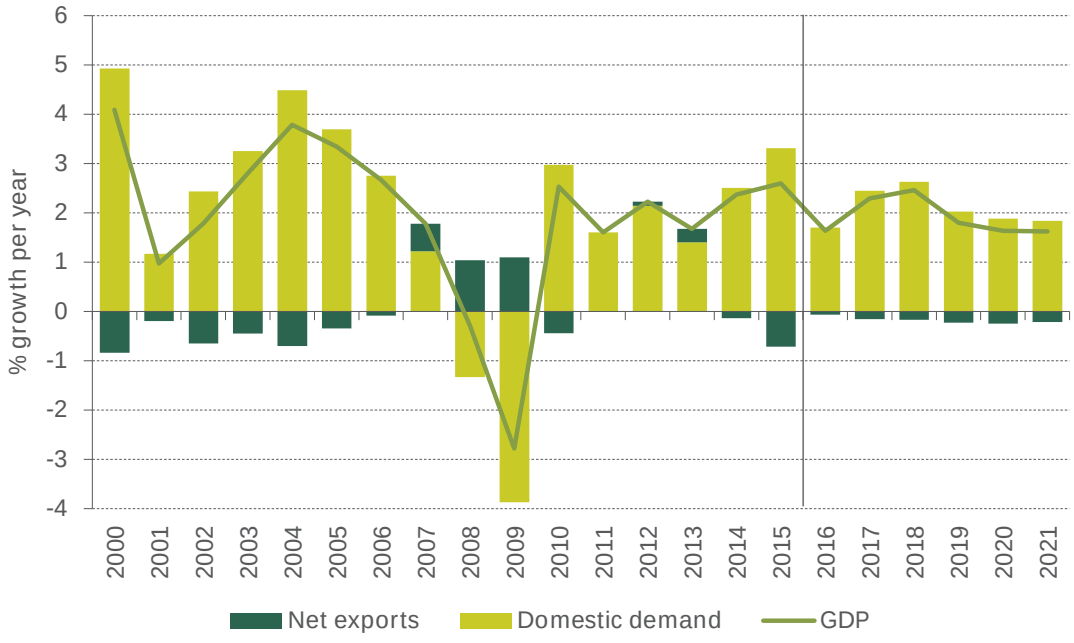
US

The US economy had a very disappointing year in 2016. GDP expanded by a weak 1.6%, the slowest rate in five years and well below our forecast of 2.4% growth at the start of the year. Growth was a meagre 1% in the first half of the year, which dragged full-year growth down despite a pickup in activity in H2.

The growth story in the US was one of duality. Household spending remained robust, expanding by 2.7%, as consumers continued to benefit from strong levels of job creation and a rise in disposable income owing to low inflation and some real wage gains. On the other hand, business activity was very weak, constrained by a strong dollar, sluggish global demand and a depressed energy sector. As a result, its contribution to economic growth was either negligible or even negative in some quarters. Similarly, the strong dollar also caused the contribution from the external sector to overall growth to be minimal as well.

We forecast that US GDP growth will accelerate to 2.3% this year (see Figure 1.3) due to a number of factors. Although the labour market is maturing and the unemployment rate is

Figure 1.3. Contributions to US GDP growth



Source: Oxford Economics, Haver Analytics.

now close to a bottom, the level of job creation is likely to remain healthy, which combined with firmer wage growth and lower taxes will continue to support household incomes. Simultaneously, although some of the headwinds seen in 2016 remain in place, business investment should recover this year, as potential tax cuts and business deregulation could unleash investors' 'animal spirits' and stimulate activity. On the external side, we expect some acceleration in US exports this year in spite of the strong dollar. However, exports will be outpaced by imports, which will grow at a stronger pace driven by solid domestic demand. Therefore, net trade will be a drag on growth this year.

However, risks around the central forecast are unusually large due to major uncertainties about policy direction from the Trump administration: a stronger fiscal stimulus and no protectionism or immigration curbs could see US growth heading towards 3%, but a trade war and sharp immigration cuts could dent economic growth heavily.

Following a 25bp increase in the Federal funds rate in December 2016, we expect the Fed to raise interest rates twice this year while allowing inflation to settle temporarily above its 2.0% inflation target. However, aware of the downside risks to growth, the Fed will maintain its cautious stance amid modest economic momentum. We expect long-term government bond yields to also rise in the near term, affected by expectations of a large fiscal stimulus and a widening federal budget deficit. Policy interest rate differentials against the rest of the world should maintain steady capital flows into the US and support the dollar again this year.

Eurozone

GDP growth in the eurozone was an estimated 1.7% in 2016. Although this was down from the 1.9% the year before, the 2015 figure had been artificially distorted by the exceptional 26% measured growth seen in Ireland, which was a one-off.

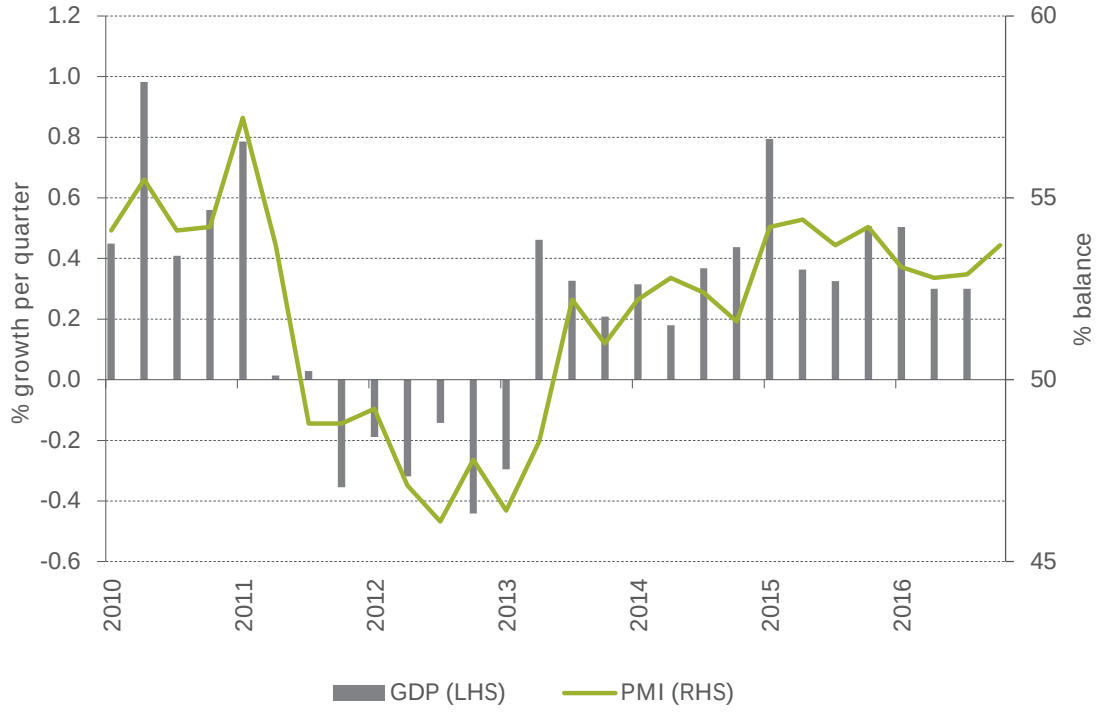
The solid 2016 performance was the result of several factors, most of them a continuation of the same driving forces behind the strong expansion of 2015: a gradual shift towards a more expansive fiscal policy; the ultra-loose monetary policy by the European Central Bank (ECB), including quantitative easing and negative interest rates, which helped lending continue the recovery initiated in 2014; and lower oil prices, which allowed consumers to loosen their purse strings as real disposable incomes were boosted by low inflation.

We expect the eurozone economy to remain solid in 2017. We think the economy has settled into a 'cruising speed' of around 0.3–0.4% a quarter (see Figure 1.4), so our growth forecast is 1.5% for the year, only slightly down from 2016. Growth will be supported by improving labour markets and solid money and credit growth, as the ECB continues to provide an extraordinary level of support this year.

Among the eurozone 'big four', we expect Spain will continue to outpace its rivals and grow 2.5%. Germany will experience average growth of 1.5%, France will see its economy expanding by 1.5%, up from 1.1% in 2016, and finally, Italy will remain the laggard and grow only 0.6%, affected by persistent political instability and a troubled banking sector.

An often-overlooked fact is that employment in the eurozone has actually been growing at a decent pace in the past three years. The unemployment rate, while still high at 9.8% in November, fell into single digits in 2016 for the first time in five years, and the eurozone

Figure 1.4. Eurozone GDP growth and PMIs



Source: Oxford Economics, Markit.

has created around 5 million jobs while reducing the number of unemployed by more than 3 million. This should help partially offset the decline in real wage growth caused by the expected rise in inflation – which will jump to 1.5% this year from an estimated 0.2% in 2016 – so we see consumer spending rising a still healthy 1.4% in 2017.

Meanwhile, the recent announcement of an extension to the quantitative easing (QE) programme at €60 billion a month starting in April means that the ECB will inject an additional €540 billion into the economy until the end of the year, while probably keeping interest rates at record lows. This continuing extraordinary level of monetary stimulus should help to support growth in the common currency area.

As interest rates differentials with the US widen further, we expect the euro to fall to close to parity against the US$ in the next 12 months. By late 2017, we expect the ECB to announce a tapering of QE as core inflationary pressures gradually build. Combined with our view that the political uncertainty in the continent will be resolved with relatively benign outcomes following the spate of national elections this year, this means we expect the euro to trough in late 2017 and then gradually strengthen thereafter. A weaker euro, combined with an improvement in global trade volumes, means that exports may provide a bit more support to growth in 2017 than last year. That said, export growth will still be fairly lacklustre in comparison with the pre-global-financial-crisis years.

We do not expect the eurozone economy to be significantly affected by Brexit-related developments in 2017 – we have long held the view that the effects of Brexit in Europe will be spread over many years rather than being one sharp, single shock, a notion that has been corroborated thus far by economic data since the UK referendum. We also think

risks from 'populist' political movements are overstated and, under our baseline, we do not consider a break-up of the eurozone a serious risk. There are several reasons for this, such as the electoral system in France, which makes the election of a populist such as Le Pen less likely, but also the fact that the costs of leaving the common currency would be catastrophic. Despite the public discontent with several aspects of the EU and its economic policies, we do not think there is a real appetite to leave the union or the eurozone.

That said, increased political noise will be a constant throughout the year given the heavy electoral calendar – with presidential and parliamentary elections scheduled in Germany, France and the Netherlands, and possibly in Italy as well – and could have some impact on confidence, and by extension on economic growth.

Japan

The Japanese economy started 2016 on a strong footing, but lost momentum in the second half of the year and expanded by an estimated 1% overall, a fairly typical lacklustre performance. Both household spending and exports grew at a rather weak pace – the latter partially a function of slower growth in Japan's key trading partners – but a decline in imports (an estimated 2.1% in 2016) meant that net trade contributed positively to economic growth.

We expect GDP to expand by only about 1% again in 2017, but with a healthier composition of growth. Consumer spending will grow by 0.9%, supported by government cash handouts to low-income households and solid employment growth. Export growth will also accelerate (from an estimated 0.2% in 2016 to 0.7% in 2017) boosted by the weaker yen, which has lost 10% against the US dollar since the US elections in November, driven by a widening in the US–Japan yield differential.

Although fixed investment will accelerate slightly this year on the back of stronger growth in corporate profits, the outlook remains soft. However, an increase in government infrastructure spending will partly offset the forecast decline in business investment. Residential investment is also expected to record another solid year of growth in 2017.

We expect the yen to continue to depreciate versus the US dollar this year, breaking above the 120 yen/US$ barrier. However, despite the weaker yen projection, we do not think that it will be enough to boost inflation expectations materially and inflation will still fall short of the Bank of Japan (BoJ)'s 2% inflation target. Consequently, we expect the BoJ to continue to target the 10-year yield at 'around 0%' in 2017 and 2018. Faced with ongoing upward pressure on Japanese yields, we expect the BoJ to announce further fixed-rate money market operations.

Emerging markets

Following an already poor 2015 (when emerging market (EM) aggregate growth was 3.5%), EM growth slowed further to 3.4% in 2016, the slowest pace since 2009 and well below the average pace of 6% from 2000 to 2014. Performance among the 'BRIC' economies (Brazil, Russia, India and China) was very uneven: Russia and Brazil still saw declines in GDP (of –0.6% and –3.4% respectively), although both countries started to emerge from recession towards the end of the year, in particular Russia. Chinese growth decelerated to the slowest pace in 25 years, but at 6.7% was broadly in line with expectations and the target set by the Chinese authorities. Finally, India was the best performer among this group, with GDP growth reaching 7.1%.

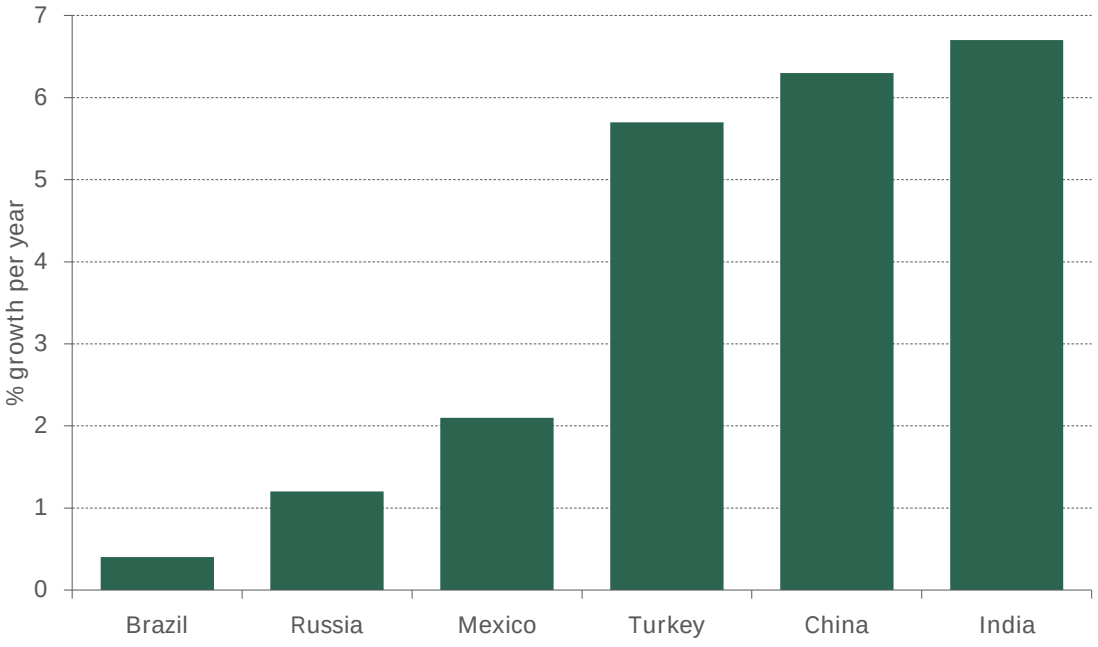
For many emerging markets, Trump's policies will largely determine their futures this year. Emerging market assets have recovered some of their losses since Trump's election victory, but EM currencies have suffered the brunt of the shock. Although some central banks have already moved to contain the impact, we expect EM currencies to remain under pressure as the Fed tightens policy further this year.

It seems increasingly clear that the Trump administration will pursue an expansive fiscal policy, including higher infrastructure spending. This could boost demand for commodities and lead to a pickup in US growth, both of which would be beneficial for EM prospects. But serious risks lie ahead for the EMs, even if the protectionist element of Trump's platform takes a back seat in actual policymaking. Greater optimism about US growth prospects could lead to the Fed hiking rates more aggressively, resulting in a stronger dollar and higher bond yields. And EM corporate debt levels have risen sharply in recent years, increasing their vulnerability to higher US rates and raising refinancing risks for their large stock of US$ debt.

Against this backdrop, concerns about the outlook for emerging markets are likely to persist. Higher interest rates in developed economies will weaken capital flows to emerging markets. Countries with large current account deficits (such as South Africa and Turkey) that are not covered by sufficient foreign direct investment (FDI) flows are likely to be most at risk.

Focusing on China, we think the Asian giant should benefit from a possible pickup in US growth from Trump's more expansionary fiscal policy this year. But the increase in uncertainty and risk of China-specific trade restrictions will weigh on exports. Overall, we expect a slight improvement in the export outlook this year, helped by some strengthening of global demand and the depreciation seen in the renminbi.

Figure 1.5. Emerging markets' 2017 GDP forecasts



Source: Oxford Economics.

Domestically, infrastructure investment should remain solid, in the year of a major leadership reshuffle in the Communist Party. And corporate investment should benefit somewhat from renewed profit growth. But the recent tightening of housing purchasing restrictions in many large cities will weigh on real-estate investment and consumption will probably slow further on moderating wage growth. Overall, we expect China's GDP growth to continue to decelerate gradually, with expansion seen at 6.3% this year (see Figure 1.5). However, this falls in line with a more flexible approach by Chinese policymakers to interpret growth targets less rigidly and to start shifting their focus towards risk management.

Our estimates suggest capital outflows from China have been creeping up again in recent months and outflow pressures are likely to persist, if not strengthen, in 2017 as US interest rates rise. We expect the People's Bank of China will continue to walk a fine line, allowing some further weakening of the renminbi against a globally strengthening US dollar but continuing to dampen the depreciation pressures, while at the same time containing financial capital outflows in order to limit foreign exchange (FX) reserve depletion. We expect policymakers to continue with this approach rather than letting the CNY weaken more significantly, because of the impact on confidence in the currency domestically and unfavourable reception abroad. To contain FX pressures, we expect policymakers to continue to tighten up enforcement of foreign exchange regulations and restrictions.

Global outlook

Although this year's world growth forecast of 2.6% (see Table 1.1) represents a modest improvement over 2016, it nevertheless implies a continuation of the overall trend of subdued growth that we have witnessed for most of the decade. The forecast is not only well below the 4% rates seen in the pre-crisis period of 2004–07, but more significantly it also remains below the long-term average.

Growth will accelerate in both developed and emerging economies this year. Developed economies will see growth rising to 1.8% from 1.5% in 2016 on the back of stronger US growth. Emerging market growth will also strengthen, to 4.1% from 3.4% last year, as Brazil and Russia finally emerge from their long slumps, while Turkey experiences some acceleration following a weak 2016.

In terms of policy settings, monetary policy is set to remain expansionary in the eurozone, the UK and Japan this year. Meanwhile, although the US is forecast to raise rates further, we expect it to do so at a very modest pace by historical standards. Moreover, the Federal Reserve will not start to shrink its balance sheet this year, so the overall monetary stance in the US will tighten only gradually.

Divergent monetary policy in the US, Japan and the eurozone will contribute to further exchange rate movements. We expect another year of US dollar strength, with the euro/US$ falling to parity by the end of 2017 and the yen/US$ rate moving to 124 from 117 at the end of 2016.

This year will also see the return of inflation to most advanced economies, as the effect from higher energy prices feeds into headline consumer prices. Inflation will comfortably exceed 2% in the US and the UK and, at close to 1.5% in the eurozone, it will be at its highest level in five years. Inflation will also be higher in some emerging markets,

Table 1.1. Summary of international GDP forecasts (annual % change unless stated)

	2015	2016	2017	2018	2019	2020	2021
North America							
United States	2.6	1.6	2.3	2.5	1.8	1.6	1.6
Canada	0.9	1.3	1.7	1.8	1.9	2.0	1.8
Europe							
Eurozone	1.9	1.7	1.5	1.5	1.4	1.3	1.3
Germany	1.5	1.8	1.5	1.4	1.1	1.0	0.9
France	1.2	1.1	1.5	1.5	1.5	1.5	1.3
Italy	0.6	0.9	0.6	1.1	1.1	1.1	1.0
UK	2.2	2.0	1.6	1.3	1.6	2.1	2.3
EU27	2.1	1.8	1.6	1.6	1.5	1.6	1.5
Asia							
Japan	1.2	1.0	1.0	0.9	0.6	-0.3	0.6
China	6.9	6.7	6.3	5.9	5.7	5.6	5.4
India	7.2	7.1	6.7	7.2	6.9	6.6	6.3
G7	1.9	1.5	1.8	1.8	1.5	1.3	1.4
World	2.7	2.2	2.6	2.9	2.8	2.7	2.7
World 2010 PPPs	3.2	3.0	3.3	3.6	3.5	3.4	3.4
World trade	1.6	1.4	2.8	3.2	3.7	3.7	3.8

Source: Oxford Economics.

especially those suffering from strong currency depreciation, such as Turkey or Mexico. For the world as a whole, inflation will rise to 3.2% from an estimated 2.8% in 2016.

1.3 Risks to the global economy

There are significant risks to our global forecasts for 2017 and beyond. Below, we outline two of our key scenarios for the global economy in which global growth could diverge significantly from our baseline, both to the upside and to the downside. We assess their possible implications for the UK economy in Chapter 2.

US growth surges amid Trump fiscal stimulus

Our baseline forecast assumes a compromise between President Trump and Congress, with a modestly expansionary fiscal package and targeted trade protectionist measures, but the degree of policy and political uncertainty is unusually elevated in 2017. In this scenario, we explore the upside potential from a greater relaxation of fiscal orthodoxy in exchange for a less protectionist trade stance.

The result of congressional negotiations is a significantly more expansionary fiscal package than assumed in the baseline. The package is larger, with $1 trillion worth of personal income and corporate tax cuts and a $250 billion public infrastructure investment plan. Notably, this benefits lower-income households, which have a higher propensity to spend additional income, to a greater extent than the package assumed in the baseline.

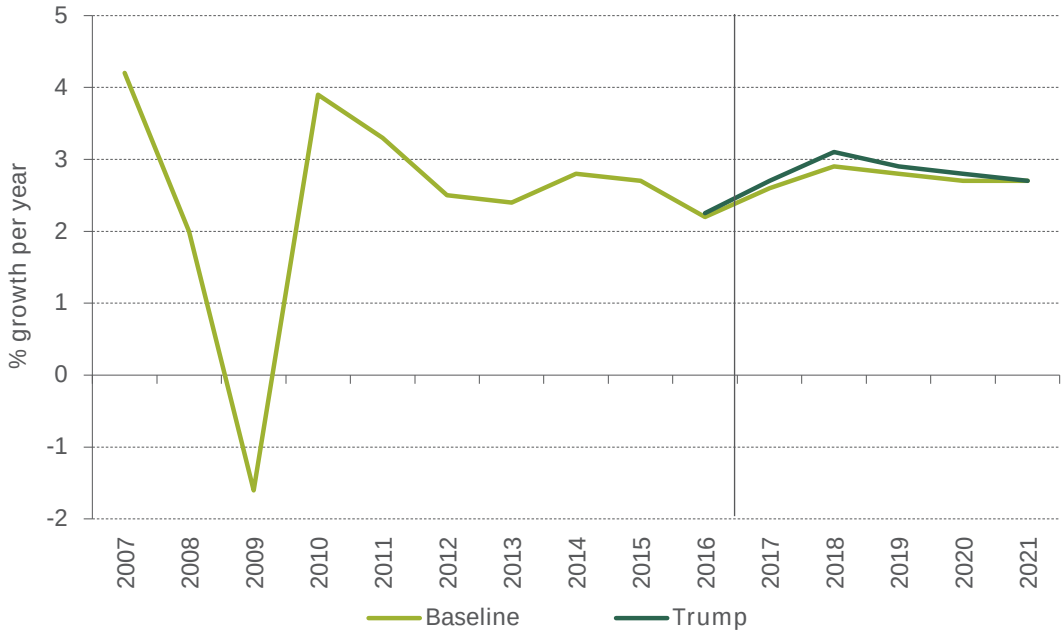
Trump negotiates the relaxation of fiscal orthodoxy from Republicans in exchange for a less protectionist stance than he campaigned on. As a result, he refrains from substantial tariff hikes except in some specific cases.

As a result, the US economy grows more quickly than in the baseline in the short and medium term, when the effects of an expansionary fiscal policy are mostly felt but the impact of higher deficits is still not fully felt. The economy benefits not only from the initial impact from lower taxes and increased infrastructure spending, but also from increased confidence in the ability of Trump and his team to govern. In 2017, GDP growth picks up to 2.5% (compared with 2.3% in the baseline); in 2018, when the boost from fiscal stimulus and private sector confidence peaks, growth reaches 3% (compared with 2.5%).

The global economy grows more quickly as stronger US growth spills over, fears over increased protectionism dissipate and confidence improves. World growth reaches 2.7% in 2017 and 3.1% in 2018 (see Figure 1.6), 0.2–0.4 percentage points above baseline. The impact varies across countries, reflecting policy and market developments, but most economies around the world benefit from renewed confidence, stronger global trade and more buoyant equity markets.

But, as the Fed brings forward its tightening cycle (with the ECB and Bank of England following suit), a stronger dollar and higher dollar interest rates reduce the attractiveness

Figure 1.6. World GDP growth under ‘positive Trump’ scenario



Source: Oxford Economics, Haver Analytics.

of emerging market assets. As capital flows from emerging markets to the US amid investor concerns over the impact on emerging market balance sheets and reduced incentives to 'hunt for yield', credit conditions tighten in more vulnerable emerging market economies and the boost to activity is at least partially eroded.

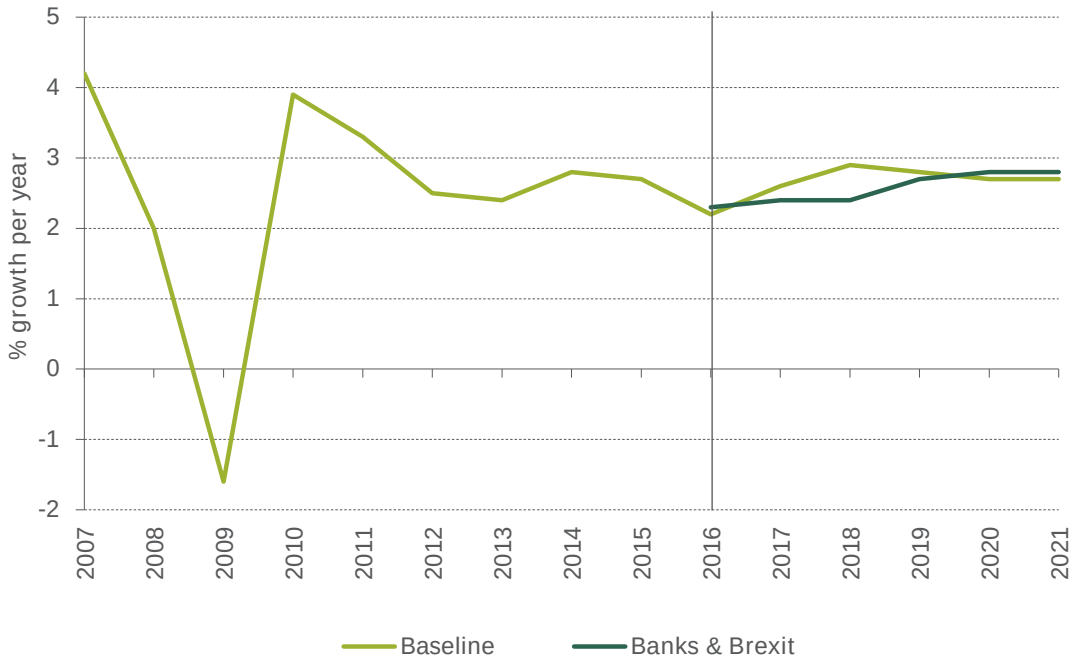
Banks and Brexit hit European activity

In this scenario, we explore how Brexit-related weakness in the UK and structural banking problems in the eurozone could result in a lower trajectory of growth for Europe as a whole.

In the UK, economic activity has held up reasonably well since the vote to leave the EU in June 2016, largely because the impact on consumer sentiment has been muted. But some of the effects of the vote may be yet to be seen. At the same time, problems in the eurozone banking system may be returning to the fore. In recent months, we have revised down our baseline forecast for eurozone growth, inflation and bond yields, highlighting the ongoing concerns over structural challenges facing banks as the macroeconomic backdrop weighs on net profit margins.

In this scenario, we consider both sources of potential European weakness. In the UK, the post-referendum depreciation of sterling feeds through more strongly to UK inflation than assumed in our baseline forecast – with the impact on consumer prices exacerbated by renewed falls in sterling as exit negotiations get off to a rocky start. Higher inflation increases the squeeze on the consumer sector, while sentiment is adversely affected by the challenging start to negotiations. Private sector retrenchment ensues. In the eurozone, the combination of rising unprovisioned non-performing loans (NPLs) and renewed downward pressure on bank equities adds to challenges facing the banks, weighing further on the supply of credit.

Figure 1.7. World GDP growth under 'Brexit and European banks' scenario



Source: Oxford Economics, Haver Analytics.

The UK and the eurozone see the largest hit to growth in this scenario. The rest of the world does experience some negative spillovers in the form of weaker trade, a fall in asset prices and a deterioration in their competitiveness as sterling and the euro weaken. However, the global economic impact is muted (see Figure 1.7). That is also the case for commodity and asset markets, with oil prices and policy rates outside Europe only modestly affected.

1.4 Conclusion

The year 2016 was similar to 2015 inasmuch as the pattern of a 'dual economy' that we outlined a year ago continued to dominate the world economy for most of the past 12 months. Consumer spending and growth in services were generally much stronger than growth of manufacturing and other tradables in the face of weak global demand.

This year, we are looking at a different picture: manufacturing activity started outpacing that of services in many countries towards the end of 2016, and had the best performance in two years in Q4. This is also in line with the incipient recovery in world trade that we started to witness in H2 2016. Global trade in 2015 and 2016 saw its worst two-year period since the global crisis, but we expect it to accelerate this year, a phenomenon that is likely to go hand in hand with the recovery in manufacturing activity.

Risks around the forecast are unusually large this year, but they are more balanced and there is an increasing chance that forecasts may be too pessimistic and could be subject to upward revision.

Another big theme this year will be the return of inflation. Inflation is a double-edged sword: it will erode real disposable incomes, causing household consumption growth to slow, but it will also help highly-indebted countries as it will give a much welcome boost to nominal GDP, reducing debt relative to national income. Overall, a move towards more 'traditional' rates of inflation should be seen as a welcome development, as it signals that some of the scars following the Great Recession are starting to heal, if only partially and very unevenly across regions.

This will also be the year when the UK activates Article 50 and when the next leaders of Europe will be elected. Political 'noise' will be constant throughout 2017 and we expect to see and hear a lot about populism and the potential for a eurozone break-up. We think these fears are overstated and that there are enough mechanisms in place to prevent such a traumatic event.

2. The UK economic outlook

Martin Beck and Andrew Goodwin (Oxford Economics)

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.

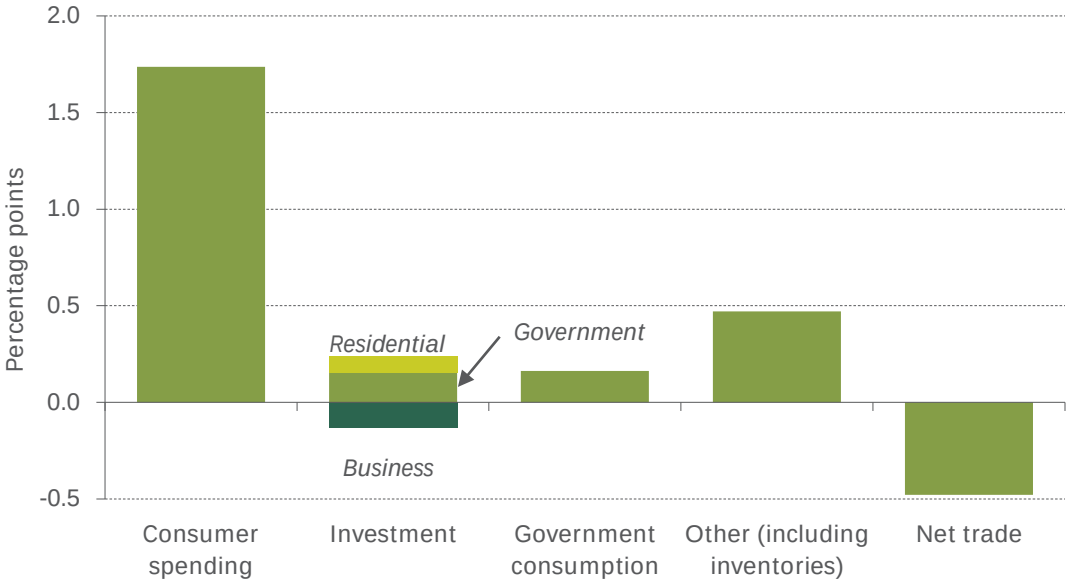
In practice, GDP grew by more than 1% over that period. In fact, average quarterly growth of 0.6% was fractionally above the pace set in the first two quarters. In explaining this better-than-expected performance and indeed the pattern of expansion in 2016 as a whole, the consumer was king. Household 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.

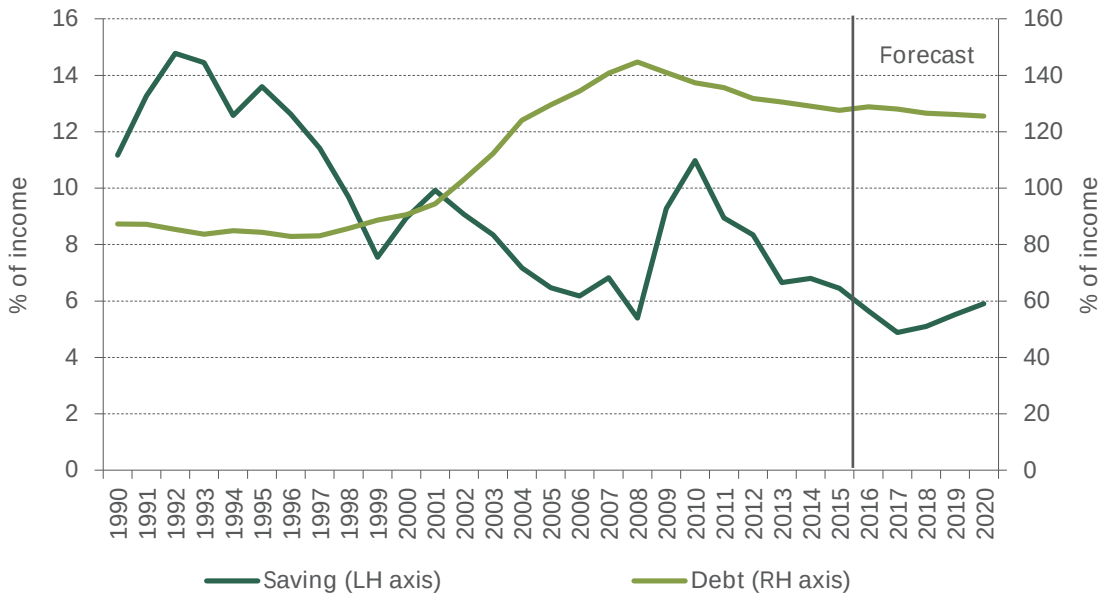
trend since the middle of last year and the scale of falls in unemployment has eased over the same period (although the increased difficulties of recruiting in a world of historically low joblessness would suggest some slowdown was inevitable). We expect the LFS unemployment rate to rise moderately over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

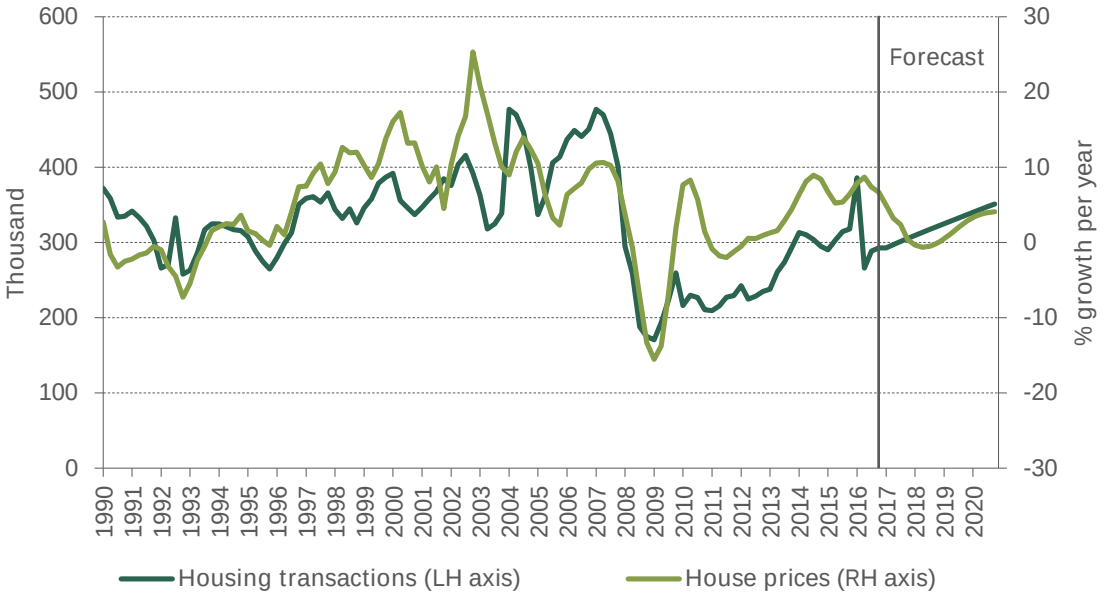
On the activity side, it appears that there was a modest recovery in both transactions and mortgage approvals through the second half of 2016. With transactions running at 97,600 and approvals at 67,505 last November, both metrics ended the year broadly in line with the levels that were averaged for 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

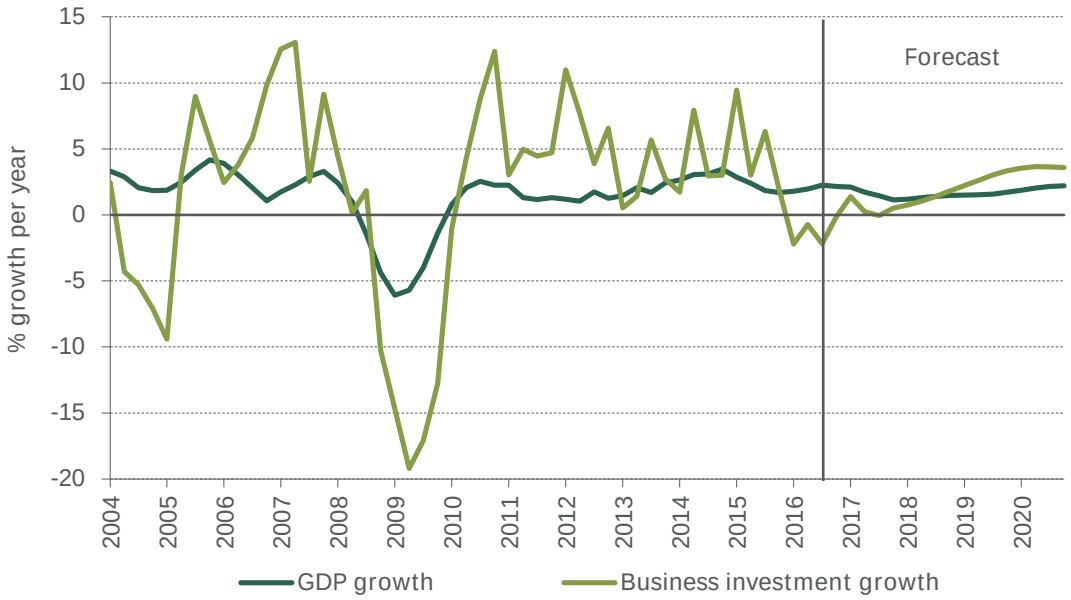
Business investment has long been identified as being particularly vulnerable to economic and political uncertainty, given the lumpy and often irreversible nature of this form of spending. This has led to the concept of the 'option value' of waiting until a lack of clarity about the future is resolved 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.

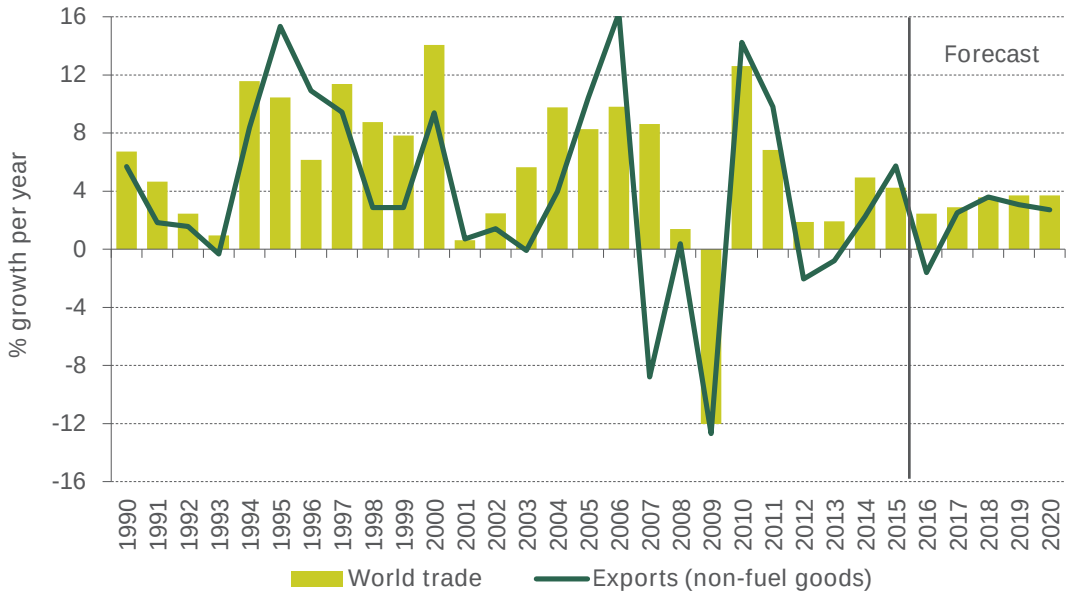
It is difficult to argue that the pound's weakness is not in part Brexit-related, reflecting fears that the UK's exit from the EU will leave the economy permanently smaller than in a 'remain' counterfactual. Indeed, since last summer, sterling has shown itself very sensitive to news around different 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.

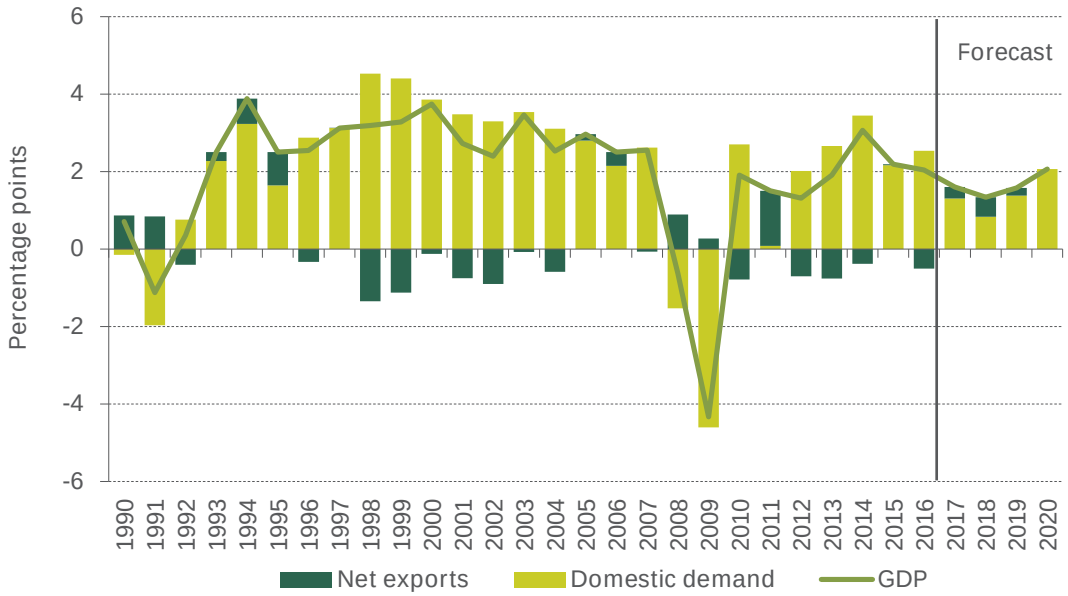
economies looks more uncertain given the difficulties presented by rising US interest rates and the possibility of growing trade protectionism. But with UK exports still predominantly directed towards developed markets, the risk of a further slowdown among emergers is less of an issue for the UK than 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

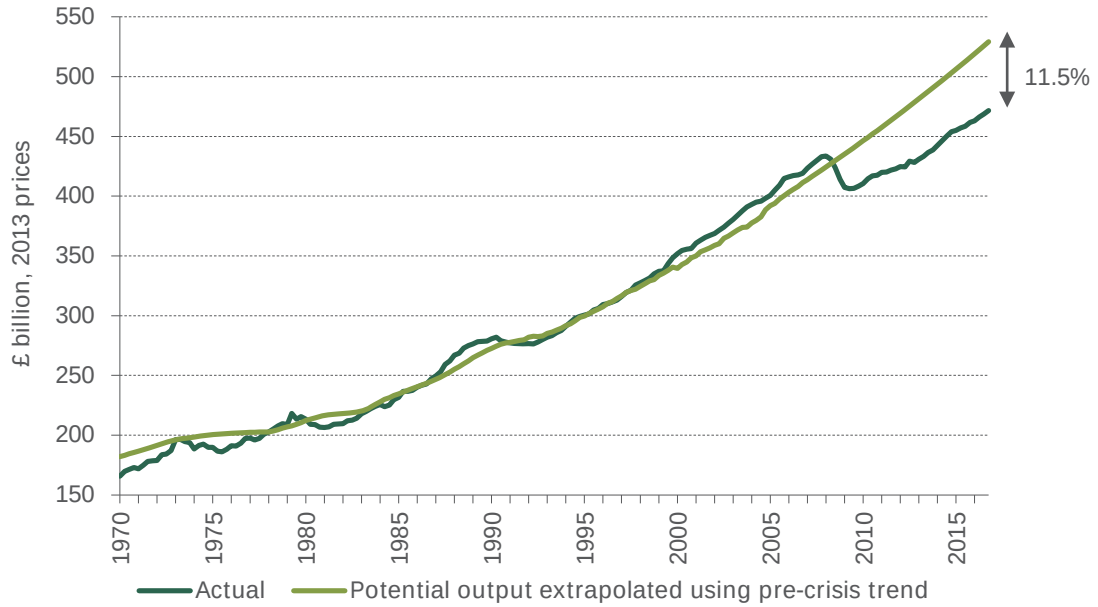
Over the medium term, our baseline forecast shows the UK economy growing at a pace that is some way below historical norms. But a huge degree of uncertainty surrounding medium-term prospects will persist until we get greater clarity around the shape of the UK's post-Brexit relationship with the EU and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

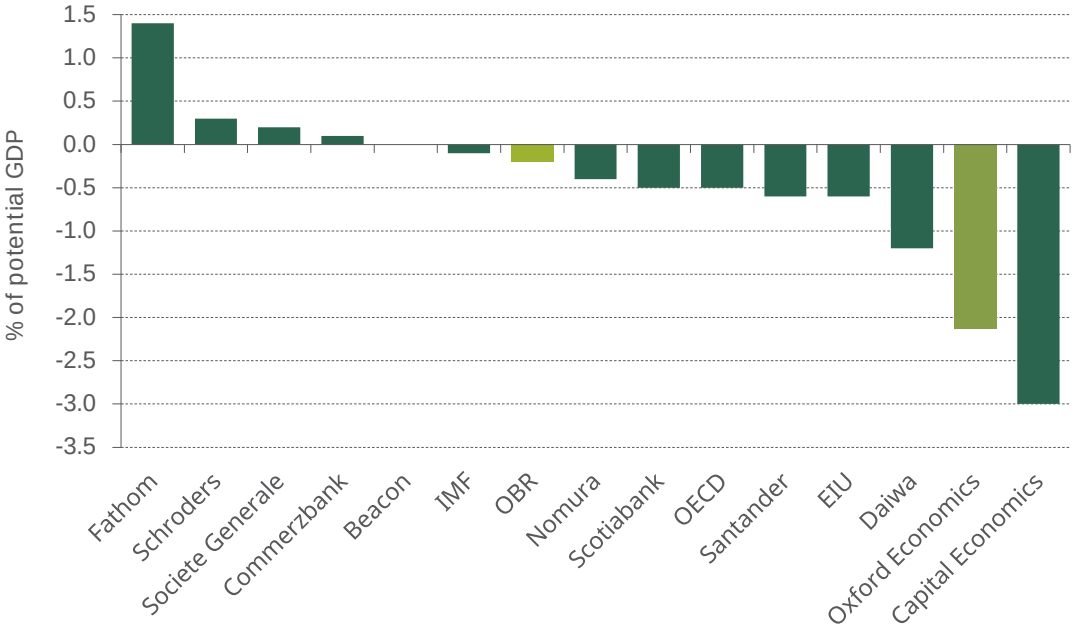
Figure 2.8. Quarterly GDP relative to extrapolation of pre-crisis trend



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;

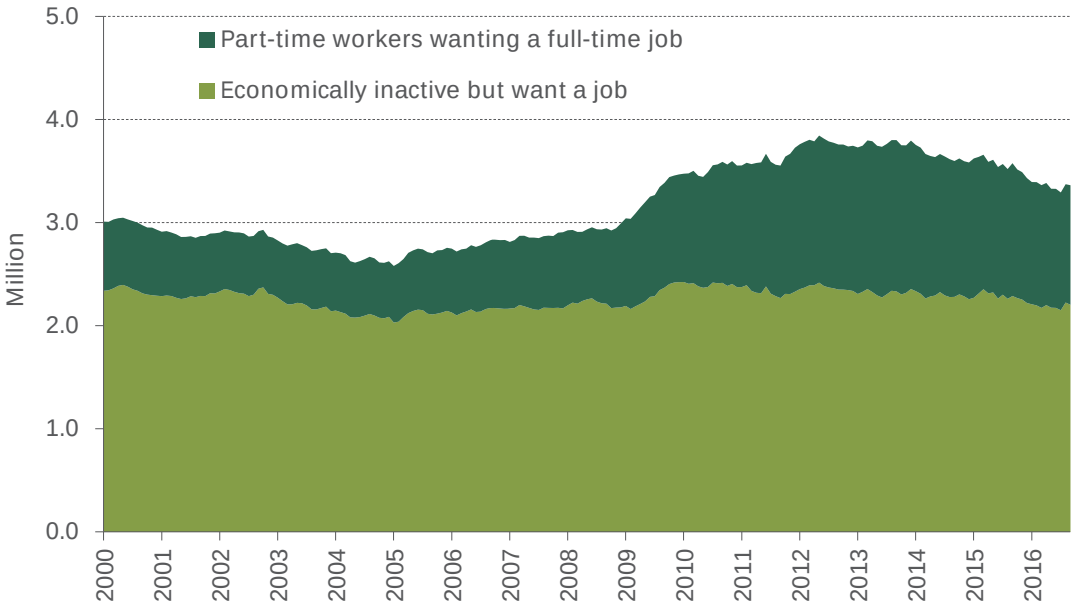
A is total factor productivity (TFP).

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.

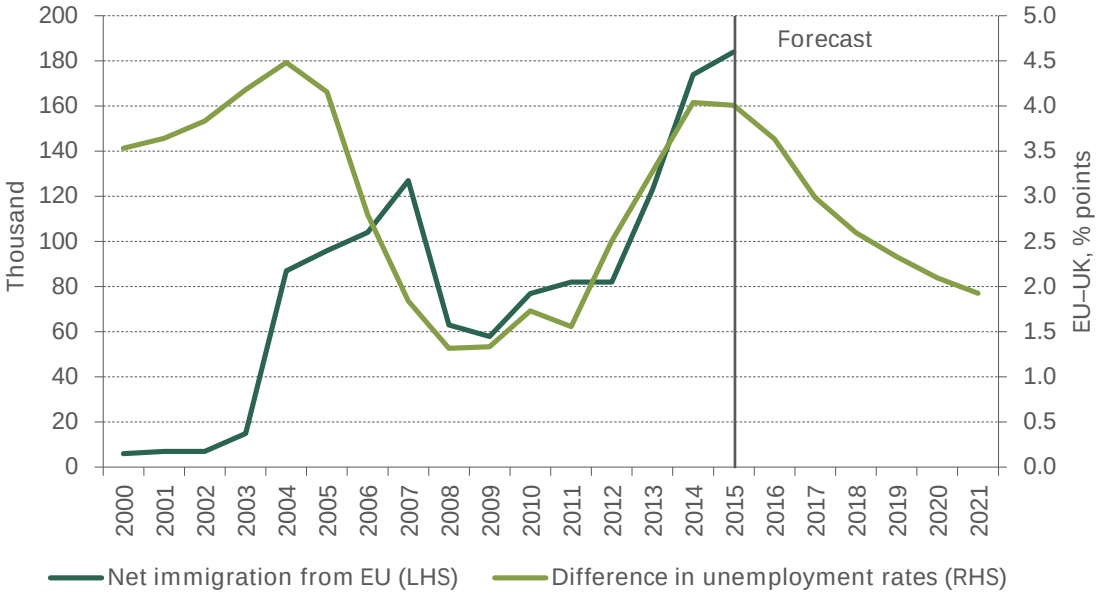
Labour supply

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.

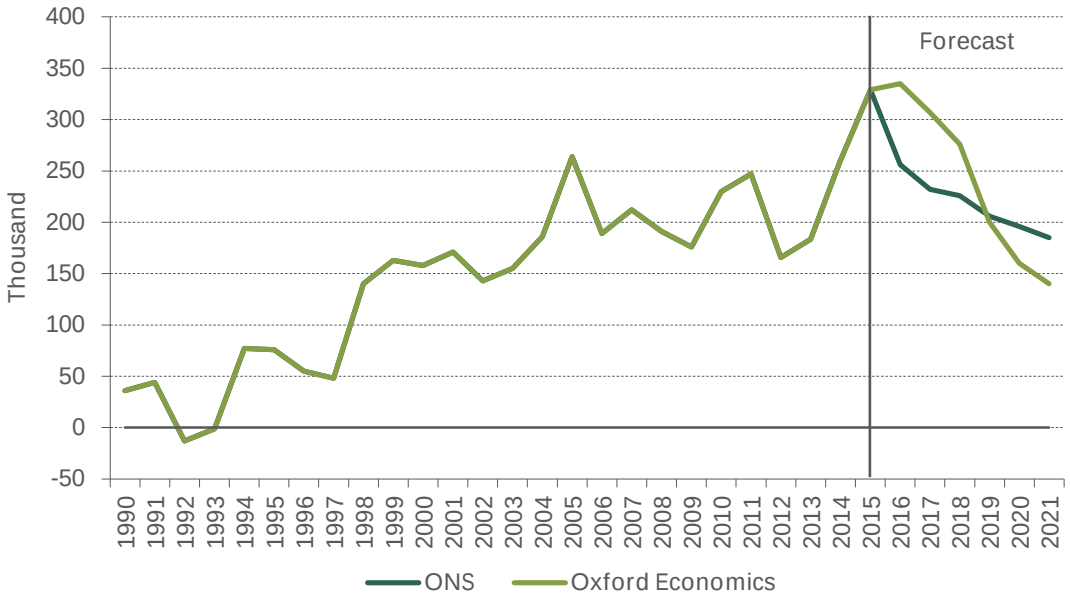
The current (2014-based) ONS principal population projections, which the OBR adopts for its forecasts, have proven to be an underestimate over the past couple of years and this is likely to continue to be the case in the short term. However, as labour market prospects continue to improve elsewhere in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

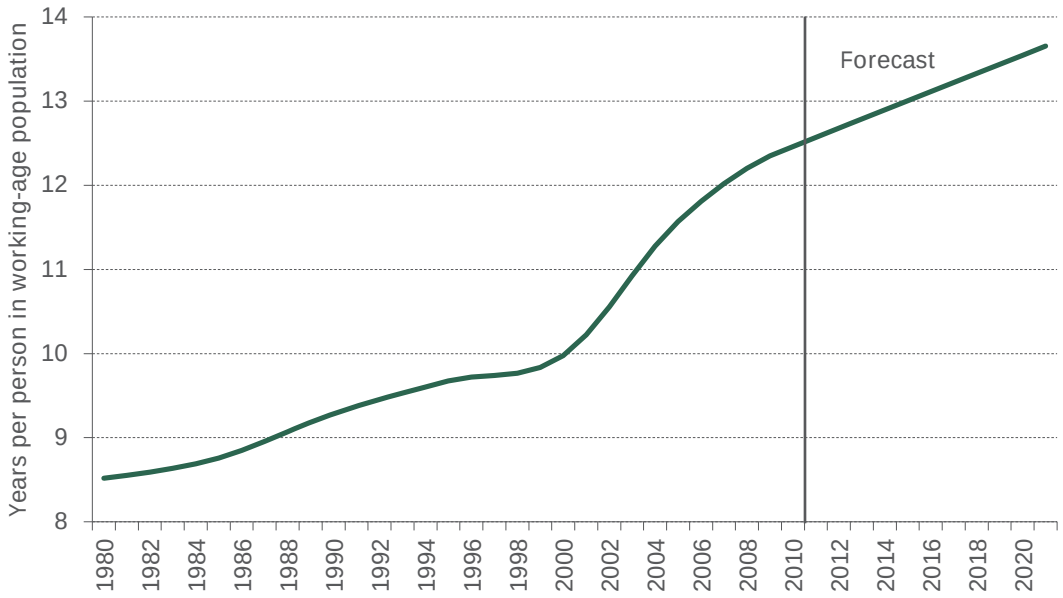
Bringing these factors together, we find that the contribution of labour supply to potential output growth is expected to be 0.3ppts a year over the period 2017–21. This is somewhat weaker than the 0.5ppts a year seen in both the 1996–2006 and 2007–16 periods.

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).

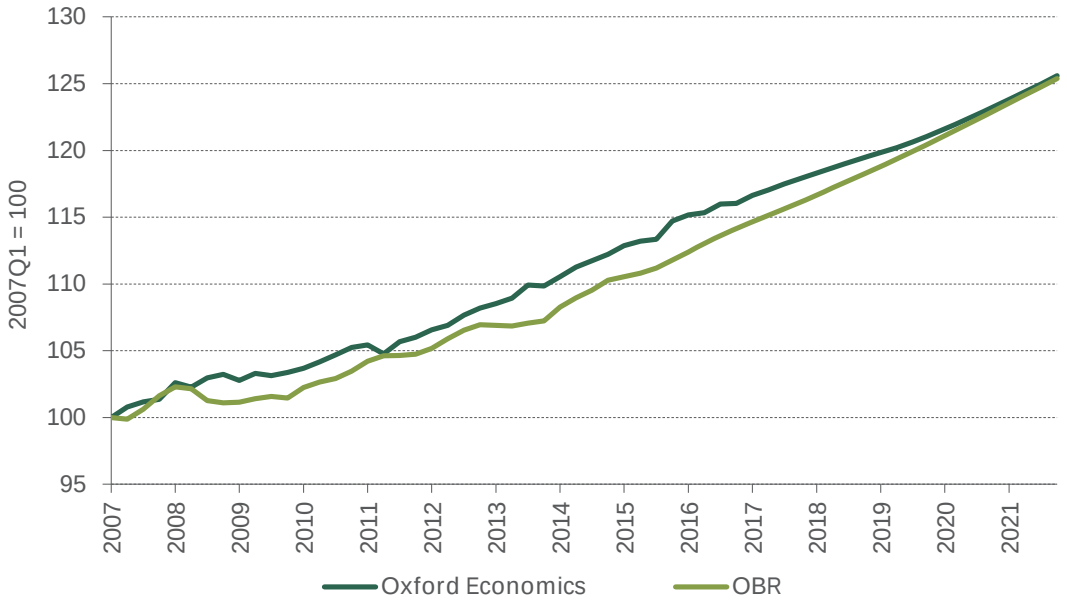
Table 2.1. Contributions to potential output growth (percentage points per annum)

	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.

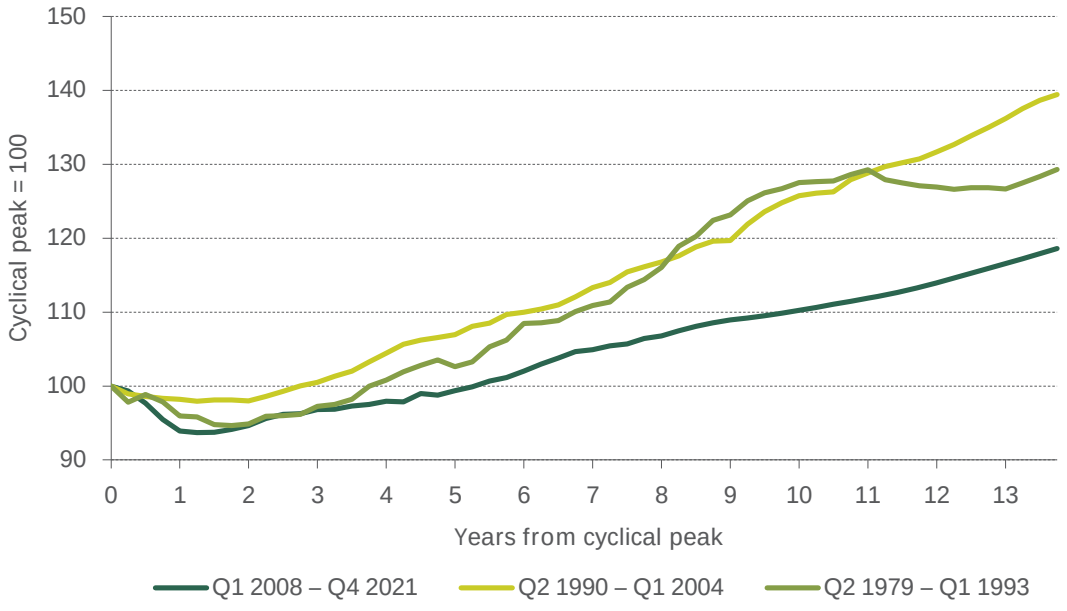
We estimate that the output gap was around 1¾% of potential output in Q4 2016. With the economy set to grow slightly more slowly than potential output over the next few years, the output gap should widen a little, before starting to close again over the second half of the forecast horizon. By the end 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

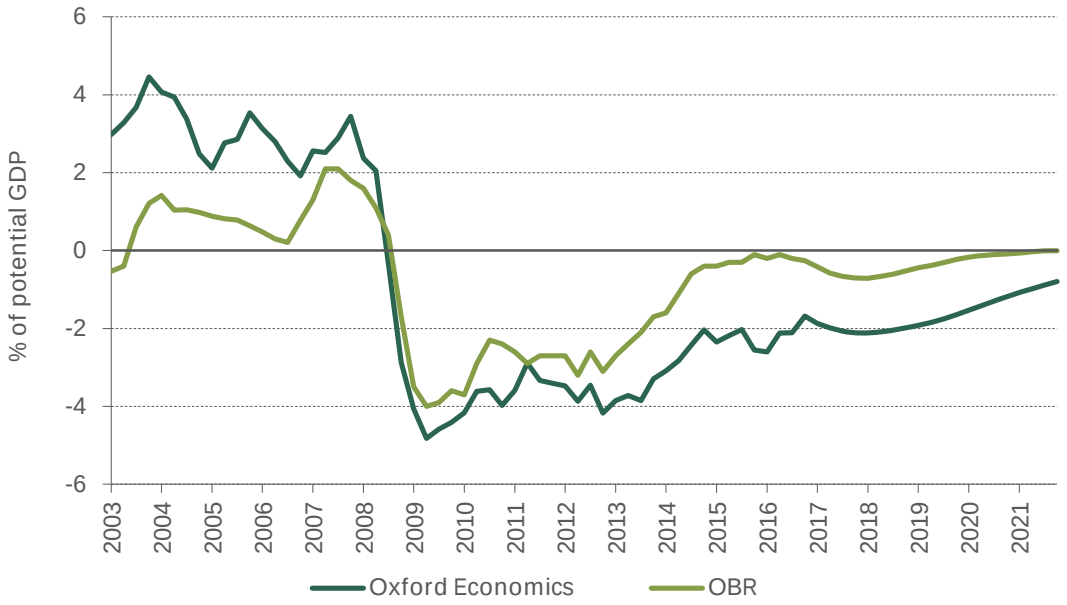
Source: Oxford Economics.

Figure 2.15. Comparison of UK economic cycles



Source: Oxford Economics & Haver Analytics.

Figure 2.16. Output gap



Source: Oxford Economics & OBR.

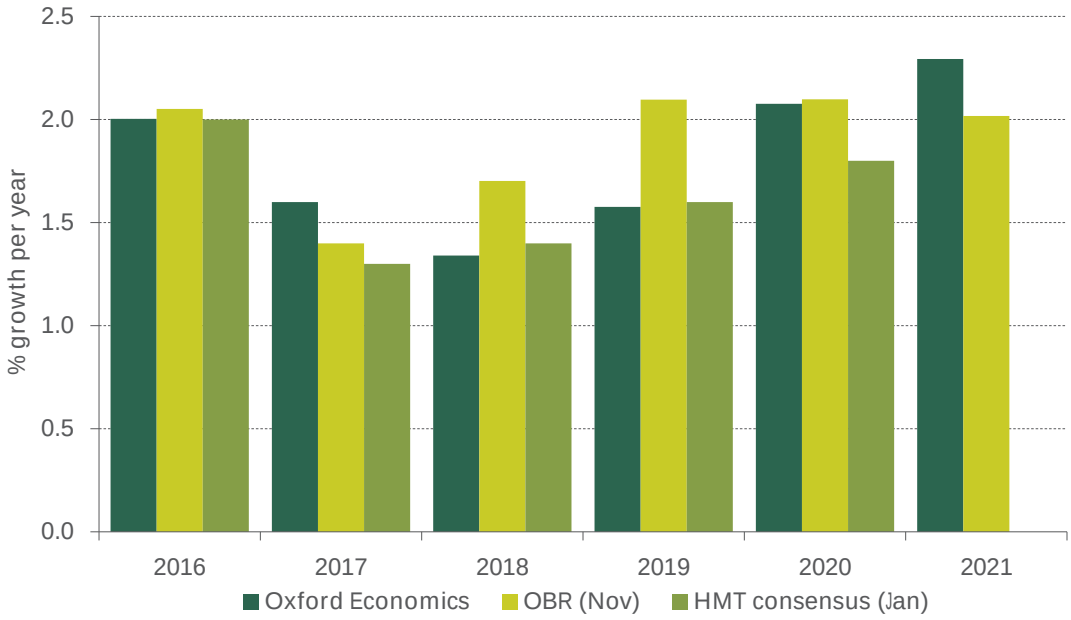
until well into 2019 and will subsequently be able to tighten policy at a very measured pace.

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.

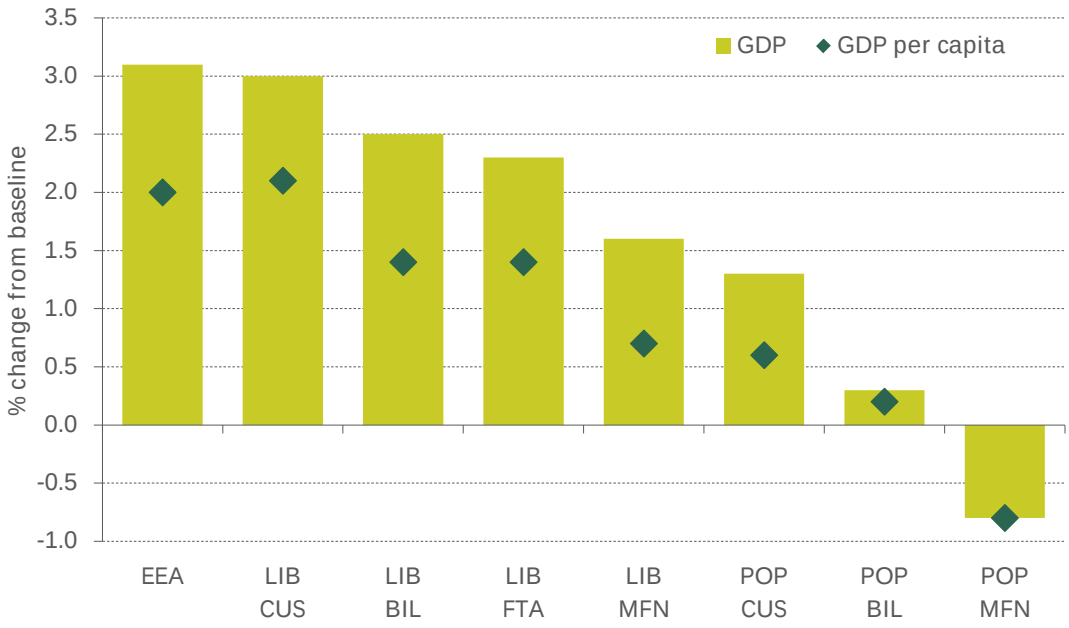
- **Content of FTA.** The prospects for an FTA would appear to vary according to the sector involved. For sectors where the UK runs a large trade surplus, such as financial services, the motivation for the EU to agree tariff- or barrier-free trade might be weak and vice versa in sectors where the UK 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.

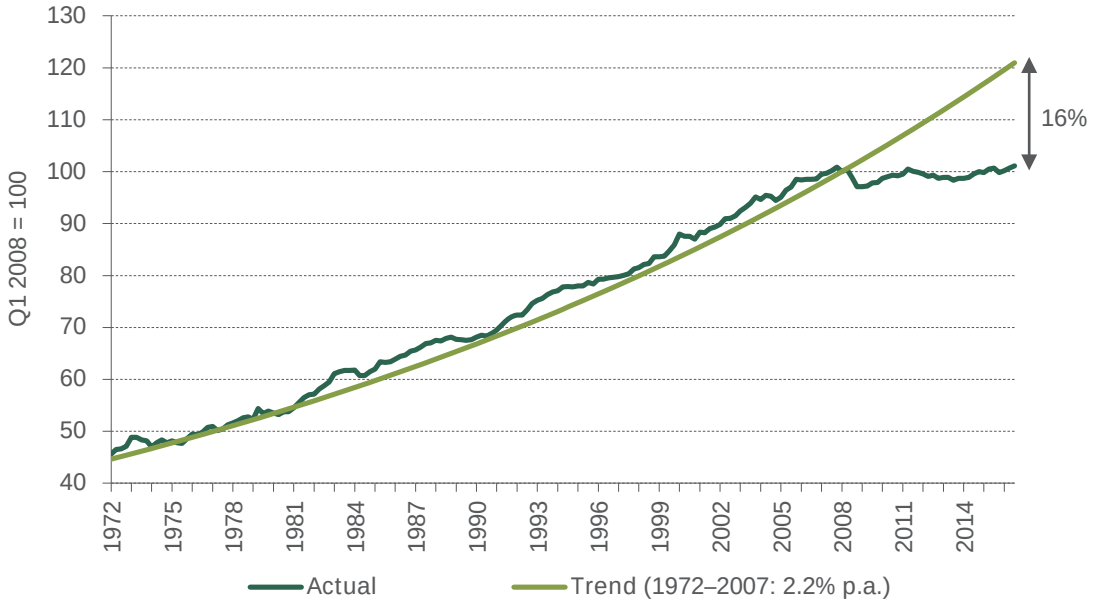
Domestic risks

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.

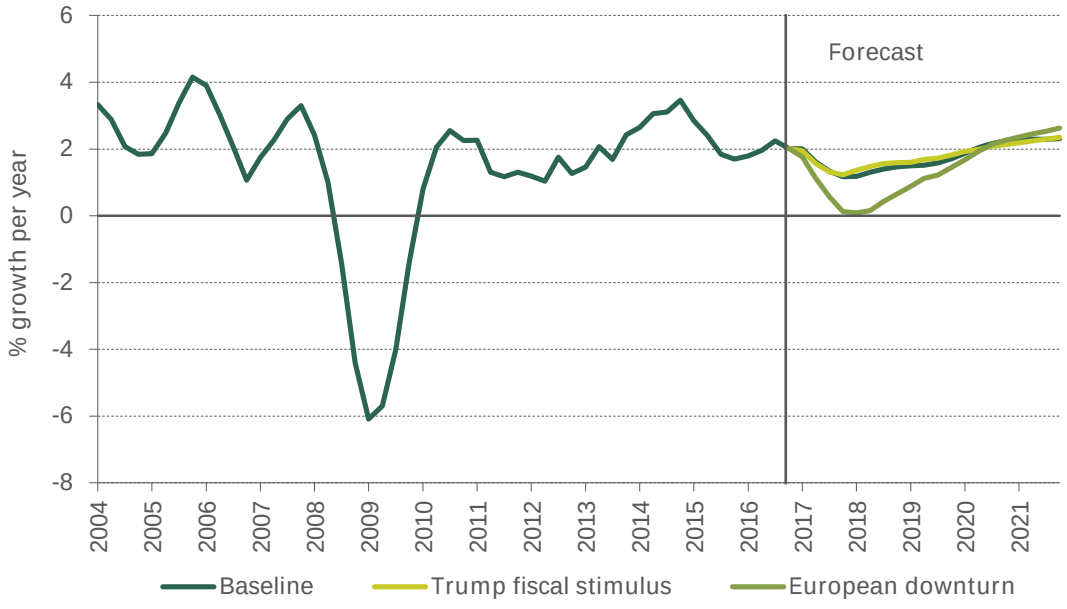
US growth surges amid Trump fiscal stimulus

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.

3. Challenges for the UK public finances

Carl Emmerson and Thomas Pope (IFS)

Key findings

The Chancellor's new fiscal targets afford him much more flexibility than his predecessor's.

Fiscal policy is not currently subject to any fiscal targets that can be met or missed in the remainder of this parliament. Mr Hammond's first target pertains to the deficit in 2020–21 – on current forecasts, he could loosen fiscal policy by more than £25 billion in that year and still be on course to meet the target.

The profile of planned deficit reduction is uneven, and even in 2021–22 – after more than a decade of tax rises and spending cuts – the deficit is forecast to be 0.7% of national income.

Real levels of day-to-day public service spending have actually fallen very little overall in the last three years. The rate of reduction is set to speed up after this year, with cuts of nearly 4% due between 2016–17 and 2019–20. In addition, tax is rising as a share of national income and by 2019–20 is due to reach its highest level since 1986–87.

The forecast reduction in the deficit is much slower than that planned before the last general election or the June referendum, largely due to a worse economic outlook.

The government is likely to enact further tax-cutting measures that are not currently reflected in the forecast, which would add to borrowing.

The government is committed to increases in the personal allowance and the higher-rate threshold by the end of this parliament. These measures, combined with the likely continuation of a cash freeze to the rates of fuel duties, would cost £4¼ billion in 2020–21.

Focusing public spending cuts on the day-to-day spending of (unprotected) government departments, while increasing capital spending, is changing the make-up of government spending.

In 2007–08, central government spending on public services comprised 17p of capital spending for every £1 of day-to-day spending. In 2012–13, this had fallen to 13p of capital spending for every £1 of day-to-day. The forecasts imply that in 2021–22 this will increase to 21p of capital spending for every £1 of day-to-day.

By the end of the parliament, public spending on health, pensions and overseas aid will be higher as a share of national income than in 2007–08, while spending on schools, defence and (in particular) public order & safety will be lower.

Uncertainty surrounding the economic forecast is the largest risk to the public finances.

The Office for Budget Responsibility (OBR) downgraded the size of the economy in 2020–21 by 1.2% between March and November, but other forecasters are more pessimistic. If growth is lower than expected, borrowing is likely to increase. The public finances will also deteriorate if the fall in sterling leads to a greater-than-expected increase in household inflation and/or interest rates turn out higher than forecast.

Past forecasting performance suggests there is a one-in-five chance that the deficit in 2021–22 will actually be around or above its current level of 3.5% of national income. More optimistically, there is almost a two-in-five chance that there will be an overall budget surplus in that year.

The main objective of fiscal policy – returning the public finances to balance as soon as possible in the next parliament – will be made harder by forecast sluggish growth and pressures on public spending.

Demographic and non-demographic pressures are projected to put upward pressure of 1.0% of national income on health, social care and pension spending by 2025. Taking into account possible negative effects from lower growth, the government may need to enact further measures worth £40 billion (in 2016–17 terms) in order to eliminate the deficit in the next parliament.

3.1 Introduction

Despite having been enshrined in legislation as recently as October 2015,[1] the government has abandoned its commitment to deliver an overall budget surplus in 2019–20. This occurred in the aftermath of June's vote to leave the European Union (EU) and was subsequently followed by a downgrade in the official economic forecasts in November. The new Chancellor, Phillip Hammond, has said that the previous commitment will be replaced with a less specific pledge to deliver a budget surplus 'as early as possible in the next Parliament'.[2]

Even achieving this is likely to be difficult. The deficit this year is forecast by the Office for Budget Responsibility (OBR) to be £68.2 billion or 3.5% of national income. This is high by UK historical standards. Over the 60 years from 1948 until the eve of the financial crisis and associated recession, average UK government borrowing was 1.9% of national income. After six years of 'austerity', the deficit this year will still be higher than it was 80% of the time in the 60 years before the financial crisis, while debt is now at its highest level as a proportion of national income since 1965–66. And, as stated in Chapter 2, there is probably more uncertainty now over future prospects than at any point in the last 60 years.

This chapter looks in detail at the latest official forecasts for the public finances and discusses some of the key risks around them. Section 3.2 sets out the broad picture on the public finances, including the forecast for the deficit and debt over the next few years and the fiscal targets that the government has set itself. Section 3.3 looks in more detail at the planned fiscal consolidation, how it is to be achieved and how it compares with previous consolidation plans for this parliament. Section 3.4 explores the main risks around the medium-term forecast, while Section 3.5 concludes, with a focus on the challenge of eliminating the deficit in the next parliament. A postscript in Section 3.6 acknowledges the latest set of Bank of England forecasts, which were published on the same day as this document went to print.

3.2 The big picture

The new fiscal targets

Before examining the public finance forecasts for the next few years, it is useful to lay out the government's new fiscal targets – the rules that, if they are to be obeyed, will constrain the operation of fiscal policy. The government's previous fiscal mandate required it to deliver a budget surplus in 2019–20, and every subsequent year as long as economic growth was sufficiently high.[3] Alongside this, a supplementary target required that public sector net debt should fall as a share of national income throughout this

[1] A motion to approve the Charter for Budget Responsibility: Autumn 2015 update was approved by parliament on 14 October 2015 (https://www.parliament.uk/business/news/2015/october/charter-for-budget-responsibility-autum-2015-update/).

[2] Chancellor Phillip Hammond's Autumn Statement 2016 speech, https://www.gov.uk/government/speeches/autumn-statement-2016-philip-hammonds-speech.

[3] For more details on this target, see R. Crawford, C. Emmerson, T. Pope and G. Tetlow, 'Fiscal targets: committing to a path of budget responsibility?', in C. Emmerson, P. Johnson and R. Joyce (eds), *IFS Green Budget: February 2016*, https://www.ifs.org.uk/publications/8129.

parliament. This was missed in 2015–16. A welfare cap required that forecast welfare spending should remain below a certain cap. This was breached in November 2015.

The new Chancellor has abandoned his predecessor's fiscal framework and introduced a new set of targets that allow him more leeway. The main stated objective for fiscal policy is now to 'return the public finances to balance as soon as possible in the next Parliament' as long as the economy is not too weak (a judgement that will be made by HM Treasury, which in effect presumably means the Chancellor himself). While stated as a target for the next parliament, it is to be presumed that this is actually a target for 2024–25, which would be the last full financial year of the next parliament were both this one and the next to run their full course.

Fiscal policy is not currently subject to any fiscal targets that can be met or missed in the remainder of this parliament. The targets do provide checks on fiscal policy before the public finances are returned to balance, however. The fiscal mandate, which applies to 2020–21, requires that the cyclically-adjusted (or structural) deficit – that is, the portion of the deficit that is not thought to be explained by temporary strength or weakness in the economy – be below 2% of national income in that year. Compared with the budget surplus required by the previous fiscal rule (in 2019–20 and beyond), this target provides more headroom in two respects. First, and most importantly, a 2% of national income target requires much less tightening than budget balance. Second, any borrowing in 2020–21 that was thought to be the result of a temporary economic weakness would not affect whether or not the government achieves its target. Headline borrowing could be above 2% of national income as a result of factors deemed to be cyclical and the target would still be met.

The government's fiscal framework also incorporates two other rules: the supplementary debt target and the welfare cap, neither of which is tested in this parliament. The supplementary debt target requires that public sector net debt (PSND) falls as a proportion of national income between 2019–20 and 2020–21 (the first out-turn data for which are due in April 2021). This target refers to the headline measure of PSND. As we discuss below, this target looks to be particularly easy to meet given temporary factors that are likely to reduce PSND in that year. Even setting these factors aside, however, it is not clear that this kind of rule – requiring that debt fall as a proportion of national income between two years in the future – is a useful check on government fiscal policy. In theory, the rule could be met more easily by adding substantially to debt in 2019–20 (and then commensurately reducing it in 2020–21), or by the sale of assets in 2020–21, which reduces this measure of debt but does not affect the underlying health of the public finances if assets are sold for what they are worth.

The welfare cap requires forecast spending on 'welfare-in-scope' – essentially total social security spending less that spent on the state pension and the most cyclical benefits – not to exceed a certain limit. But the new Chancellor has decided that compliance with this rule should only be tested every five years (as opposed to annually as it was under his predecessor George Osborne), with the first test coming after the next general election. More details on the welfare cap are provided in Box 3.1.

Box 3.1. The welfare cap

The government's third fiscal target pertains to welfare spending, and requires that spending on a specified set of welfare items does not exceed a certain cap. Not all welfare spending sits inside the cap, with notable exclusions including the state pension and cyclical benefits such as jobseeker's allowance. This new welfare cap is similar in design to the previous welfare cap, which was first introduced in the March 2014 Budget but has been in breach since the Autumn Statement of 2015. Detailed discussion of that rule can be found in last year's Green Budget.[a] The new cap does differ from the old one in certain respects, all of which move in the direction of making it easier to meet.

- First, the level of the cap is higher than the old one, with the level set at the current forecast level of spending plus 3%, whereas previously spending could only exceed the (then lower) current forecast by 2%.
- Second, under the old target, welfare spending could only use up the 2% margin due to forecasting changes. The new 3% margin can apply to forecasting or policy changes.
- Third, the OBR will be asked to take into account inflation forecast changes and adjust the level of the cap accordingly.
- Fourth, the new target is only to be assessed once every five years (rather than every year), and not until 2021–22. The previous target applied, and was assessed, in every year.

The measure of welfare spending covered by the cap is forecast at £126.0 billion in 2021–22, with a 3% margin worth £3.8 billion in that year. This forecast assumes that the net cuts to social security spending – estimated to reduce spending in 2021–22 by £13.2 billion (see Table 3.2 later) compared with what it would have been without these changes – will all be implemented in full. But aside from the second two years of the freeze to most working-age benefits, and the second two years of the 1%-a-year cuts to social rents, most of these policies will be in place from April 2017.

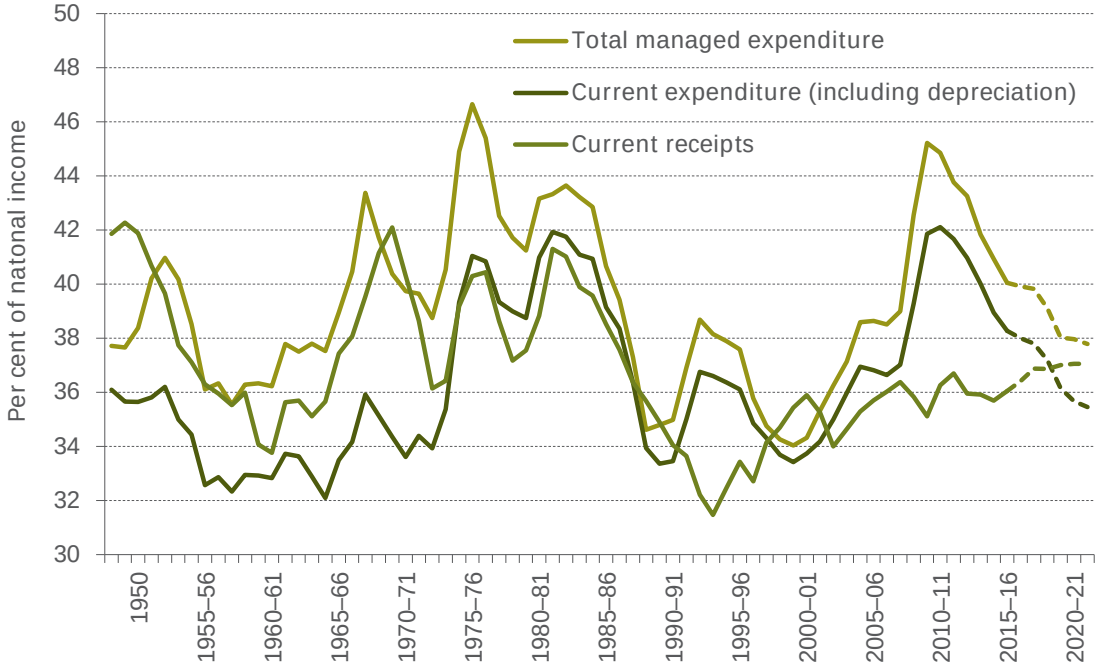
[a] See R. Crawford, C. Emmerson, T. Pope and G. Tetlow, 'Fiscal targets: committing to a path of budget responsibility?', in C. Emmerson, P. Johnson and R. Joyce (eds), *IFS Green Budget: February 2016*, https://www.ifs.org.uk/publications/8129.

Headline deficit and public sector debt

If delivering budget takeaways – in the form of tax rises or spending cuts – is easier following years of budget giveaways, then eliminating the deficit over the next few years will be particularly challenging. Figure 3.1 shows how government spending rose as a fraction of national income during the 2000s, rose sharply as national income fell in the wake of the financial crisis, and has fallen since 2009–10 though it remains higher as a share of national income than it was pre-crisis. The tax burden has changed much less (as cash receipts tend to move more in line with the size of the economy), but is due to rise over the next couple of years. As a result of large cuts to spending as a proportion of national income and, to a lesser extent, net tax rises, the budget deficit (the gap between

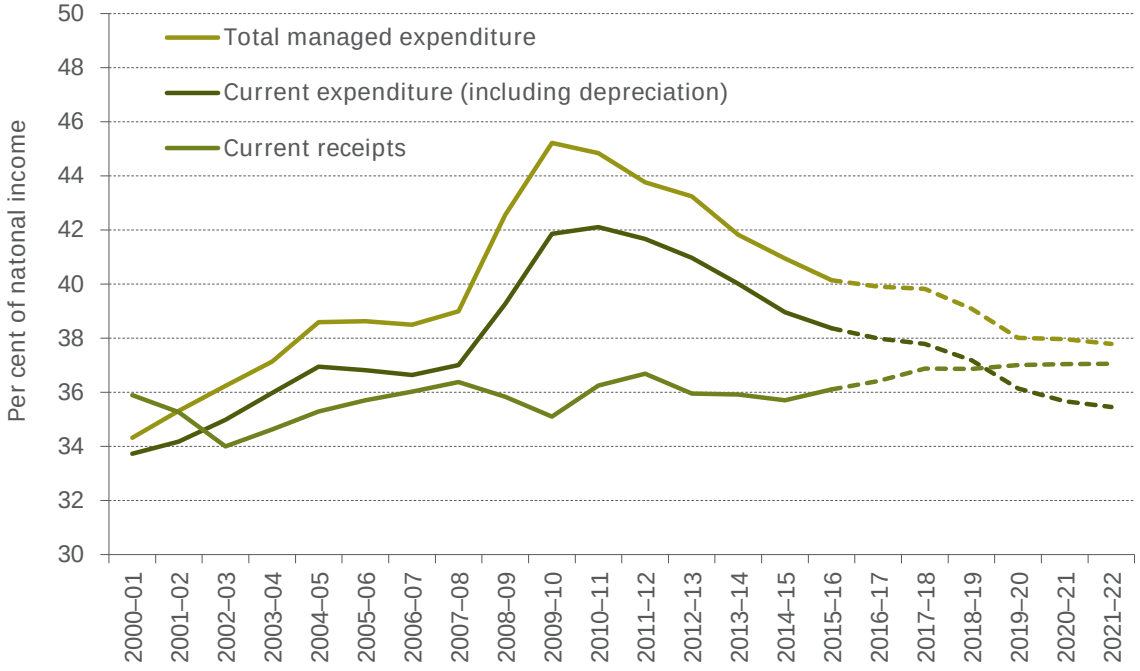
total spending and receipts) has fallen significantly from its peak of 10.1% of national income in 2009–10.

Figure 3.1. The flows: public sector receipts and spending since 1948



Source: Office for Budget Responsibility, 'Public finances databank', November 2016, http://budgetresponsibility.org.uk/data/.

Figure 3.2. The flows: public sector receipts and spending since 2000–01



Source: Office for Budget Responsibility, 'Public finances databank', November 2016, http://budgetresponsibility.org.uk/data/.

OBR forecasts – which can be seen more clearly in Figure 3.2 – imply that increases in tax revenues, rather than cuts to spending, deliver the bulk of the reduction in the deficit as a share of national income between 2015–16 and 2017–18. Then, between 2017–18 and 2019–20, deficit reduction is mainly forecast to come once again from cuts to spending as a share of national income. From 2019–20, total receipts are forecast to exceed current expenditure (which is total expenditure excluding spending on public sector net investment) which, if delivered, would mean that the UK was running its first current budget surplus since 2001–02.

Beyond 2019–20, the forecasts are based on plans for current spending staying constant in real terms, and hence falling relative to national income, while investment spending rises. Of course, everything is very uncertain that far out, but if the current policy plans do materialise and if the economy develops as forecast, we would see the deficit falling from 1.0% of national income in 2019–20 to 0.9% of national income in 2020–21, the year in which the government's fiscal mandate applies. Of this 0.9% of national income deficit, 0.8% is judged to represent permanent borrowing not related to temporary economic weakness. The target allows this cyclically-adjusted borrowing to be up to 2% of national income, leaving the government with 1.2% of national income (or £26.6 billion in 2020–21) of fiscal headroom, which is equivalent to just over 3% of receipts and spending forecast in that year. The deficit is then forecast to fall gradually again, to 0.7% of national income in 2021–22. In this year, total public spending would be at its lowest share of national income since 2003–04, while revenues would be at their highest share of national income since 1986–87.

As we noted above, the UK's deficit is currently high by historical standards. It is also high by international standards. Table 3.1 shows that, among 28 advanced economies (ranked in the table from the largest economy at the top to the smallest at the bottom), the UK had the fourth largest deficit in 2015, lower than only Japan, Spain and Portugal. Government debt (which is, loosely speaking, the deficits that have been accumulated to date) is also high by international standards. In 2015, the UK ranked sixth, behind Greece, Japan, Portugal, Italy and France. Although it should be noted that the UK's level of debt is not markedly higher than those of economies of a similar size or larger: of the six largest economies in 2015 listed in Table 3.1, only Germany had a significantly lower level of government debt than the UK.

Figure 3.3 shows how the substantial government deficits since 2008 have led to public sector debt increasing sharply. Before the financial crisis, net debt was running at just below 40% of national income but it is now forecast to peak at 90% of national income in 2017–18 before falling over the following four years.

As well as the effects of the deficit, much of the sharp increase in debt in 2016–17 and 2017–18, and subsequent decline, is explained by the monetary policies announced by the Bank of England in August 2016. In particular, this is driven by the new Term Funding Scheme (TFS), under which up to £100 billion of loans are to be made available to UK banks and building societies until the end of February 2018, with the loans to be repaid within four years of being taken out. The liabilities created to make these loans add to public sector net debt but the assets (the value of the expected loan repayments) are not netted off (because they are not deemed to be a short-term financial asset). So this

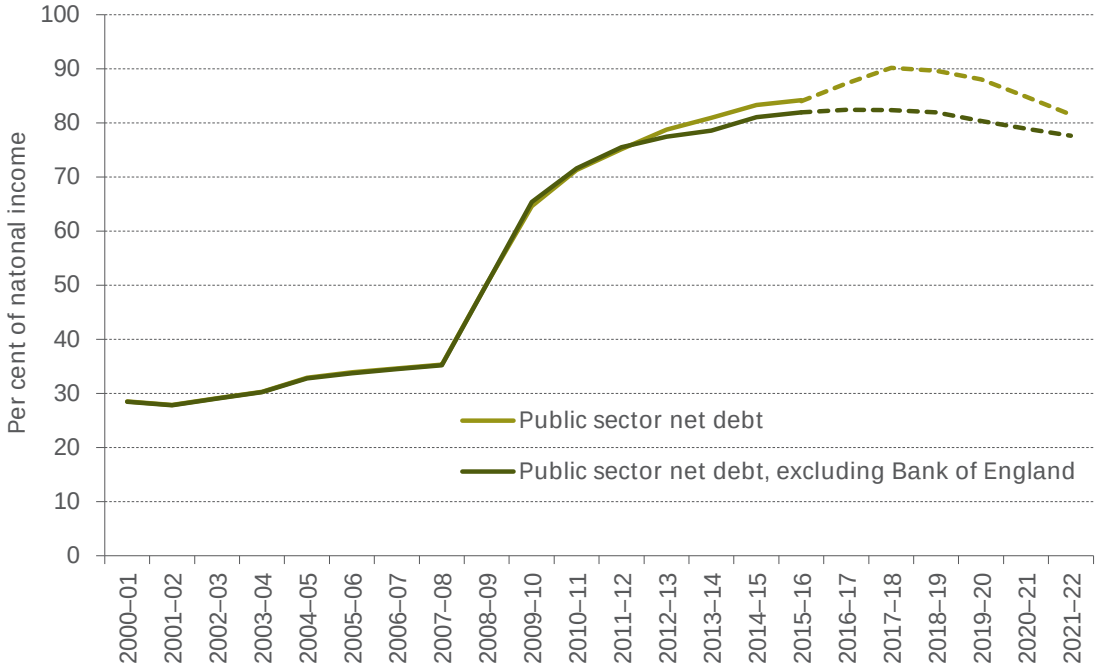
Table 3.1. 2015 deficit and debt in 28 advanced economies

Country (ranked by GDP from largest to smallest)	Deficit		Debt	
	% GDP	Rank	% GDP	Rank
United States	3.5	6	79.8	7
Japan	5.2*	1	125.3*	2
Germany	–0.7	27	47.5	14
United Kingdom	**4.2**	**4**	**80.4**	**6**
France	3.5	5	88.2	5
Italy	2.6	12	113.3	4
Canada	1.3	18	26.3	20
South Korea	–0.3	25	35.7	16
Australia	2.8	9	17.7	22
Spain	5.1	2	79.7	8
Netherlands	1.9	14	34.3	18
Switzerland	0.2*	21	24.5*	21
Taiwan	1.8	16	34.6	17
Sweden	0.0	24	–19.3	26
Belgium	2.6	11	61.0	10
Norway	–5.5*	28	–279.1*	28
Austria	1.2	19	59.1	12
Israel	3.1	7	60.9	11
Denmark	1.7	17	6.5	24
Ireland	1.9	13	67.0	9
Finland	2.7	10	–50.7	27
Portugal	4.4*	3	121.6*	3
Greece	3.1	8	176.6*	1
New Zealand	0.2	23	6.5	23
Lithuania	0.2	22	39.9	15
Latvia	1.8	15	32.0	19
Estonia	–0.4	26	–1.7	25
Iceland	0.5	20	50.6	13

Note: Countries ranked by the size of their economy in 2015 (in dollars). Estimates marked with *. Measures are general government net deficit and general government net debt. These are similar to, but differ slightly from, the public sector measures typically used in the UK and quoted elsewhere in the chapter.

Source: International Monetary Fund, 'World Economic Outlook database', October 2016, https://www.imf.org/external/pubs/ft/weo/2016/02/weodata/index.aspx. Debt for Greece taken from April 2016 database.

Figure 3.3. The stock: public sector debt



Source: Chart 4.12 on page 192 of Office for Budget Responsibility, *Economic and Fiscal Outlook – November 2016*, http://budgetresponsibility.org.uk/efo/economic-and-fiscal-outlook-november-2016/.

scheme adds to public sector net debt when the loans are taken out (in 2016–17 and 2017–18) and reduces it when they are repaid (assumed by the OBR to be four years later in 2020–21 and 2021–22). The second series on Figure 3.3, 'Public sector net debt, excluding Bank of England', strips out the effect of the TFS (and some other measures, which are smaller in terms of their impact on public sector net debt). The OBR forecast for this series peaks in 2016–17 but then falls only slightly over the rest of the forecast horizon.

This uneven debt profile underlies the dangers of focusing on a narrow measure of debt. While affecting headline PSND, arguably the TFS neither weakens nor strengthens the public finances. These issues take on a particular significance over this time horizon because of the government's supplementary debt target (see above). The target requires headline PSND to fall between 2019–20 and 2020–21. But this is exactly the point when a significant portion of the TFS loans are due to be paid back, reducing PSND dramatically. Indeed, the OBR estimates that the government would need to run a deficit of 4% of national income in order not to meet its fiscal target.

Of course, while ignoring the liabilities accrued in order to finance the TFS would lead to a lower estimate of debt, as discussed in detail in Chapter 4, the UK government has other substantial liabilities, such as unfunded public service pensions, that are not included in the National Accounts measure of PSND.

So, with a deficit in the current year that is high by historical and international standards, the OBR forecasts that over the next five years the deficit will continue to fall, albeit at a relatively slow rate beyond 2019–20. Meanwhile, public sector net debt excluding the impact of Bank of England measures, which are expected to be temporary, will remain around 80% of national income.

3.3 Planned deficit reduction through this parliament

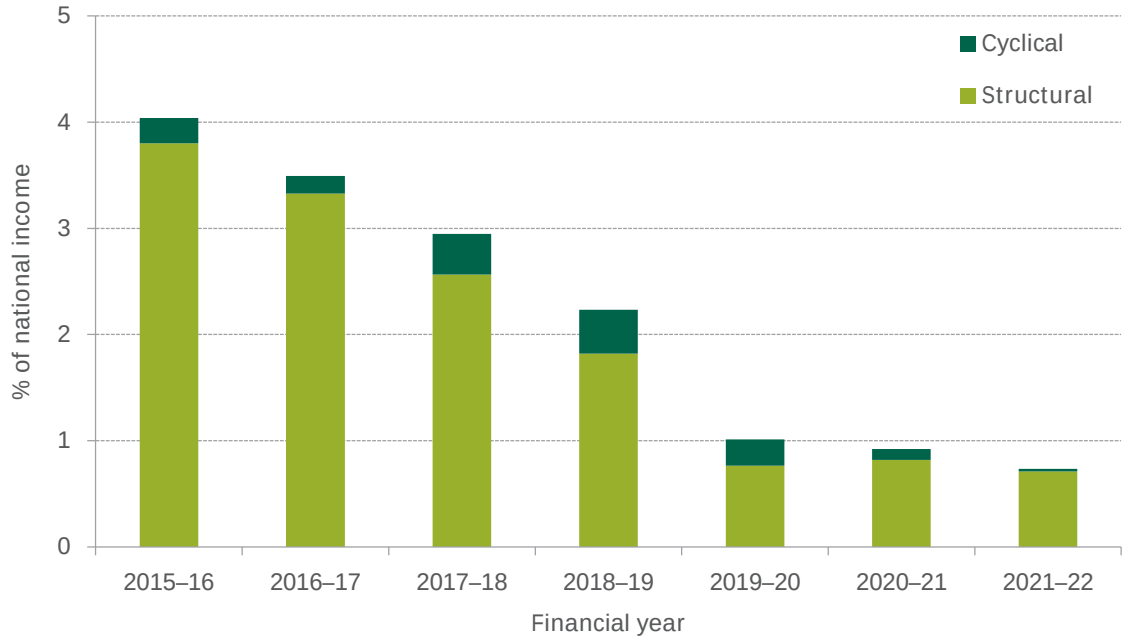
The pace of deficit reduction

As noted above, the deficit remains high by historical standards, forecast to stand at 3.5% of national income, or £68.2 billion, in 2016–17. This is £12.7 billion higher than the OBR forecast for 2016–17 borrowing in March 2016. This increase was not a result of a downgrade to the forecast for economic growth, but arose as a result of weak growth in tax receipts – in particular, income tax, National Insurance contributions (NICs) and stamp duty land tax – and faster growth in local authority spending.

Furthermore, as Figure 3.4 shows, only a small portion of this borrowing (0.2% of national income) is judged by the OBR to be cyclical – that is, a result of temporary economic weakness. So most of the deficit is not expected to disappear simply as a result of economic growth over the next few years. Instead, the majority represents a structural phenomenon that is expected to persist unless dealt with through permanent net tax increases and/or spending cuts.

As set out in Chapter 2, different economic forecasters have come to different assessments of the current size of the output gap, with Oxford Economics judging that there is currently likely to be greater spare capacity in the UK economy than the OBR thinks. Had the OBR concurred with Oxford Economics, then it would deem more of the deficit – around 1.4% of national income – to be cyclical rather than structural. However, despite this, Oxford Economics is not more optimistic than the OBR about the prospects for growth over the next five years (as it has a weaker outlook for trend growth over this period), so it is not the case that under the Oxford Economics scenario the medium-term outlook for the public finances would necessarily be more optimistic.

Figure 3.4. Public sector net borrowing, 2015–16 to 2021–22



Source: Office for Budget Responsibility, 'Public finances databank', http://budgetresponsibility.org.uk/data/.

Given current stated policies, over the next five years the deficit is forecast to decrease in every year as a proportion of national income, reaching 0.7% of national income by 2021–22. The pace of deficit reduction is relatively slow over the next two years (2017–18 and 2018–19). This is largely down to the OBR forecasting that the UK economy will grow by only 1.4% in 2017.

The OBR forecasts that this weak growth will lead to the economy operating further below its sustainable level, leading to an increase in cyclical borrowing of 0.2% of national income in 2017–18. The result is that the relatively large reduction in the structural deficit will result in the headline deficit falling by only 0.5% of national income between 2016–17 and 2017–18. The opposite effect occurs between 2018–19 and 2019–20, when an already large reduction in structural borrowing is accompanied by a fall in cyclical borrowing (of 0.2% of national income) as the economy grows more strongly; the economy is forecast by the OBR to grow by 2.1% in 2019. By the end of the forecast period, the cyclical effect on borrowing has mostly washed out, such that almost all of the borrowing forecast in 2021–22 is thought to be structural rather than cyclical.

This profile for borrowing represents much slower deficit reduction than previously planned by the current government or the coalition government. As recently as March 2016, the government was planning to eliminate the deficit and return the government budget to surplus by 2019–20. The current plans imply that we will still have a deficit of £17 billion two years later.

The profile of deficit reduction is far from even over the forecast horizon. Between 2015–16 and 2019–20, the deficit is set to fall at an average rate of 0.8% of national income per year. Between 2019–20 and 2021–22, it falls by only 0.3% of national income overall. If the rate of deficit reduction between 2019–20 and 2021–22 were to continue beyond the forecast horizon, the budget would not reach surplus until 2027–28. This would be in breach of the government's main stated objective. Furthermore, part of the deficit reduction between 2019–20 and 2021–22 results from a reduction in cyclical borrowing. Structural borrowing (which is what is affected by discretionary changes to fiscal policy) is set to fall even more slowly from 2019–20 than total borrowing.

So, on current plans, further austerity will be required in order to deliver the commitment to eliminate the deficit in the next parliament. One way to do this would be to reduce the deficit in the years beyond 2021–22. This could be achieved by further tax-raising measures being announced after the next general election (as was the case after the previous six general elections) and/or through a deeper cut to public spending as a share of national income than is implied by the latest official forecasts. If the pace of deficit reduction beyond 2021–22 matched the 0.5% of national income per year rate of reduction between 2015–16 and 2021–22, a surplus would be achieved by 2023–24. Of course, the amount of consolidation required during the 2020s to meet the target will depend on how the economy and other factors develop between now and then. Section 3.4 explores the main risks to the forecast.

Composition of the consolidation

Table 3.2 sets out how reductions in borrowing between 2015–16 and 2021–22 are to be achieved. The deficit is to be reduced through a combination of net discretionary tax rises, discretionary cuts to spending on social security benefits and a squeeze on departmental spending over the next five years.

Table 3.2. Consolidation plan, November 2016: change in deficit since 2015–16 (£bn)

	2016–17	2017–18	2018–19	2019–20	2020–21	2021–22
Total new measures	**–14.8**	**–21.5**	**–37.1**	**–60.1**	**–58.1**	**–65.7**
Of which:						
Net discretionary tax rises	–9.6	–9.6	–12.0	–16.7	–14.4	–14.4
Net discretionary cuts to welfare spending	–1.5	–4.2	–7.5	–12.2	–12.8	–13.2
Impact from a real freeze to DEL (relative to constant share of GDP)	–8.0	–12.2	–19.8	–28.7	–37.6	–47.1
Additional impact from a real cut to DEL	4.3	4.5	2.3	–2.6	6.8	9.0
DEL total (relative to constant share of GDP)	*-3.7*	*-7.7*	*-17.6*	*-31.2*	*-30.9*	*-38.1*
Underlying changes	7.0	4.5	7.6	6.1	2.8	6.9
Change in deficit since 2015–16	–7.8	–17.1	–29.5	–54.1	–55.3	–58.8
Deficit (£76.0 billion in 2015–16)	**68.2**	**59.0**	**46.5**	**21.9**	**20.7**	**17.2**

Note: DEL refers to departmental expenditure limits, and refers to OBR definitions (PSCE in RDEL and PSGI in CDEL) rather than Treasury ones. Numbers may not sum due to rounding.

Source: Table 2.17 of Office for Budget Responsibility, *Economic and Fiscal Outlook Supplementary Fiscal Tables: Expenditure – November 2016*, http://budgetresponsibility.org.uk/efo/economic-and-fiscal-outlook-november-2016/; Office for Budget Responsibility, *Economic and Fiscal Outlook*, June 2010 to November 2016, http://budgetresponsibility.org.uk/efo/economic-and-fiscal-outlook-november-2016/; authors' calculations.

Net discretionary tax rises

A measure of the size of the net tax rises can be taken from looking at the 'budget scorecard' in successive fiscal events. This gives an estimate of the revenue effects of each measure, in each year, relative to a counterfactual of not doing that measure. On this basis, tax changes coming into effect since 2015–16 involve a net tax rise, though this comprises a large gross tax cut offset by an even larger gross tax rise. These net tax rises are frontloaded in the current parliament and, in fact, are the biggest contributor to a falling deficit in 2016–17.

- Of the £9.6 billion net tax rise in 2016–17, £5.4 billion is from measures announced before the 2015 general election (with the abolition of contracting out into defined benefit pension schemes announced in the March 2013 Budget raising £5.5 billion in 2016–17), with a further £4.2 billion announced in the four fiscal statements since the general election.

- This £4.2 billion of net tax rises in 2016–17 from measures announced since the general election arises from tax cuts that amount to a total giveaway of £3.7 billion and tax rises that amount to a total takeaway of £7.9 billion. The tax cuts include above-inflation increases in the income tax personal allowance and higher-rate threshold (costing £1.2 billion in 2016–17) and a freeze to rates of fuel duties (£0.4 billion). The larger tax rises include the introduction of a new dividend tax regime (raising £2.8 billion in 2016–17), an increase in the rate of insurance premium

tax (IPT, £1.6 billion) and a higher rate of stamp duty land tax for those purchasing second and subsequent residential properties (£0.7 billion).

- Beyond 2016–17, further tax cuts arise, most prominently, from a further increase in the personal allowance and higher-rate threshold (in April 2017), a further freeze to rates of fuel duties (in April 2017), a new main home allowance in inheritance tax (in April 2017) and cuts to the rate of corporation tax (in April 2017 and April 2020), while the larger tax increases include the introduction of the apprenticeship levy (in April 2017; see Chapter 8), increases in vehicle excise duty on the purchase of new cars (in April 2017), yet another increase in the rate of IPT (in June 2017) and a restriction in pension contribution limits for those on very high incomes (which came into effect from April 2016, but raises significantly more from 2018–19 onwards).

- Overall, a net tax rise of £14.4 billion (0.6% of national income) is set to take place between 2015–16 and 2021–22. This comprises a gross tax rise of £34.7 billion and a gross tax cut of £20.3 billion. Between 2015–16 and 2019–20, the net tax rise is actually slightly larger, at £16.7 billion, while between 2019–20 and 2021–22 there is a small net tax cut planned overall (in particular from a cut to the rate of corporation tax).

Net discretionary cuts to welfare spending

As with tax changes, a measure of the size of welfare cuts can be taken from successive 'budget scorecards'. Again this provides an estimate of the impact on spending of each measure, in each year, relative to a counterfactual of not doing that measure. Under that counterfactual, other factors could be pushing welfare spending up (or, in principle, down). For example, growth in the private rented sector has been an underlying pressure pushing up housing benefit spending. So while a welfare cut means that spending is lower than it would otherwise have been in that year, overall welfare spending could still be rising over time.

Net cuts to welfare taking effect after 2015–16 reduce spending and therefore borrowing in 2019–20 by £12.2 billion (0.6% of national income), as shown in Table 3.2. Almost all of these cuts represent action taken by the Conservative government since May 2015.[4] The impact of the welfare cuts is backloaded in the current parliament.

- Large contributors to this cut are a four-year freeze to the rates of most working-age benefits from April 2016 to April 2019 inclusive (cutting spending by £4.9 billion in 2019–20), reductions in the generosity of universal credit (in particular for in-work claimants through large cuts to 'work allowances', £2.9 billion in 2019–20) and cutting means-tested support for families with more than two children (for new births from April 2017 only, £1.1 billion in 2019–20).

- The four-year freeze to rates cuts spending by a larger amount over time. This is due not only to more years of the freeze applying, but also to rising inflation meaning that the nominal freeze in later years corresponds to a larger real cut in those years. In addition, while the other major changes will have been implemented by April 2017, they typically only apply to new claimants and therefore will represent a bigger

[4] For the purposes of this analysis, we are not counting the move from RPI to CPI for uprating the rates of most benefits, which significantly reduced future spending relative to what it would have been and which was announced in the June 2010 Budget as a measure affecting spending in this parliament.

spending cut in future years. As a result, the effect of the welfare cuts on spending increases particularly sharply between 2017–18 and 2019–20.

Central government spending on public services

For departmental expenditure limits (DELs) – that is, central government spending on the delivery and administration of public services – we compare spending plans with what spending would have been had it been kept constant as a share of national income. In normal times, and over the longer term, this is a sensible neutral assumption as it keeps the size of the state constant over time.

The change in spending relative to keeping spending constant as a share of national income is decomposed into two components in Table 3.2: first, the change in DELs as a share of national income that would arise from freezing spending in real terms; and second, the increase or cut to DEL that is actually planned in real terms. As long as the economy is growing in real terms (which it is forecast to do in each of the next five years), then the former will always represent a cut in spending relative to national income (and typically a significant one). The latter figure shows whether or not DELs are rising relative to economy-wide inflation.

We have already shown that significant cuts to welfare spending, and even larger net tax rises, are planned for the period from 2015–16 to 2021–22. But when compared with a counterfactual of keeping DELs constant as a share of national income, we find that by far the largest part of the consolidation comes through a squeeze on the spending of government departments.

- Over the period 2015–16 to 2021–22, overall departmental spending is set to increase by £9.0 billion in real terms, which comprises a real cut in day-to-day spending (of £11.1 billion in 2021–22 prices) and a real increase in investment spending (of £20.1 billion in 2021–22 prices). Figures 3.9 and 3.10, later in this chapter, set out more details on the size and profile of DEL, separately for day-to-day spending and capital spending, over the next five years.

- However, the economy is forecast to grow much more quickly than prices over the forecast period. Compared with increasing spending in line with national income since 2015–16, the current plans imply a cut of £38.1 billion in 2021–22. This comprises a cut to day-to-day spending (of £52.4 billion) offset by an increase in investment spending (of £14.3 billion). Overall, departmental spending is set to fall from 18.7% of national income in 2015–16 to 17.1% in 2021–22.

- The cuts to DEL in the current parliament (both in real terms and when measured relative to holding them constant as a share of national income) are backloaded with, for example, total DEL rising in real terms between 2015–16 and 2017–18 despite being cut over the period from 2015–16 to 2019–20.

In total, the effect of fiscal consolidation from 2015–16 to 2021–22 reduces the deficit by £65.7 billion (2.8% of national income). The overall reduction in the deficit is actually slightly smaller than the total effect of measures, because underlying changes to receipts and spending (not attributable to new policy measures) are estimated to push up the cash level of the deficit over the forecast period. The deficit is therefore set to be £17.2 billion in

2021–22, down from £76.0 billion in 2015–16, through a combination of net tax rises, welfare cuts and, most prominently, a large squeeze on departmental spending.

Consolidation plans for this parliament compared

While this consolidation, totalling £65.7 billion of which £60.1 billion is to come by 2019–20, is substantial, the result is a much slower pace of deficit reduction than previously planned. The government previously intended to be in surplus at least two years before 2021–22, whereas the current plans imply we will still have a deficit in that year. We therefore compare plans for deficit reduction as they now stand (as was presented in Table 3.2) with the plan as of March 2016 (the last before the June 2016 EU referendum) and as of March 2015 (the last before the May 2015 general election). We focus on the period from 2015–16 until the end of this parliament in 2019–20. While the current forecast extends beyond that year, we have seen above that the vast majority of planned fiscal consolidation from 2015–16 to 2021–22 is set to be in place by 2019–20. This also enables comparison with previous plans, which were made over different forecast horizons.

The successive consolidation plans are outlined in Table 3.3 and displayed graphically in Figure 3.5. The 2015–16 deficit is now thought to have been slightly higher than the estimate in March 2016 or the forecast in March 2015. However, the main differences between the plans occur between 2015–16 and 2019–20. The 2019–20 deficit is now forecast to be £21.9 billion – a position around £30 billion weaker than the planned surpluses as of March 2015 and March 2016.

Table 3.3. Consolidation plans for this parliament as of November 2016, March 2016 and March 2015 (£bn)

	Nov. 2016 (latest)	March 2016 (pre referendum)	March 2015 (pre general election)
Deficit in 2015–16	**76.0**	**72.2**	**75.3**
Total measures	**–60.1**	**–75.6**	**–69.9**
Of which:			
Net discretionary tax rises	–16.7	–21.9	–4.5
Net discretionary cuts to welfare spending	–12.2	–13.4	–0.7
Impact from a real freeze to DEL	–28.7	–32.3	–37.3
Additional impact from a real cut to DEL	–2.6	–8.0	–27.3
DEL total (relative to constant share of GDP)	*-31.2*	*-40.3*	*-64.6*
Underlying changes	6.1	–7.0	–12.4
Deficit in 2019–20	**21.9**	**–10.4**	**–7.0**

Note and source: See Table 3.2.

The higher planned deficit now compared with previous plans is explained, at least in part, by a reduction in the size of measured fiscal consolidation. The planned composition of the consolidation has also changed.

- Before the 2015 general election, the forecast implied that almost all of the fiscal tightening planned would occur through departmental expenditure restraint, with only £5.2 billion of additional net tax rises or welfare cuts.[5] The plans of that time also implied that we would reach a surplus in 2018–19, increasing spending in line with national income thereafter (giving a so-called 'roller-coaster profile').[6]

- After the general election, a series of new tax rises and welfare cuts were announced, while the squeeze on departmental spending was eased. The date by which a surplus was to be achieved was pushed back – from 2018–19 to 2019–20 – with the overall scale of the planned consolidation increasing slightly.

- Between March and November of last year, the change in consolidation plans is more modest. The measured cut to departmental spending is now lower. Partly this reflects a larger real increase in capital spending and a smaller real cut to departmental spending (of £3 billion of 'efficiency savings' planned in 2019–20, £1 billion is now to be spent rather than banked). The cut to public spending is also now smaller as a proportion of national income. The OBR now expects the economy to grow more slowly than it expected in March. This means that a given set of cash spending plans will represent a larger share of future national income and, therefore, a smaller cut to spending as a share of national income.[7]

However, differences in the size of the planned fiscal consolidation alone are not sufficient to explain differences in the 2019–20 deficit across these plans. Even if there had been no change to the fiscal consolidation plan, the deficit would have been higher under the November 2016 forecast than under either of the March forecasts (see the '2019–20 no measures' series in Figure 3.5). According to the November 2016 forecast, the deficit would be on course to increase between 2015–16 and 2019–20 (by £6 billion) had no policy measures been enacted, whereas under the March 2015 forecast it would have been on course to fall (by £12 billion). This £18 billion deterioration in the underlying position largely reflects a weaker economic outlook and highlights that economic performance is crucial in determining the path of the public finances.

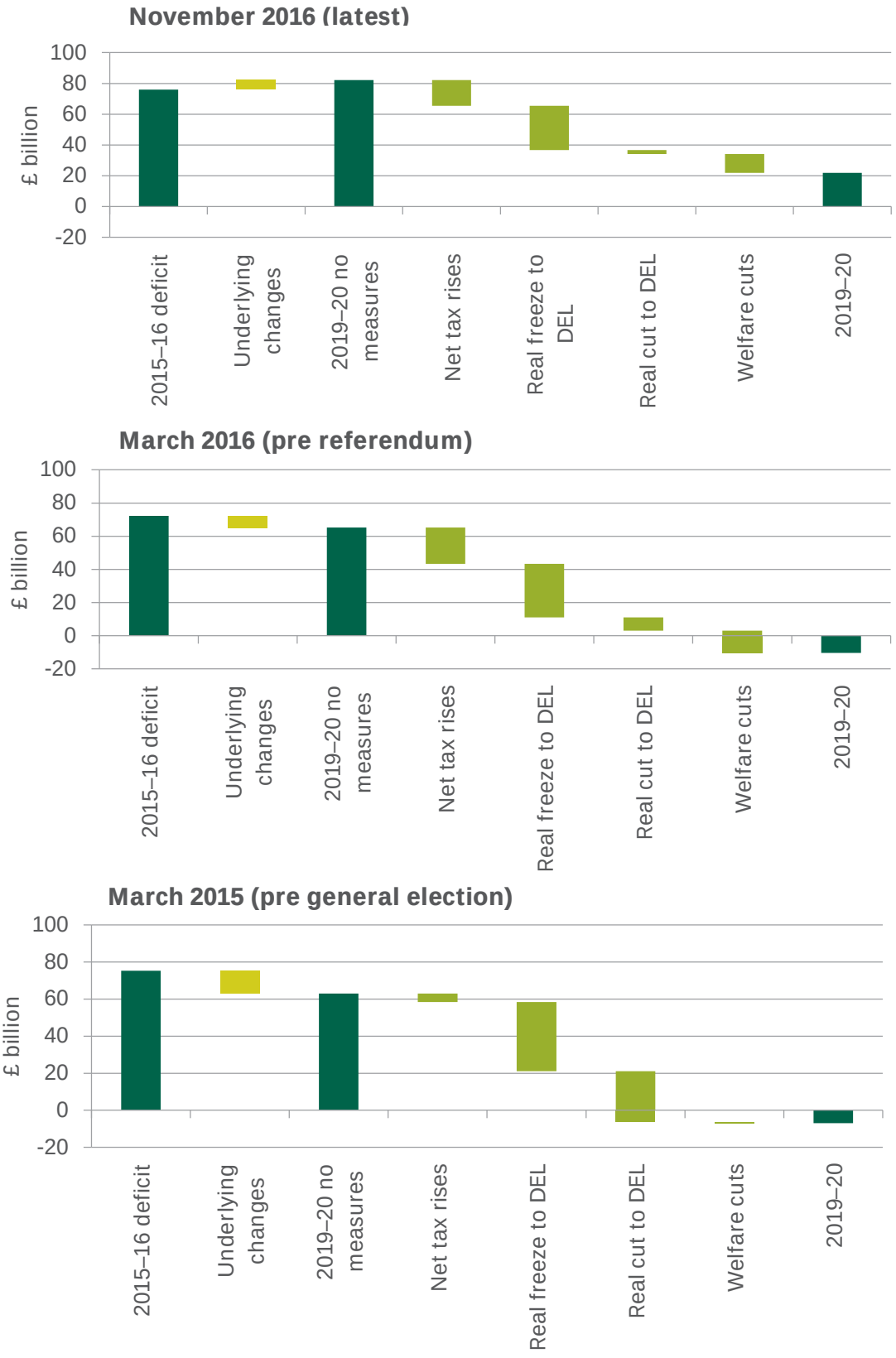
So the deficit is now set to be larger, and to persist for longer, than the government plans implied before the May 2015 general election or before the June 2016 EU referendum. Of the £28.9 billion deterioration in the deficit in 2019–20 (from the surplus of £7.0 billion forecast in the March 2015 Budget to the deficit of £21.9 billion that is now being forecast),

[5] Here we are using official forecasts. While at the time the Conservative Party pledged to make £12 billion of additional cuts to welfare by 2017–18 they were not adopted as part of the official coalition government's plans.

[6] See Office for Budget Responsibility, *Economic and Fiscal Outlook*, March 2015 (http://budgetresponsibility.org.uk/efo/economic-fiscal-outlook-march-2015/).

[7] Since March, there have also been changes to planned tax rises and welfare cuts. A smaller measured tax rise arises due to changes to the way corporation tax receipts are recorded, which means that a policy change that pushed the timing of receipts into 2019–20 from earlier years no longer affects the headline numbers. A smaller measured total welfare cut is due to the reversal of a policy that would have reduced the generosity of Personal Independence Payments (a disability benefit). The government announced the reversal of this policy two days after the March 2016 budget.

Figure 3.5 Consolidation plans pre-election, pre-referendum and now



Note and source: See Table 3.2.

£10.0 billion – or one-third – is down to a reduction in the estimated impact of measures to be implemented over this period. The remaining two-thirds is a deterioration in the underlying fiscal forecast, driven by a worse economic outlook. As a result, in 2021–22, more than a decade after the fiscal consolidation began, we are still forecast to have a deficit of £17.2 billion, or 0.7% of national income.

3.4 Medium-term risks

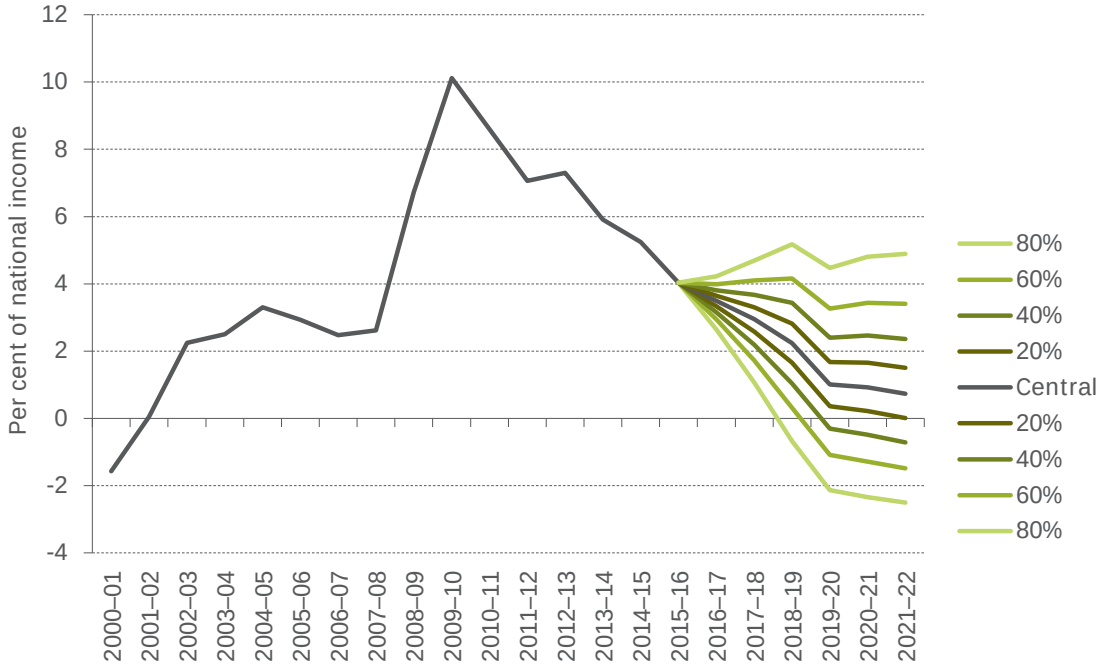
The previous section set out the reduction in the deficit over the next few years forecast by the OBR. This section looks at some of the key risks around this forecast. Before turning to examine the specific risks that we have identified, one potential guide to the uncertainty around the OBR's central forecast for borrowing is to look at the extent to which out-turns for borrowing have deviated from previous official forecasts. Data made available by the OBR make it relatively easy to do this for forecasts going back as far as Roy Jenkins's last Budget (in March 1970). To the extent to which the amount of uncertainty that existed when these previous forecasts were made is comparable to the amount of uncertainty that we now face, this might provide a good guide to the degree to which we might expect eventual borrowing to deviate from the latest forecasts.

There are (at least) two reasons why this analysis might understate the amount of uncertainty in the latest forecasts. First, as stated in Chapter 2, there is probably more uncertainty now over future prospects than at any point in the last 60 years. Second, eventual out-turns may have differed from previous forecasts as a result of subsequent policy action: to the extent to which previous Chancellors have implemented new policies in an attempt to bring borrowing back towards their previous forecasts (e.g.by spending surprise surpluses), the headline out-turns will understate the true underlying uncertainty. On the other hand, we might hope that we have, over time, become better at forecasting – for example, whereas previous forecasting errors may have been due to politically-motivated wishful thinking by Chancellors, this will not be the case with the OBR.

The OBR's central forecast, based on current policy, is for a 0.7% of national income deficit in 2021–22 (as set out in the previous section). However, as the fan chart shown in Figure 3.6 indicates, based on previous forecast errors there is a 20% chance that the deficit will in fact be greater than 3.4% of national income (i.e. around or above the level forecast for 2016–17) but – more optimistically – almost a 40% chance that there will be an overall budget surplus. In fact, on this measure, there is still a one-in-three chance that the government will meet its recently-abandoned target of delivering a headline budget surplus in 2019–20.

Broadly speaking, there are two types of reasons why borrowing might turn out differently from forecast. First, the OBR's forecasts are based on current policy, so changes to policy that affected revenues or spending could lead to borrowing turning out differently from forecast. Second, economic growth – or the impact that growth has on revenues and spending – could turn out differently from forecast. Of course, in practice, both will occur. Future Budgets will contain policy measures that will affect the public finances, while the level and composition of economic growth – and its impact on revenues and spending – will differ in many ways from the OBR's (and for that matter anyone else's) central forecast.

Figure 3.6. Probabilities of public sector net borrowing outcomes



Source: Chart 5.5 on page 211 of Office for Budget Responsibility, *Economic and Fiscal Outlook – November 2016*, http://budgetresponsibility.org.uk/efo/economic-and-fiscal-outlook-november-2016/.

So in this section we turn first to look at likely policy risks on revenues and then at likely policy risks on spending. We then look at the degree to which the public finances could be affected by outcomes for the economy, or for the relationship between the economy and the public finances, that are different from what the OBR has forecast.

Policy risks: taxation

The OBR forecasts are intended to be a central forecast on the basis of current stated policy. To achieve this, they include the impact of tax and benefit changes that have been announced for implementation in future years and included in 'budget scorecards'. As a result, the OBR does not include any judgement over the impact on the public finances of tax and benefit changes that have not yet been scored. One has to draw the line somewhere and this may be a sensible delineation – but it does mean that, for example, the impact of measures committed to in election manifestos, party conference speeches, government Green Papers and even within Budget documents (unless on the scorecard) are not automatically included. Currently, there are at least two areas where there are good reasons to think that tax policy as currently scored in Budget documents is particularly unlikely to persist.

The first relates to income tax thresholds. In his Autumn Statement speech the Chancellor reaffirmed a pledge in the Conservative party's general election manifesto: 'And I can confirm today that, despite the challenging fiscal forecasts, we will deliver on our commitment to raising the allowance to £12,500, and the higher rate threshold to £50,000, by the end of this Parliament'.[8] This is also confirmed in the actual Autumn Statement document: 'The government will meet its commitment to raise the income tax personal allowance to £12,500 and the higher rate threshold to £50,000, by the end of this

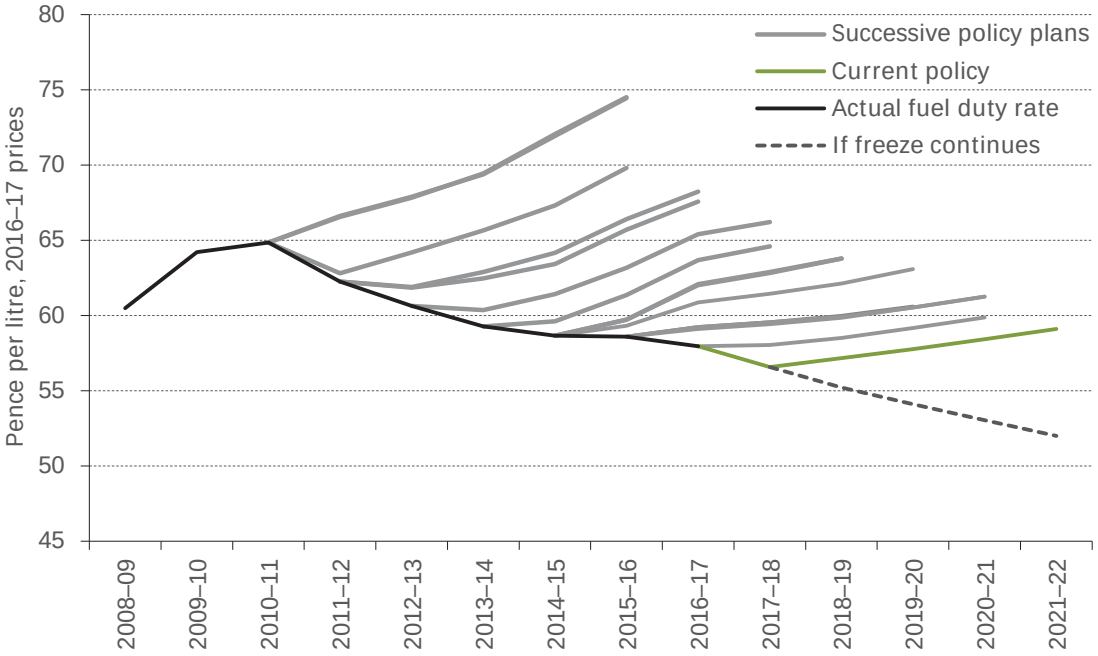
[8] See https://www.gov.uk/government/speeches/autumn-statement-2016-philip-hammonds-speech.

Parliament'.[9] But the government has not yet decided to score the policy. And, as a result, the OBR has not yet included it in its forecasts.

By default, both of these thresholds increase in cash terms over time anyway, in line with inflation. Hence, because the targets have been set in cash terms, the actual generosity of the tax cut depends on both how quickly it is implemented and what the rate of inflation is. The later it is done, and the higher inflation is, the smaller the giveaway this policy would represent relative to what would have happened anyway by default. Introducing the policy in April 2020 – i.e. one month before the end of the current parliament if the parliament runs for a full five years – would result in the smallest tax cut. We estimate that this would, under the latest OBR forecasts for the Consumer Prices Index (CPI), cost £1¾ billion (in 2016–17 terms).[10]

Our costing of the policy has changed considerably over recent months as the outlook for inflation has changed. Prior to the EU referendum, when the outlook was for less inflation over the next few years than is now expected, we estimated that it would cost £2.8 billion. Prior to the Autumn Statement, we used forecasts from the Bank of England, which imply higher inflation over the next few years than the OBR forecast, and estimated that it would cost just £1.0 billion.[11]

Figure 3.7. Successive plans for fuel duty rates



Source: Slide 8 of S. Adam, 'Tax and benefit reforms', IFS Autumn Statement 2016 analysis, https://www.ifs.org.uk/uploads/publications/budgets/as2016/as2016_sa.pdf.

[9] Paragraph 4.5 on page 35 of HM Treasury, *Autumn Statement: November 2016*, https://www.gov.uk/government/publications/autumn-statement-2016-documents.

[10] This costing was produced using the IFS tax and benefit model, TAXBEN, run on data from the Family Resources Survey. The authors would like to thank Tom Waters for his help in producing this estimate.

[11] See page 36 of C. Emmerson and T. Pope (2016), 'Winter is coming: the outlook for the public finances in the 2016 Autumn Statement', IFS Briefing Note BN188, https://www.ifs.org.uk/uploads/publications/bns/BN188.pdf.

The second likely tax change relates to the indexation of rates of fuel duties. Formal policy is for these to increase in line with inflation (as measured by the discredited Retail Prices Index) each April. But recent practice has been for indexation to be cancelled: as a result of the Chancellor's announcement in the Autumn Statement, 2017–18 is set to be the seventh year in a row without the rates being uprated in line with inflation. These freezes represent a significant tax cut: rates of fuel duties in 2017–18 will be 13% lower in real terms (when deflated by the not discredited Consumer Prices Index) than they were in 2010, with this real-terms cut reducing annual government revenues by an estimated £3½ billion (or 16% and £4½ billion lower relative to default RPI indexation).[12] A comparison of the successive plans for fuel duty rates, with the eventual out-turn, is shown in Figure 3.7.

In its November 2016 *Economic and Fiscal Outlook*, the OBR highlights these successive policy changes: 'The possibility that the actual path of fuel duty rates policy will differ from the Government's current stated policy is a risk that we consider worth noting'. Arguably, rather than increasing in line with the RPI in April 2018, April 2019 and April 2020, it is more likely that rates of fuel duties continue to be frozen throughout the rest of this parliament. This would represent a tax cut reducing revenues by an estimated £2½ billion in 2020–21 (in 2016–17 terms).[13] The upwards revision to forecasts for inflation over the next two years seen since the EU referendum imply that continuing to freeze fuel duties would now be more expensive than previously thought. As fuel duties are a major source of revenue for the government, forecast to bring in £27.9 billion in 2016–17, the unwillingness of consecutive Chancellors Mr Osborne and Mr Hammond to stick to plans to increase the rates in line with inflation – including in the March 2016 Budget after the oil price had fallen considerably and still in just the first year of a new parliament – presents an increasing challenge for the public finances.

In total, increasing the income tax personal allowance to £12,500 and the higher-rate threshold to £50,000 in April 2020, and also freezing fuel duties in April 2018, April 2019 and April 2020, would reduce revenues in 2020–21 by an estimated £4¼ billion (in 2016–17 terms), or 0.2% of national income. The OBR's longer-run projections (beyond 2021–22) assume that parameters in the tax system will be uprated in line with national income (rather than inflation).[14] If the government were to increase income tax thresholds in line with inflation instead, it could raise the effective tax burden through a fiscal drag effect (whereby incomes grow more quickly than thresholds). On the other hand, there must also be a risk that fuel duties continue to be frozen in cash terms, not even increasing in line with inflation, let alone national income. If this were the case, fuel duties would raise an ever smaller share of national income going forwards.

Impact of previous tax reforms on revenues

One way to consider how new measures might affect tax revenues in the future is to look at the direction of reforms in the past. This can be done by collating the information on successive budget scorecards – an exercise that the OBR has done for all Budgets, Autumn

[12] Authors' calculation using https://www.gov.uk/government/statistics/direct-effects-of-illustrative-tax-changes.

[13] Authors' calculations based on the latest OBR forecasts for the RPI and the HMRC ready reckoner (https://www.gov.uk/government/statistics/direct-effects-of-illustrative-tax-changes).

[14] See Office for Budget Responsibility, *Fiscal Sustainability Report*, January 2017, http://budgetresponsibility.org.uk/fsr/fiscal-sustainability-report-january-2017/.

Statements and Pre-Budget Reports back to the Budget of 1970.[15] This allows us to look at the estimated impact on revenues in 2016–17 of each budget measure. Moreover, the OBR spreadsheet provides a breakdown into each broad tax and, through applying some judgements to the data, can be further split into whether there was a change to a standard rate or threshold or whether the change did something else to the tax base.

The right-hand part of Table 3.4 shows that the Budgets and Autumn Statements of George Osborne and Phillip Hammond since June 2010 contain tax-cutting measures that are estimated to have reduced revenues by £54 billion in 2016–17. This has been more than offset by the tax-raising measures that are estimated to have boosted revenues in the same year by £70 billion. Changes to the main rates and thresholds of income tax, NICs and corporation tax make up half of the giveaway but less than one-tenth of the takeaway. In contrast, the increase in the main rate of VAT from 17½% to 20% makes up one-fifth of the takeaway (and there have been no cuts to the rates of VAT over this period). Other changes to the main taxes represent a greater share of the takeaways than of the giveaways over this period (these will include changes such as the large restrictions to pension tax relief affecting mainly those on very high incomes that have been seen

Table 3.4. Estimated impact of budget measures since 1997 on revenues in 2016–17, by type of tax change

	Brown/Darling				Osborne/Hammond			
	Tax takeaways		Tax giveaways		Tax takeaways		Tax giveaways	
	£bn	% of total	£bn	% of total	£bn	% of total	£bn	% of total
Total	138	100	82	100	70	100	54	100
Of which:								
Income tax rates & thresholds	17	12	26	32	3	4	16	29
NICs rates & thresholds	29	21	13	16	1	2	5	9
VAT rates	0	0	0	0	14	20	0	0
Corporation tax rates	1	1	10	12	0	0	7	12
Other IT/NICs/VAT/CT	53	39	19	24	33	47	13	24
Other taxes	37	27	14	17	19	27	14	27

Note: Table takes all measures from budget scorecards since 1997 and looks at their estimated impact on revenues. Those measures estimated to have no impact are ignored. Measures allocated to categories based on the OBR's tax definition and a judgement over whether the measure is a change to a standard rate or threshold or to something else.

Source: Authors' calculations using Office for Budget Responsibility, 'Policy measures database', 1 December 2016, http://budgetresponsibility.org.uk/data/.

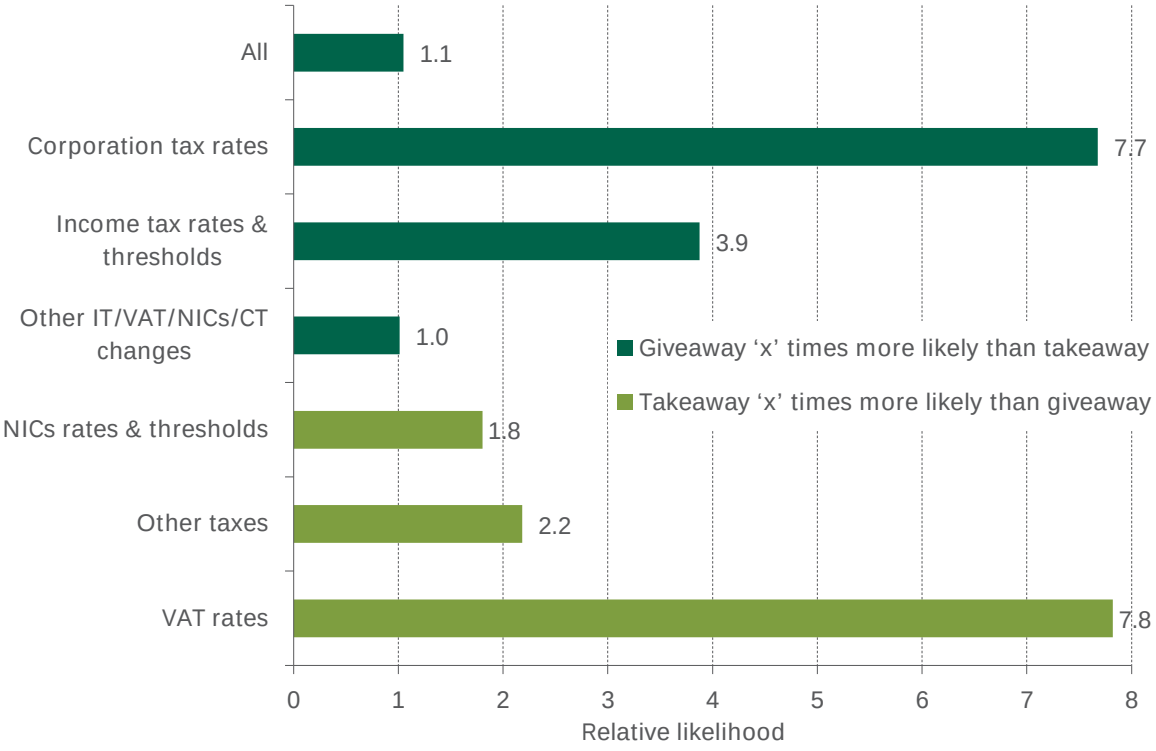
[15] Office for Budget Responsibility, 'Policy measures database', 1 December 2016, http://budgetresponsibility.org.uk/data/.

since 2010). Changes to other taxes make up just over a quarter of both the giveaways and the takeaways.

The left-hand part of Table 3.4 does the equivalent exercise for the Pre-Budget Reports and Budgets of Gordon Brown and Alistair Darling. Again the tax takeaways are larger in aggregate than the tax giveaways: the takeaways are estimated to boost revenues in 2016–17 by £138 billion, while the giveaways are estimated to total £82 billion. As was the case with the period since June 2010, changes to the main rate of corporation tax, and to the main rates and allowances of income tax, made up a larger share of the giveaways than of the takeaways, while other changes to the main taxes also made up a larger share of the takeaways than of the giveaways. But there are also some noticeable differences: under the Labour governments from 1997, changes to the main rates and allowances of NICs and to other taxes made up a larger share of the takeaways than of the giveaways, no permanent changes were made to the main rate of VAT.

Figure 3.8 takes all measures from fiscal events since March 1970 (over which period the gross tax cuts are estimated to be slightly larger in scale than the gross tax rises) and provides a summary measure of the relative likelihood of tax-raising compared with tax-

Figure 3.8. Relative likelihood of budget measures being a giveaway or a takeaway by broad type of measure (weighted by size of measure), all measures since April 1970



Note: Figure takes all measures from budget scorecards since April 1970 and looks at their estimated impact on revenues. Those measures estimated to have no impact are ignored. Measures allocated to categories based on the OBR's tax definition and a judgement over whether the measure is a change to a standard rate or threshold or to something else.

Source: Authors' calculations using Office for Budget Responsibility, 'Policy measures database', 1 December 2016, http://budgetresponsibility.org.uk/data/.

cutting measures by the broad type of tax. Changes to the main rates of VAT, to other taxes and to the main rates and thresholds of NICs were more likely to boost than to reduce revenues, while changes to the rates of corporation tax or to the main rates and thresholds in income tax were more likely to reduce than to boost revenues. The lack of symmetry in how governments have chosen to increase and to cut taxes could reflect a sensible desire to move the tax system in a particular direction. For example, cuts to the rates of corporation tax are likely to have been a particularly good way to reduce taxes in a growth-friendly way and as a response to the pressures of globalisation. But they may, at least in part, reflect a tendency to cut taxes that are more salient and to increase taxes that are less high-profile.

At the very least, the evidence presented in Figure 3.8 shows that when further significant tax rises are announced – perhaps after the next general election in order to meet the Chancellor's stated objective of eliminating the budget deficit – history suggests increases in VAT, increases in NICs or increases in smaller taxes will be disproportionately likely to occur, whereas raising revenues through increases in corporation tax rates or income tax rates will be significantly less likely.

Policy risks: public spending

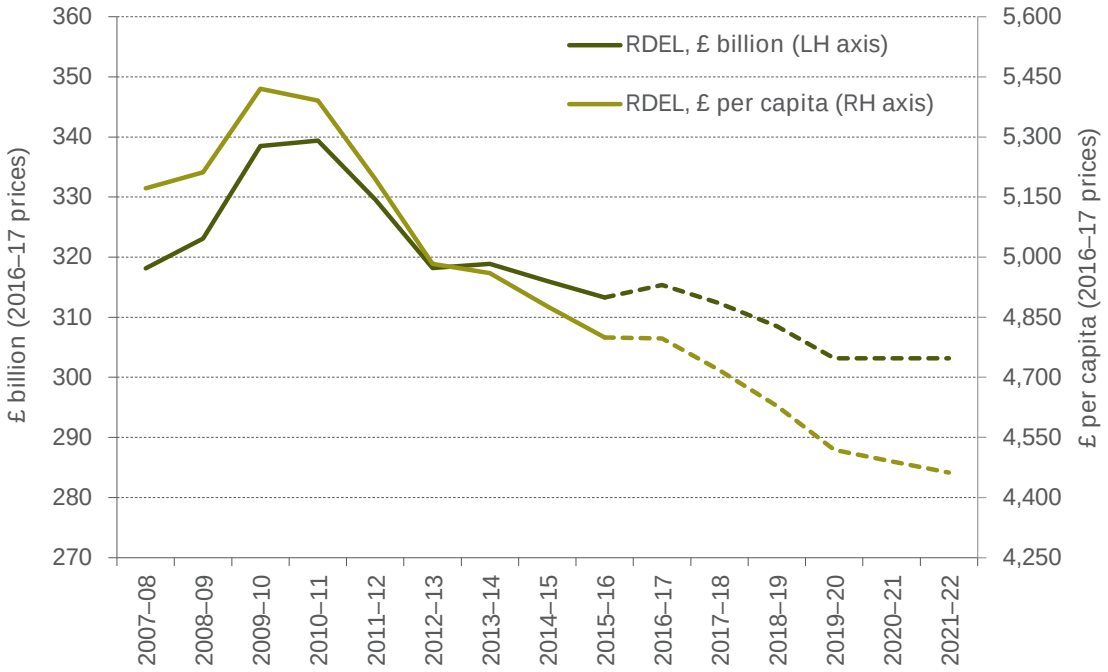
There are also risks to the public finances from possible policy changes affecting public spending. This subsection considers some of these risks.

One assumption that the OBR has made is that the government will continue to spend an amount equal to the UK's projected contribution to the EU budget, net of the UK's rebate (£13.4 billion in 2020–21). That does not mean it expects that we will continue to pay what we do into the EU, but rather that the government will choose to spend any saving. As the government has indicated, it may directly support some of the spending that the EU currently does in the UK (e.g. on poorer regions or on agriculture). It is quite possible that the government will choose to spend less than £13.4 billion – not least because the UK pays more into the EU budget than the EU spends in the UK – so there is some upside risk here. In recent years, the amount the UK contributes to the EU budget, net of both the rebate and the spending done by the EU in the UK, has been running at about £8 billion a year.

The biggest spending risks, though, are probably associated with the biggest spending items. In particular, will the government be able to deliver the further significant cuts to resource DELs that are planned? Recent out-turns, along with the latest forecasts, for DEL are presented below. Figure 3.9 shows these for 'resource DEL' – that is, day-to-day spending – while Figure 3.10 shows the equivalent figures for capital DEL. The two series in each figure show the totals in real terms (the darker line, using the left-hand scale) and in real terms per capita (the lighter line, using the right-hand scale).

In terms of resource DEL, over the three years to 2012–13 spending was cut by 6% in real terms from its 2009–10 level. But since then the cuts have been more modest, with the three years from 2012–13 to 2015–16 seeing a cut to RDEL of 1.5%. Spending is forecast to grow slightly in 2016–17. After this year, though, the plan is to accelerate cuts again. In the three years to 2019–20, a total cut of 3.9% is forecast. (This includes the £3 billion of yet-to-be-identified 'efficiency savings' to be delivered in 2019–20, with £1 billion of these savings to be recycled into higher spending.) Overall RDEL is forecast to be £12.2 billion lower in 2019–20 than in 2016–17. Population growth over this whole period means that if these

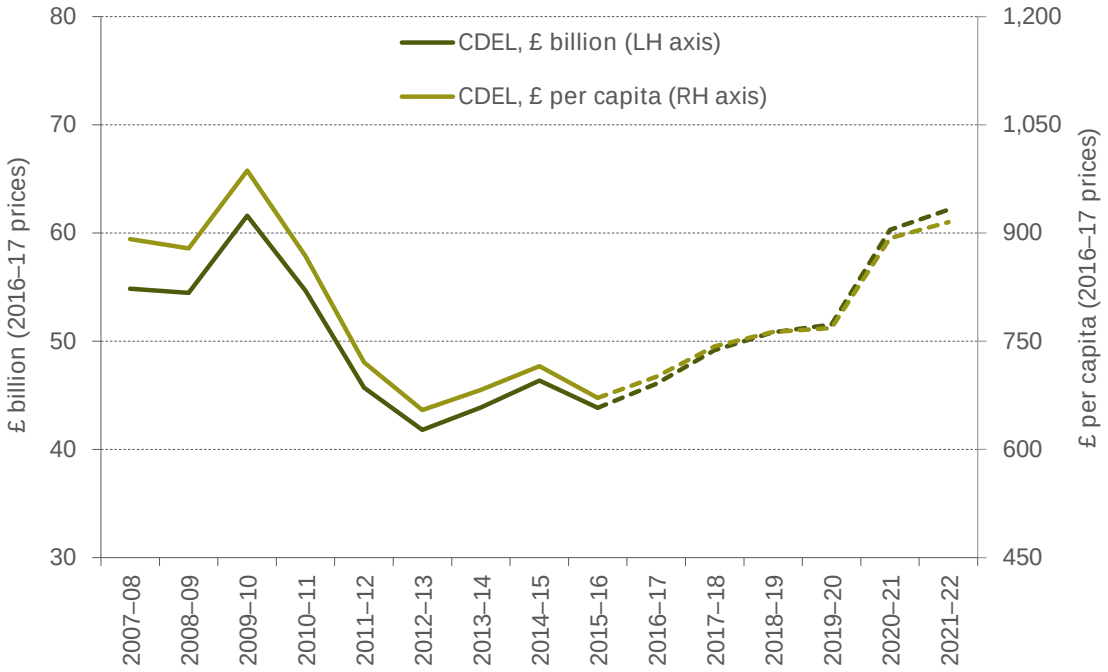
Figure 3.9. Forecast resource DEL



Note: Series adjusted by the OBR to remove historical discontinuities.

Source: Table 2.17 of Office for Budget Responsibility, *Economic and Fiscal Outlook Supplementary Fiscal Tables: Expenditure – November 2016*, http://budgetresponsibility.org.uk/efo/economic-and-fiscal-outlook-november-2016/.

Figure 3.10. Forecast capital DEL

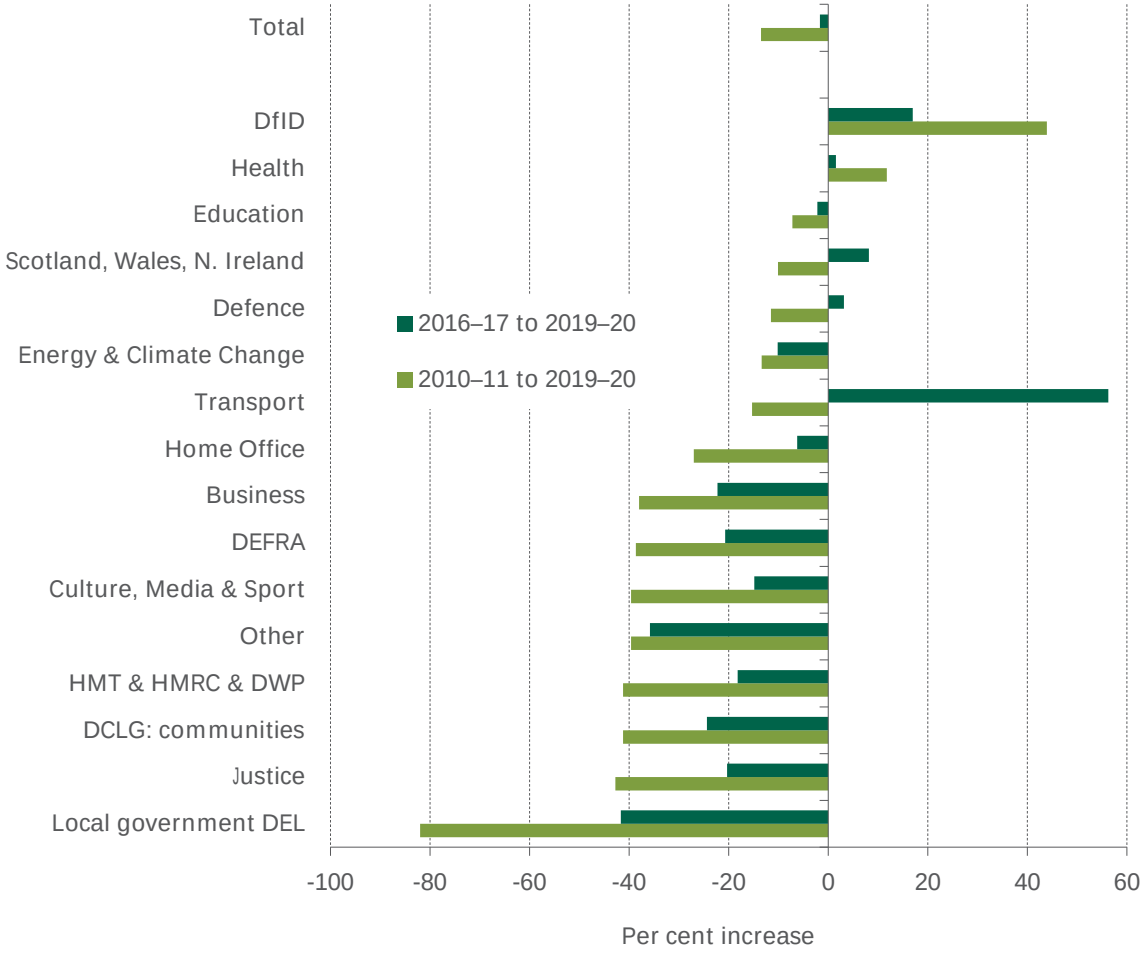


Note and source: As for Figure 3.9.

planned cuts to RDEL are delivered, spending per capita would be 16.6% lower in 2019–20 than its peak a decade earlier in 2009–10, and 12.6% lower than the pre-crisis level seen in 2007–08.

Delivering these cuts may not be easy given the squeeze over recent years. As an example of the pressures building in some areas, in the 2016 Autumn Statement the Chancellor needed to allocate additional funds to the Ministry of Justice in order to finance additional prison officers (an extra £125 million in 2017–18, £245 million in 2018–19 and £185 million in 2019–20). As set out in Chapter 5, there will be continued pressure for additional funding for the NHS and social care. It remains to be seen whether the government can continue with the largely successful delivery of cuts it has managed since 2010, or whether political and other pressures for additional spending will become overwhelming.

Figure 3.11. Planned real change to departmental expenditure limits, by department



Note: The cut to the local government DEL is due to reforms allowing local authorities to retain increasing amounts of revenue from business rates. Therefore it does not provide an indication of the cut to local authorities' overall budgets.

Source: Authors' calculations using table 1.10 of HM Treasury, *Public Expenditure Statistical Analyses*, 2015 and 2016 editions (https://www.gov.uk/government/collections/public-expenditure-statistical-analyses-pesa) and GDP deflators from Office for Budget Responsibility, 'Public finances databank', January 2017, http://budgetresponsibility.org.uk/data/.

The plans for capital DELs tell a different story. While CDEL was cut by almost one-third over the three years from 2009–10 to 2012–13, it has since increased. It is forecast to increase in each of the next five years, with a particularly sharp increase in 2020–21. Overall CDEL is forecast to be £5.5 billion higher in 2019–20, and £16.1 billion higher in 2021–22, than it is in 2016–17. If the forecasts are met, then CDEL in 2021–22 would, in real terms, be slightly above its previous peak in 2009–10 and would be 13.3% above its pre-crisis level in 2007–08. In terms of CDEL per capita, the level forecast in 2021–22 is 7.2% below its peak in 2009–10 but 2.6% above its pre-crisis level in 2007–08.

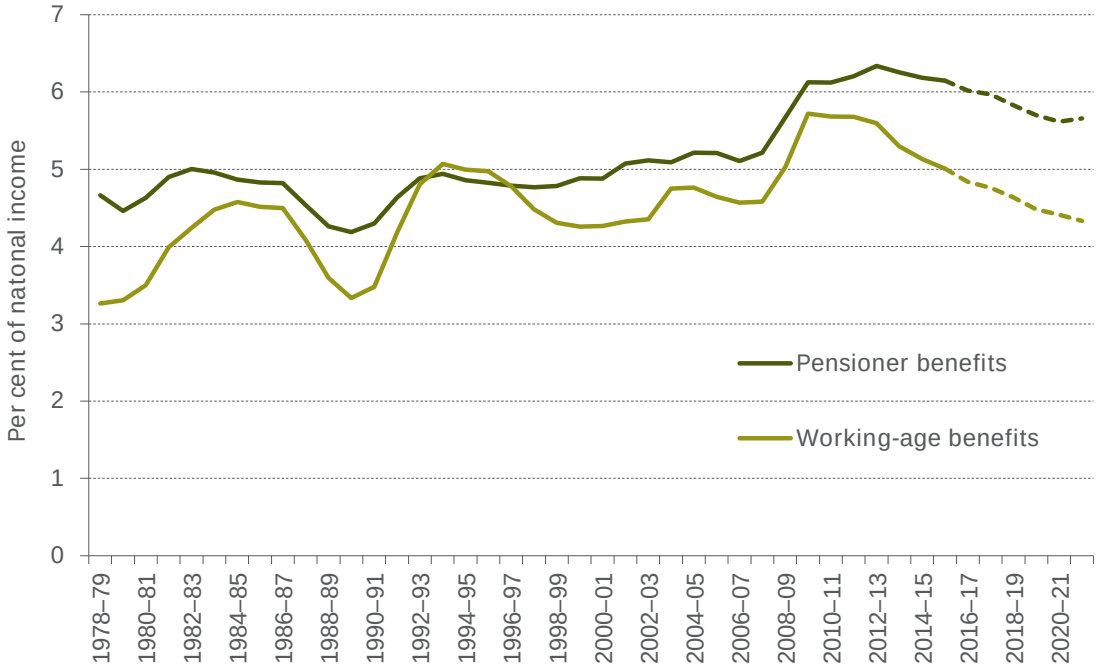
As a result of the different trends in RDEL and CDEL, there is set to be a large shift in the mix of total DEL spending over this period. In 2007–08 there was 17p of CDEL for every £1 of RDEL. By 2012–13 this had fallen to 13p of CDEL for every £1 of RDEL, whereas the forecasts imply that in 2021–22 it will increase to 21p of CDEL for every £1 of RDEL.

Overall departmental spending is planned to be cut in real terms over the period from 2016–17 to 2019–20, with these planned cuts coming on top of those already delivered over the period since 2010–11. These cuts have not been shared equally across all departments. The implied plans (on the departmental arrangements that existed at the time of the Spending Review) are presented in Figure 3.11. The Department for International Development (DfID), the Department of Health and the Ministry of Defence are all set to see their budgets rise in real terms over the period 2016–17 to 2019–20. In addition, while the Department for Transport is having its day-to-day budget cut, it has been allocated a significant increase in its capital budget (as part of the planned overall increases in the capital budget set out in Figure 3.10), such that its overall budget is forecast to increase significantly over the next three years. In contrast, several other departments have spending allocations that imply deep cuts – for example, the Ministry of Justice, the communities budget of the Department for Communities and Local Government (DCLG) and the Department for Culture, Media and Sport.

Total spending comprises DEL and annual managed expenditure (AME). The greater part of AME spending is on social security benefits (including tax credits). Total spending on social security benefits (in Great Britain, i.e. excluding spending in Northern Ireland), as a share of national income, is shown for the period since 1978–79 in Figure 3.12. This shows that in 2016–17, spending on pensioner benefits is forecast to be 6.0% of national income, which is 0.8% of national income higher than in 2007–08 prior to the recession. Over the same period, spending on working-age benefits has risen by 0.2% of national income, from 4.6% of national income in 2007–08 to a forecast 4.8% of national income in 2016–17. The forecasts imply that spending both on pensioner benefits and on working-age benefits will fall as a share of national income.

Despite the fact that the state pension age for both men and women will be 66 by October 2020 (compared with 65 and 60 respectively in 2010), spending on pensioner benefits, while falling over the next few years, will still be higher as a fraction of national income than in any year before 2008–09. Spending on working-age benefits, by contrast, will be below its level (as a fraction of national income) in most of the 2000s and roughly back to its level in the late 1990s (and mid 1980s). This largely reflects cuts to the generosity of working-age benefits being brought in over the next few years, notably the nominal freeze in the rates of most working-age benefits up to and including April 2019, and the continued expansion of universal credit which, for new claimants, will be at levels less generous on average than the tax credits and benefits it is replacing.

Figure 3.12. Outlook for spending on benefits and tax credits



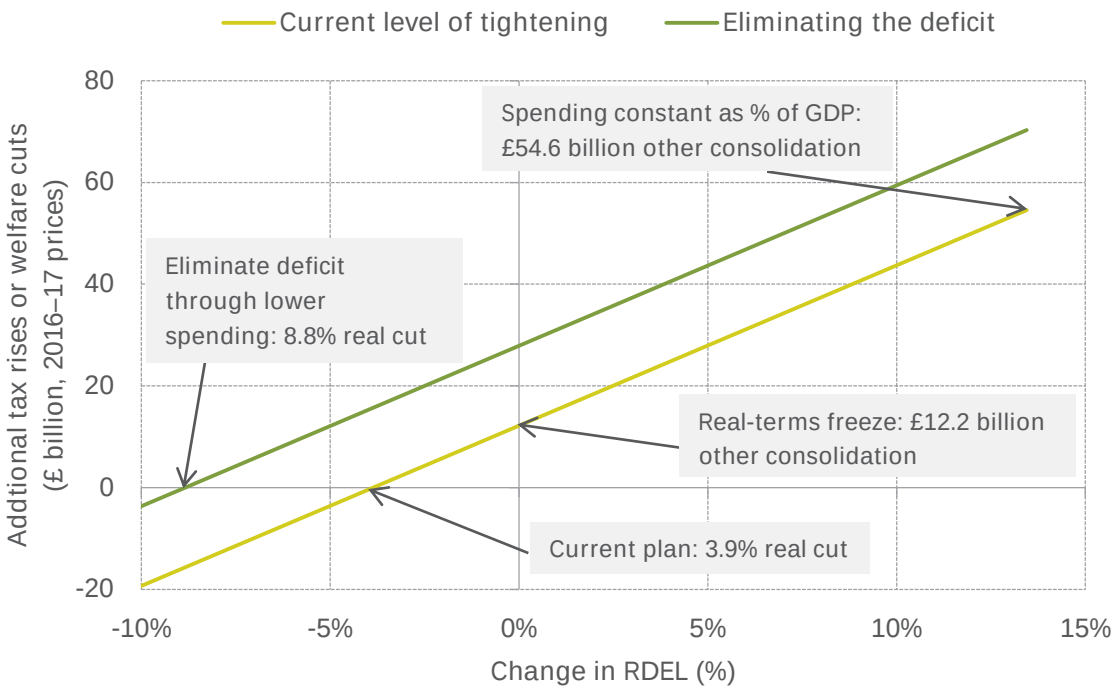
Note: Great Britain only.

Source: Table 'GB welfare' of Department for Work and Pensions, *Benefit expenditure and caseload tables 2016*, 21 December 2016, https://www.gov.uk/government/publications/benefit-expenditure-and-caseload-tables-2016.

Future spending plans depend not only on delivering these cuts but also on spending on incapacity benefits and disability benefits coming in on target. A significant reform to disability benefits – the replacement of disability living allowance with personal independence payment – that is intended to reduce spending significantly is still in the process of being rolled out. Reforms to both incapacity benefits and disability benefits have failed to deliver anything like the envisaged cuts to spending in the recent past. As set out in Chapter 6, this has led to the forecasts for spending on these benefits being revised up significantly. A downside risk to the public finances is that the numbers receiving these benefits – and therefore the amount being spent on them – come in above forecast.

The above analysis has described the implications of the current plans for cutting public spending as a share of national income over the next five years. Of course, the government could decide to change its plans. One aspect of making such a change is quantified in Figure 3.13. Currently, a 3.9% decrease in real-terms day-to-day spending is planned between this year and 2021–22. The government could ease the pressure on day-to-day spending by either borrowing more, cutting capital spending by more, cutting welfare by more or raising taxes by more. If the government wanted to keep day-to-day spending constant in real terms, this would require additional consolidation elsewhere and/or borrowing of £12.2 billion (in 2016–17 prices). Holding day-to-day spending constant as a proportion of national income would require an additional £54.6 billion of tightening elsewhere and/or additional borrowing.

Figure 3.13. Deficit reduction trade-off between cuts to day-to-day spending by central government on public services and tax rises/welfare cuts, 2016–17 to 2021–22



Note: Based on current plans for changes to RDEL. Deflated to 2016–17 prices using GDP deflator.

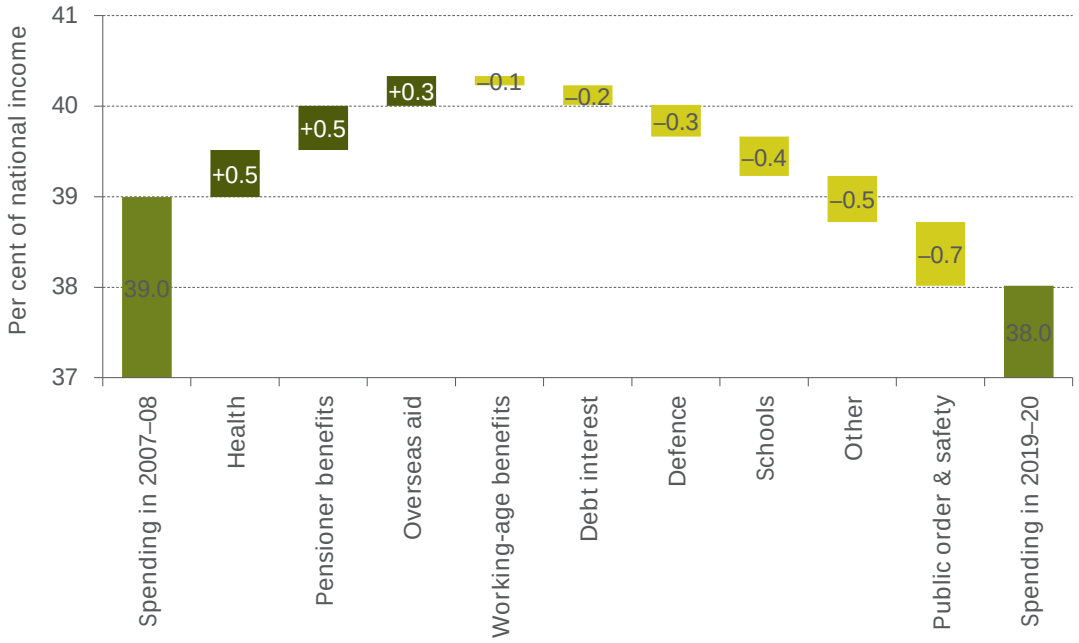
Source: Office for Budget Responsibility, *Economic and Fiscal Outlook*, November 2016.

Figure 3.13 also shows how this equation would change if the government wanted to eliminate the deficit by 2021–22. This would satisfy the fiscal target of returning the public finances to balance 'as soon as possible in the next parliament' and would require a further 0.7% of national income tightening. This could be achieved over the period to 2021–22 by cutting day-to-day spending by 8.8% in real terms (rather than the 3.9% cut currently planned), or by some combination of lower day-to-day spending and greater consolidation from elsewhere.

One result of choices over spending priorities made over the last decade has been to alter not just the level but also the make-up of public spending. Figure 3.1 showed that in the financial year before the financial crisis struck, 2007–08, total public spending was equal to 39.0% of national income. In the last year of the current parliament (assuming it runs its full course), total public spending is forecast to be 38.0% of national income. But this decline of 1.0% of national income disguises the fact that spending in some areas is forecast to have increased as a share of national income, whereas spending in some other areas is forecast to have fallen quite considerably.

Figure 3.14 shows that spending on health, pensioner benefits and overseas aid will all have increased as a share of national income since 2007–08 (by a total of 1.3% of national income). Despite the large increase in public sector net debt (shown in Figure 3.3), the fall in government borrowing costs will mean that debt interest payments are forecast to be a smaller share of national income in 2019–20 than in 2007–08. Spending on defence (notwithstanding the protection from cuts in the current parliament), schools and (in particular) public order & safety, alongside other elements of government spending that don't fall within these categories, are also forecast to be lower as a fraction of national

Figure 3.14. Public spending as a share of national income, 2007–08 and 2019–20 compared



Note: Figure decomposes the change in total managed expenditure. Working-age and pensioner benefits refer to Great Britain spending only. Overseas aid spending figure for 2007–08 actually refers to 2007, and the figure for 2019–20 is estimated assuming the UK spends 0.7% of GDP. Figures for defence, schools and public order & safety all refer to spending by function. Estimates for 2019–20 obtained by assuming: defence – growth in line with the Ministry of Defence budget; schools – real freeze to total spending; public order & safety – growth in line with the aggregate budget of the Home Office and the Ministry of Justice.

Source: Authors' calculations using data from the Office for Budget Responsibility, 'Public finances databank', January 2017, http://budgetresponsibility.org.uk/data/; Department for Work and Pensions, *Benefit expenditure and caseload tables: Autumn Statement 2016*, https://www.gov.uk/government/publications/benefit-expenditure-and-caseload-tables-2016; Department for International Development, *Statistics on International Development 2016*, https://www.gov.uk/government/statistics/statistics-on-international-development-2016; and HM Treasury, *Public Expenditure Statistical Analyses*, various years, https://www.gov.uk/government/collections/public-expenditure-statistical-analyses-pesa.

income in 2019–20 than they were in 2007–08. The sizeable cut to spending on public order and safety is in large part due to the fact that a large portion of this spending is from the Home Office and the Ministry of Justice (three-quarters of the total in 2015–16, with the remainder coming from DCLG and the devolved administrations) and the budgets of those two departments are planned to be cut by one-third in real terms over the period from 2010–11 to 2019–20 (see Figure 3.11).

Economic risks

The biggest uncertainty surrounds the economic forecast on which the borrowing numbers are based. This is always the case – the cash size of the economy is a particularly important determinant of tax revenues – but is especially relevant given additional uncertainty over the path of the economy in the next few years and considerable disparity among forecasters. Between March and November, the OBR downgraded the cash size of the economy in 2020–21 by 1.2%. This was driven entirely by a fall in real GDP growth over

the forecast period, with the GDP deflator index at broadly the same level as in March. At the same time, the OBR increased its forecasts for CPI and RPI inflation.

While these were negative changes, a number of other forecasters have suggested that the economic shock resulting from the UK leaving the EU might be more severe. Here we focus on the other independent, public sector forecaster, the Bank of England, which had presented its November forecast for the economy just three weeks before the OBR published its analysis. In this forecast, the Bank of England expects the economy to grow by less, and inflation to increase by more, than the OBR. The Bank of England November forecast is broadly in line with the average of independent forecasters surveyed by HM Treasury,[16] making it an interesting alternative scenario for the path of the economy. Here we consider how different the public finances might look if the world were to evolve in line with this Bank of England forecast.

Of course, forecasts for the economy are subject to revision. Recent data have been more positive than expected, meaning that an upgrade to the forecast in the short run may be likely. However, medium- to long-term prospects for the UK economy may be worse than in November. Since then, the Prime Minister has said the UK will leave the single market and may leave the customs union. Both theory and the available modelling suggest that remaining in the single market would be likely to mean stronger UK economic performance than a free trade agreement with the EU.[17]

Economic growth

The most important determinant of the public finance forecast is the cash size of the economy. Departmental expenditure is set in cash terms, so a change in the size of the economy does not, at least by default, affect the cash level of spending. On the other hand, tax revenues tend to increase in line with the cash size of the economy. We might also expect that slower growth would reduce the proportion of national income taken in tax revenues, as our tax system is progressive. For example, if every individual's income falls by the same proportion, the progressivity of the income tax system would mean that the average income tax rate on individuals' incomes would fall.

In November, the OBR downgraded the cash size of the economy in 2020–21 by 1.2%. As mentioned above, this resulted almost entirely from a downgrade to real GDP. Comparing the forecasts of March and November, lower economic growth increases borrowing, in total, by £8.2 billion (in 2016–17 terms) in 2020–21, or 0.42% of national income (see Table 3.5). This arises from lower tax revenues (with the main effect arising from lower employment income) being slightly offset by lower expenditure (with the main effect arising from lower average earnings growth, which slows the rate at which state pension payments are uprated).[18] Importantly, the vast majority of the downgrade to national

[16] The most recent survey in which HM Treasury collected medium-term forecasts was in November 2016. See HM Treasury, *Forecasts for the UK Economy: November 2016*, https://www.gov.uk/government/statistics/forecasts-for-the-uk-economy-november-2016.

[17] See, for example, M. Ebell and J. Warren, 'The long-term economic impact of leaving the EU', *National Institute Economic Review*, May 2016, 236, 121–38, http://dx.doi.org/10.1177/002795011623600115 and S. Dhingra, G. Ottaviano, T. Sampson and J. Van Reenen, 'The consequences of Brexit for UK trade and living standards', Centre for Economic Performance, Brexit Analysis 2, 2016, http://cep.lse.ac.uk/pubs/download/brexit02.pdf.

[18] The 'triple lock' stipulates that the state pension will increase in line with the largest of inflation (as measured by the CPI), average earnings growth and 2½% each year. Lower average earnings growth (if it was previously above 2½%) therefore reduces spending on the state pension.

income is thought to be permanent. The output gap is only forecast to be 0.1% of national income in 2020–21, so the OBR does not expect that lower growth over the next few years will be offset by higher growth in the future. Overall, this forecast gives us a national income elasticity for the public finances as a whole, implying that over this period a 1% fall in national income increases the deficit by 0.35% of national income (as 0.35 = 0.42/1.2).

The Bank of England's November forecast for (real) national income growth runs until the end of 2019. Compared with the OBR's March forecast – as shown in Figure 3.15 – the Bank's forecasts imply that the economy would grow by 2.3 percentage points less from 2016 to 2019, which would leave the economy 1.8% smaller in 2019 than the OBR forecast in March (and 0.6% smaller than the OBR's November forecast). Even at the end of this forecast horizon, growth is relatively sluggish (an annualised rate of 1.6%), implying that the downgrade to growth may be thought by the Bank to persist beyond 2019. Making the perhaps optimistic assumption that the Bank would forecast no further downgrade beyond 2019, and assuming that the composition of the Bank's downgrade is the same as that of the OBR, the deficit would be 0.22% of national income, or £4.3 billion (in 2016–17 terms), higher than the OBR's November forecast in 2020–21 (and £12.5 billion higher than the OBR forecast in March). If the Bank of England anticipated further downgrades beyond 2019, or if its downgrade was more tax-rich than that forecast by the OBR, the increase in borrowing could be larger still.

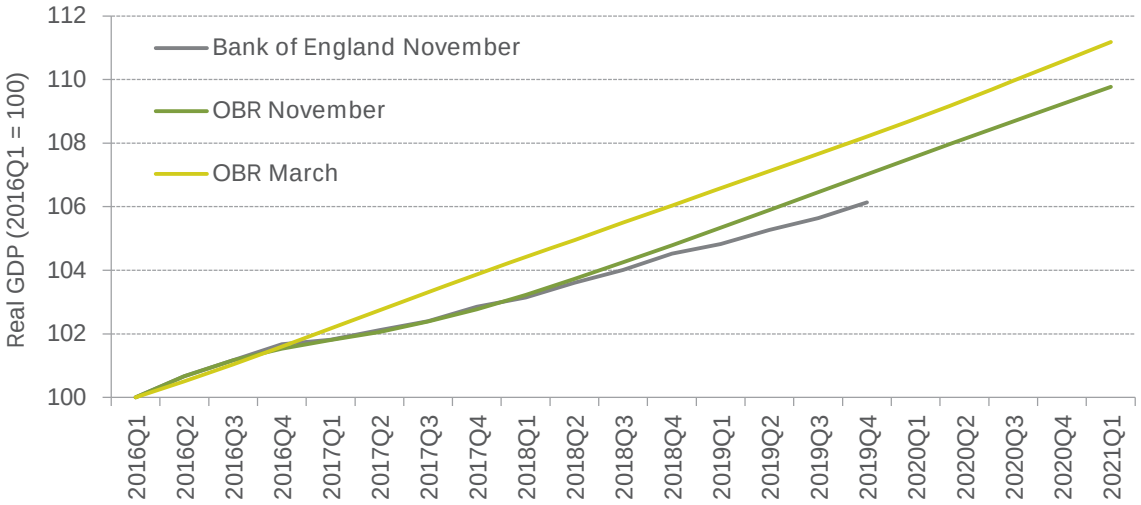
Table 3.5. Changes in borrowing as a result of lower economic growth

Income component	Change in 2020–21 (£ billion, 2016–17 terms)
Tax receipts	–9.1
Of which:	
Employment income	–8.7
Consumer spending	–0.3
Corporate profits	–0.2
Investment	+1.1
Other	–1.0
Spending	–0.9
Of which:	
Pension spending	–1.1
Other	+0.2
Total borrowing	**+8.2**

Note: Change in 2020–21 refers to change in tax revenues for tax components and change in spending for spending components.

Source: Annex B of Office for Budget Responsibility, *Economic and Fiscal Outlook: November 2016*, http://budgetresponsibility.org.uk/efo/economic-and-fiscal-outlook-november-2016/.

Figure 3.15. Forecasts for national income compared



Source: Bank of England, *Inflation Report*, November 2016, http://www.bankofengland.co.uk/publications/Pages/inflationreport/2016/nov.aspx; Office for Budget Responsibility, *Economic and Fiscal Outlook: November 2016*, http://budgetresponsibility.org.uk/efo/economic-and-fiscal-outlook-november-2016/.

There is much uncertainty – even more so than is usually the case – over the likely rate of economic growth in the next few years. Even if the OBR's growth forecast is approximately correct, however, it is still possible that the effect on the public finances will be quite different. For a given change in national income, the effect on the public finances depends on the composition of that change. For example, Chapter 7 discusses how the mix of remuneration between standard employees, the self-employed and those working for their own incorporated companies matters for the resulting tax revenues. To give another example, Table 3.5 shows that lower investment increases receipts in the short run (because investment costs are not used to offset taxable profit today). If the same fall in national income materialised less as a result of lower investment but rather through a larger fall in average earnings, the deterioration in the public finances would be larger.

We noted above that the November OBR forecast implied that a 1% fall in national income corresponded with a 0.35% of national income increase in borrowing. This reflects a relatively modest impact. Analysis from the OBR shows that typically a 1% fall in national income will lead to a 0.5% of national income increase in the deficit.[19] Should the downgrade to national income prove to be more tax-rich (say, with lower income growth but higher investment), the borrowing position could worsen further, increasing the deficit throughout the forecast horizon. Specifically, if a 1% fall in national income were to mean a 0.5% of national income increase in borrowing, the downgrade to the public finances (over and above the November forecast) would be £3.5 billion (0.2% of national income) if the OBR growth forecast were correct and £9.7 billion (i.e. £17.9 billion less £8.2 billion, which is equivalent to 0.5% of national income) if the economy grows as the Bank of England forecast in November. These scenarios are set out in Table 3.6.

[19] See paragraph 5.48 of Office for Budget Responsibility, *Economic and Fiscal Outlook: November 2016*, http://budgetresponsibility.org.uk/efo/economic-and-fiscal-outlook-november-2016/.

Table 3.6. Effect on borrowing of different downgrades to national income

Forecaster	Downgrade to GDP (relative to OBR March forecast)	Increase in borrowing if elasticity 0.35% (£ billion, 2016–17 terms)	Extra borrowing if elasticity 0.5% (£ billion, 2016–17 terms)	Total increase in borrowing if elasticity 0.5% (£ billion, 2016–17 terms)
OBR (November)	1.2%	8.2	3.5	11.8
Bank of England (November)	1.8%	12.6	5.4	17.9

Note: Figures may not sum due to rounding.

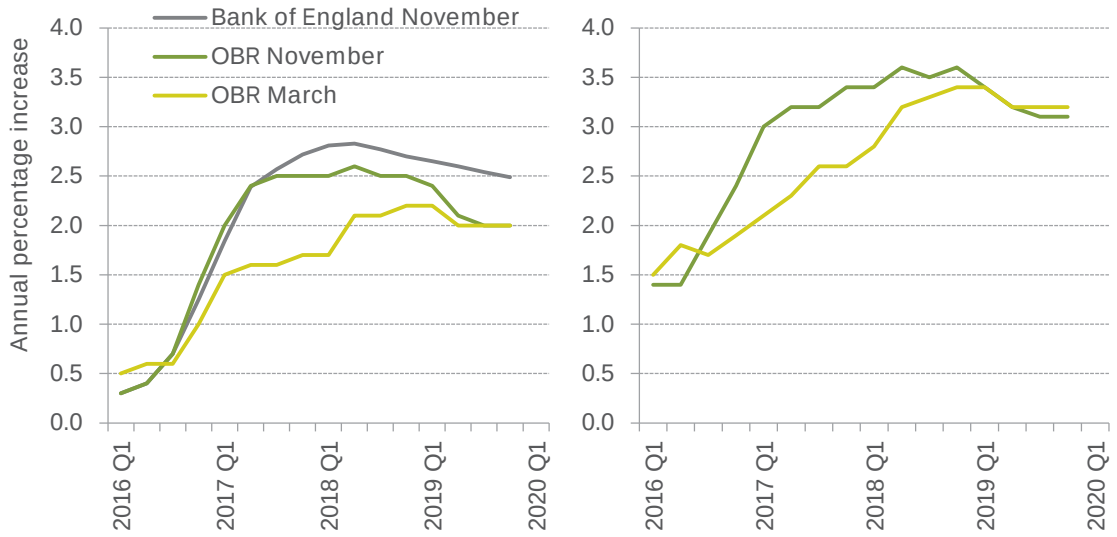
Source: See Figure 3.15.

Furthermore, we may expect this larger elasticity to reflect more accurately the long-run public finance cost of lower national income over the forecast horizon. While lower investment over the next few years boosts corporation tax receipts, in the longer term we would expect that lower investment to be reflected in lower profits and/or lower wages. This would hinder, rather than help, the public finances, meaning that the long-run cost to the public finances of lower growth in the next five years might well be larger than the borrowing increase forecast for 2020–21.

Consumer price inflation

While economic growth was downgraded between March and November, forecasts for consumer price inflation (the CPI and RPI) increased substantially (see Figure 3.16). This is

Figure 3.16. CPI (left panel) and RPI (right panel) inflation forecasts compared



Note: CPI stands for Consumer Prices Index. RPI stands for Retail Prices Index. The Bank of England does not provide a forecast for the RPI.
Source: See Figure 3.15.

largely due to a forecast rise in imported inflation as a result of the depreciation of the pound. This kind of inflation, resulting from the cost of imports, does not increase the cash size of the UK economy, so does not result in higher nominal tax receipts. But holding the cash size of the economy constant, higher consumer price inflation does lead to higher borrowing via higher spending on inflation-linked payments and lower tax revenues. This is because the CPI is used to uprate many direct tax thresholds (such as the income tax personal allowance and higher-rate threshold) and, despite the freeze to most working-age benefits, it is still used to uprate some benefits and it is also used in the uprating of public service pensions. While a higher rate of inflation as measured by the RPI will boost revenues from excise duties and business rates, it also pushes up spending on index-linked debt (although this is only a one-off effect unless higher inflation persists).

Overall, the forecast increase in consumer price inflation between March and November 2016 weakened the public finances by £2.8 billion in 2020–21, increasing spending by £2.1 billion and reducing receipts by £0.7 billion. However, as set out in Figure 3.16, the Bank of England forecast in November that the CPI would reach a higher peak than the OBR forecast, and that inflation would remain higher for longer. The Bank of England does not publish a forecast for the RPI. But if we assume that its RPI forecast would exceed the OBR's forecast by the same amount as with the CPI, then this would increase borrowing by a further £1.1 billion in 2020–21.[20]

Interest rates and quantitative easing

A final set of economic risks affect debt interest spending. Debt interest spending is affected by: (i) the stock of public sector debt; (ii) the average interest rate (or gilt rate) that applies to the stock of debt; and (iii) what proportion of the debt is held by public sector institutions rather than the private sector.[21] Between March and November, the forecast for debt interest spending fell. This was the combined effect of a larger projected stock of debt being more than offset by lower gilt rates on new debt (or old debt being refinanced) and an expansion of the Bank of England's Asset Purchase Facility, which meant that more government debt was held by another public sector institution. Further details of gilt issuance, and the holdings of the Bank of England, can be found in Chapter 9.

Since November, interest rates have risen. Ten-year gilt yields are on average 0.2 percentage points higher than at the time of the November forecast. The OBR ready reckoner implies that, were gilt rates to be 0.2 percentage points higher across the whole forecast period, debt interest spending could increase by around £1 billion by 2021–22.[22]

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[20] The RPI increased by less than the CPI between March and November 2016 mostly because the RPI includes housing costs in its basket and interest rates fell between March and November. However, any additional increase in the CPI is likely to be due to the Bank's judgement of how the pound's depreciation is likely to pass through to prices. This is likely to increase the CPI and RPI by the same amounts. Calculations based on Office for Budget Responsibility, *Economic and Fiscal Outlook*, November 2016. Effects of CPI and RPI inflation on spending and receipts derived from changes in those indices and the appropriate revisions to the forecast. Almost all of the £1.1 billion here arises from higher spending, with the effect on receipts of higher RPI and CPI inflation broadly offsetting one another.

[21] In particular, the debt interest payments due on gilts held by the Asset Purchase Facility (APF) do not count towards public sector debt interest. The only debt interest paid on these gilts is the cost for the Bank of England to finance the purchase of the debt, which is the base rate set by the Monetary Policy Committee. This currently stands at 0.25%, far below the gilt rates on the debt held in the APF.

[22] See supplementary table 2.36 of Office for Budget Responsibility, *Economic and Fiscal Outlook*, November 2016, http://budgetresponsibility.org.uk/efo/economic-and-fiscal-outlook-november-2016/.

Increases in the Bank of England bank rates also push up debt interest spending (via the interest payment on the liabilities held by the APF to purchase gilts). The OBR forecast is based on the bank rate increasing slowly over the next few years, such that in the first quarter of 2022 it is still running at 0.9%.[23] If the Bank of England were to increase the bank rate (the effective public sector net interest payment on gilts held by the APF) by more than the OBR assumes, this would also increase forecast debt interest spending. Every 1 percentage point increase in the bank rate leads to £4¼ billion more debt interest spending (shown in Table 3.7 later).

There is a broader, longer-term risk on debt interest spending, however. In the period since 2007–08, the stock of debt has more than doubled as a proportion of national income. But interest rates have fallen substantially, and the APF has purchased a sizeable proportion of the existing debt stock, such that the amount spent on debt interest is set to be lower as a proportion of national income in 2019–20 than it was in 2007–08 (see Figure 3.14). While recent history has taught us that forecasts for interest rates can fall even when they are at historically low levels, in the longer run gilt rates seem likely to rise and the APF is to be unwound. In 2020–21, public sector expenditure on debt interest is forecast to be almost £10 billion lower as a result of APF intervention. With the national debt set to remain high as a proportion of national income for a prolonged period, and with that debt needing to be refinanced over time, there is a likelihood that debt interest spending will impose a larger burden on public expenditure in the future. For a further discussion of these risks, see Chapter 9.

3.5 Conclusion

The deficit remains high and government plans imply further fiscal tightening over the next few years. In 2016–17, most of the measures to reduce the deficit are tax rises rather than spending cuts. But over the parliament as a whole, the largest tightening occurs through departmental spending restraint. The current forecasts imply an uneven profile of deficit reduction: an average decline in the deficit of 0.6% of national income a year between 2015–16 and 2018–19, a drop of twice that amount in 2019–20, and then hardly any more planned beyond that, such that the deficit is forecast still to be 0.7% of national income in 2021–22. Perhaps even more so than usual, the forecasts are uncertain. A cocktail of economic and policy risks mean that these forecasts could be subject to sizeable revisions going forwards.

In order to meet the government's main fiscal objective – to restore the public finances to balance as early as possible in the next parliament – the Chancellor (or his successor) would more-likely-than-not have to enact further fiscal tightening beyond 2021–22. Of course, the scale of fiscal tightening required will to a large extent depend on how the uncertainties considered in Section 3.4 materialise over the forecast period. If, for example, the economy grows less quickly than the OBR expects, the government delivers its policy commitments on income tax thresholds, and fuel duties remain frozen in nominal terms, the deficit would most likely be higher in 2021–22, requiring more tightening for the target to be met. If, on the other hand, the economy grows more quickly than forecast and the UK government banks rather than spends savings from reducing, or even eliminating, the UK's net EU contributions, the required consolidation

[23] See chart 3.8 on page 49 of Office for Budget Responsibility, *Economic and Fiscal Outlook: November 2016*, http://budgetresponsibility.org.uk/efo/economic-and-fiscal-outlook-november-2016/.

would most likely be smaller. But further challenges and risks that affect the public finances after 2021–22 will be relevant for whether – or at least how easily – the deficit can be eliminated.

According to the latest OBR projections, the next parliament is likely to be beset by relatively sluggish growth.[24] They anticipate that productivity growth will be hampered by uncertainty surrounding the UK's post-EU trade arrangements until the mid 2020s (real growth averages 2.2% per year in the first half of the 2020s, and 2.4% in the second half of that decade). Also factoring in downgrades between March and November forecasts, overall the economy is set to be 1.9% smaller by the mid 2020s than the OBR expected in March 2016.

Even this may understate the downside economic risks during the 2020s. Though the OBR assumes a decade of lower productivity growth (from 2016–17 to 2025–26) while the UK establishes its new trade arrangements, it has not downgraded longer-run growth prospects. That is, the OBR does not assume that the UK will grow less quickly outside the EU than it would have done within the union. If longer-run growth were to be lower – because, say, the UK was less open to trade – the economy might grow more slowly still. This would likely manifest itself during the 2020s, making it even more difficult for the government to balance the budget.

Should economic growth progress sluggishly over the next decade, tax revenues (in cash terms) would be likely to grow more slowly. At the same time, factors not linked to the pace of economic growth are likely to place upwards pressure on spending. In particular, an ageing population leads to higher state pension and long-term care spending. As older people use more health care, health costs are also set to rise. Additionally, the OBR anticipates that non-demographic factors, such as health care becoming more expensive as new technologies are developed, will place further upward pressure on health spending (see Chapter 5 for a more detailed discussion of the factors affecting health spending).

Overall, the OBR estimates that the combined effect of these factors is to place upward pressure on spending of around 1.0% of national income by 2025–26. That is, compared with a baseline in which these factors were unchanged between 2021–22 and 2025–26, satisfying the same demands will cost an additional 1.0% of national income. These pressures may be particularly important because current forecasts imply that spending on these three areas will actually fall by 0.5% of national income between 2016–17 and 2021–22 (helped by significant increases in the state pension age). What this means is that simply to keep pension promises and keep pace with rising demands for health and social care beyond 2021–22, the projections suggest we will need to increase annual spending by about £20 billion over the next parliament.

Of course, these pressures need not mean that borrowing increases by 1.0% of national income. However, they mean that, whatever level of borrowing the government aims for, achieving its plans will be more difficult – either public spending on pensions, health and social care will be less able to match demand, taxes will be higher, or spending on other areas will be lower. Given large spending cuts already achieved (and with more planned

[24] Office for Budget Responsibility, *Fiscal Sustainability Report*, January 2017, http://budgetresponsibility.org.uk/fsr/fiscal-sustainability-report-january-2017/.

over the next five years), these additional pressures could make even a relatively modest reduction in borrowing during the next parliament more difficult.

Demographic pressures and economic performance are not unrelated. To the extent that these public spending cost increases will occur no matter how the economy grows, these pressures will be more (less) burdensome if the economy grows less (more) quickly than the OBR assumes. However, regardless of the level of economic growth, demographic and non-demographic public spending pressures represent a substantial (and increasing) fiscal challenge through the 2020s and beyond.

Table 3.7 presents an illustrative scenario for the next parliament, and the scale of fiscal consolidation that might be required in order to meet the fiscal target of budget balance. If we assume growth up to 2020 were to materialise as the Bank of England's November forecast implies, the government fulfils its commitment to increase income tax thresholds, and fuel duties remain frozen, this would lead to borrowing being £8 billion (in 2016–17 terms) higher in 2020 than the OBR forecasts. However, this could be offset by the government banking a large slice of the net contribution to the EU budget (which would broadly enable the government to replace funds currently spent by the EU in the UK).

So assuming that the deficit in 2021–22 is the same as the OBR forecasts (0.7% of national income, £14¼ billion in 2016–17 terms), the challenge would be made larger by the pressures of an ageing population, equal to 1.0% of national income by 2025. Furthermore, if the GDP downgrade up to 2021–22 (again based on the Bank of England's November forecasts) affects the public finances by more beyond that (because lower investment initially increases tax revenues, but will lead to revenues being lower in the longer run), this could add a further 0.3% of national income to borrowing. Taking these factors into account, consolidation may have to total £40 billion in 2016–17 terms (2% of national income) in the next parliament in order to bring the public finances into balance. In this scenario, lower growth beyond 2020 does not increase the scale of consolidation (because spending and tax thresholds are assumed to grow in line with national income), but the slower growth is beyond 2020, the smaller any real-terms increase in spending on public services will be.

Table 3.7. Possible scale of fiscal consolidation required in the next parliament

	Cost (£ billion, 2016–17 terms)	Cost (% of national income)
Forecast deficit in 2021–22[a]	14¼	0.7%
Pressure from ageing population	19½	1.0%
True long-run elasticity is 0.5% for GDP downgrade[a]	5½	0.3%
Total	**39¼**	**2.0%**
Note: Potential risk from higher base rate[b]	*4¼ per 1ppt rise*	*0.2% per 1ppt rise*

[a] These numbers are lower than those presented earlier in the chapter as all figures in this table are in 2016–17 terms.

[b] Assumes APF holdings of £435 billion.

Note: This calculation assumes economic growth matches the Bank of England November forecast, tax thresholds are uprated in line with national income beyond 2021–22 and spending (before demographic change is taken into account) increases in line with national income. Numbers may not sum due to rounding.

Still the greatest impact comes from how the economy performs. Should it perform better (or worse) than assumed by the Bank of England in November, this will be reflected in a smaller (or larger) required consolidation. However, faster growth may also be accompanied by higher debt interest spending (as interest rates tend to rise as the economy performs better). This would be the reverse of what has happened in recent years, when the public finance impact of disappointing economic performance has been cushioned to some extent by lower interest rates. A further risk surrounds migration. If the economy follows the OBR's 'low migration' scenario (105,000 net inward migration per year, rather than 185,000 per year), this would lead to lower economic growth (by 0.2 percentage points per year on average from 2022–23 to 2025–26) and would increase borrowing in 2025–26 by a further 0.1% of national income through lower tax receipts.

Given the fiscal risks that lie ahead – within the current forecast horizon and beyond – the main stated objective of fiscal policy (to balance the public finances by 2024–25) seems likely to prove to be a difficult task. Should risks materialise unfavourably over the next decade, it is perfectly conceivable that even by 2024–25, a full 14 years after the process of fiscal consolidation began, the deficit would not be eliminated.

3.6 Postscript

At the time of writing, the most recent Bank of England forecast was presented in the November *Inflation Report*. Since then, the Bank of England has released its February forecast. This upgraded economic growth over the next few years relative to its November forecast, and the Bank no longer expects the economy to grow more slowly than the OBR expects. Had we used the February forecast in our analysis, the 'Bank of England' growth scenario explored above would have been similar to the OBR growth scenario (see Table 3.6). The analysis in Sections 3.4 and 3.5 remain instructive, however. Forecasts are likely to be subject to (upwards and downwards) revisions over the next few years, and given that the Bank's November forecast was broadly in line with the average of independent forecasters surveyed by HM Treasury, it remains a plausible alternative economic scenario to consider.

4. ICAEW: public sector liabilities in the Whole of Government Accounts

Ross Campbell (ICAEW) and Martin Wheatcroft (on behalf of ICAEW)

Key findings

The Whole of Government Accounts reflect the financial consequences of decisions made by successive governments, in particular in the increasing level of liabilities being recorded.	Total liabilities of £3.6 trillion (191% of GDP) were reported at 31 March 2015, almost two-and-a-half times the narrower measure of public sector net debt reported in the National Accounts of £1.5 trillion (or 83% of GDP).
The effectiveness of the Whole of Government Accounts as a tool to support good public financial management would be improved by a better commentary and by more timely preparation.	The Whole of Government Accounts are a world-leading development in public sector financial reporting, but progress is needed to reduce the 14 months taken to produce them and to improve narrative disclosures to the standards expected of listed companies.
The focus on reducing the 'near cash' fiscal deficit measure in the National Accounts risks less attention being given to controlling costs incurred that will be settled in the longer term.	The 38% reduction in the fiscal deficit over the five years to 2014–15 was not matched by the 19% reduction in accounting deficit over the same period, a significant divergence from the government narrative about the public finances.

After debt, the most significant liabilities are for public sector pension entitlements. Decisions made to provide defined benefit pensions to employees have exposed the public sector to significant economic and demographic risks, in particular to unanticipated increases in longevity.	Public sector unfunded pension liabilities amounted to £1.4 trillion at 31 March 2015, up by £354 billion since 2010. Local authority and other funded pension scheme liabilities of £377 billion were supported by investments of £257 billion, with investment growth offsetting most of the increase in liabilities since 2010.
Better information is needed to allow decision-makers to choose between spending today and increasing long-term liabilities, such as deciding whether to invest in addressing medical failures versus the cost of clinical negligence claims.	Liabilities for nuclear decommissioning, clinical negligence and the Pension Protection Fund continue to rise, with long-term liabilities up to £175 billion at 31 March 2015. These are obligations to pay cash in the future, reducing the amount available in future for other priorities.

4.1 Introduction

Decisions have consequences.

Many of those consequences are financial.

For example, billions of pounds are needed to decommission nuclear facilities as a consequence of decisions made by governments from the 1950s onwards. Decisions made by successive governments to borrow to fund cash spending have resulted in the build-up of substantial debts. And growing levels of pension obligations have arisen as a consequence of decisions to offer defined benefit pensions to public sector employees.

The Whole of Government Accounts (WGA) provide a way of reporting on the financial consequences of decisions, in particular by reporting on the assets created or the liabilities incurred each financial year by public bodies across the UK. This chapter focuses

on the latter, the £3.6 trillion of accumulated public sector liabilities (equivalent to 191% of one year's GDP) reported in the 2014–15 WGA and the decisions that have led to them.

Table 4.1 provides an illustration of how different decisions can affect cash flows and the consequent impact on liabilities reported in the balance sheet.

Section 4.2 provides more information on the WGA and the liabilities included in the balance sheet, including how they differ from the more commonly referred to public sector net debt. It also comments on the differences between the fiscal and accounting deficits and how these have driven a deterioration in the government's financial position as reported in the WGA over the five years to 31 March 2015.

Financial liabilities and how they are managed are dealt with in Chapter 9 and so Section 4.3 examines in more detail the most significant long-term liability after debt – the obligation to pay pensions to current and former public sector employees who are members of public service pension schemes. It analyses the build-up of pension obligations, explains how they are valued for accounting purposes, examines the future profile of pension payments and discusses what this means for future policymaking. The effect of discounting on the measurement of pension obligations is analysed and the merits of funded versus unfunded pension plans are discussed.

Table 4.1. Decisions and financial consequences

Decision	Cash flow	Balance sheet
Provide a new public service	Immediate cash payments	More debt
Raise taxes	Immediate cash receipts	Less debt
Provide an unfunded defined benefit pension to employees	Future cash payments	Pension liability (with exposure to economic and demographic factors)
Provide a funded defined contribution pension to employees	Immediate cash payments	More debt
Spend more in tackling medical failures	Immediate cash payments Lower future cash payments	More debt Reduced clinical negligence liability
Build a new nuclear power plant	Cash payments for construction Future cash inflows from generating electricity	New asset and more debt Nuclear decommissioning liability
Issue a guarantee	Risk of a future cash outflow	New contingent liability

Section 4.4 looks at some other long-term liabilities, including nuclear decommissioning obligations, clinical negligence claims and the Pension Protection Fund. It also considers contractual and other commitments not recorded as liabilities in the balance sheet, such as to pay for services under Private Finance Initiative (PFI) contracts, and contingent liabilities that might be payable in certain circumstances.

Section 4.5 concludes.

Box 4.1. The Whole of Government Accounts and the National Accounts

The WGA are integrated financial statements (i.e. accounts that balance). They are prepared in accordance with International Financial Reporting Standards (IFRS), a set of accruals-based financial accounting standards issued by the International Accounting Standards Board (IASB). In the UK, the government's Financial Reporting Advisory Board (FRAB) has made some specific adaptations for public sector use.

The latest WGA covered the government's financial year ended 31 March 2015. They were published on 26 May 2016, 14 months after the balance sheet date, and incorporated the financial results of some 6,000 bodies across central government, the devolved administrations and local government.

Together with an associated commentary and explanatory notes, they provide a more comprehensive picture of the government's financial performance and position than that available through traditional fiscal reporting in the National Accounts. This is because the WGA capture a wider range of financial transactions than are reflected in the National Accounts, including charges for obligations incurred today that will be settled in the future.

The framework used by the Office for National Statistics (ONS) for the presentation and measurement of economic activities including the public sector finances is known as the National Accounts. It is derived from the European System of National and Regional Accounts (ESA), which in turn is derived from the UN System of National Accounts. The current version, ESA10, was implemented in the UK in 2014, replacing ESA95.

The public finance numbers reported within the National Accounts are based on resource accounting, a hybrid between fully accruals-based and cash accounting approaches. This takes some account of assets and liabilities in calculating the 'near cash' fiscal deficit (public sector net borrowing), but then reverses those items to get back to a 'cash' number for public sector net debt.

Box 4.2. What is a liability?

A liability is a legal or similar obligation to pay cash or deliver value in the future that arises as a consequence of a current or past event.

Liabilities include amounts owed to specific individuals or organisations at a specific date, such as debt owed to financial institutions and investors, amounts owed to a supplier for goods or services that have been received, or amounts owed to employees for their pension entitlements. They also include other obligations incurred as a consequence of past events, such as the requirement to pay for the cost of decommissioning nuclear plants and deal with nuclear waste.

Not all expected future payments are recognised as liabilities in the balance sheet. For example, the state pension and welfare benefits are not considered to be liabilities as there is no unavoidable or contractual commitment to pay them: they are future policy choices. Certain other types of commitments such as committed grants or obligations to pay for future services under PFI contracts are also excluded.

Some liabilities may not be sufficiently certain to recognise in the balance sheet – for example, legal claims where there is a possibility that a payment may have to be made or a guarantee that will only be triggered in certain circumstances. These are known as contingent liabilities and are disclosed in the notes to the financial statements.

To clarify the differences, consider the construction of a new bridge:

- a plan for a new bridge is announced: this is a **promise** to construct the bridge;
- planning permission is obtained, money is allocated in the Budget and a formal announcement is made: this is a **commitment** to construct the bridge;
- contracts are signed: this is a **contractual commitment** – a legal obligation to deliver cash to the bridge builder for a future event;
- the bridge is built: this is a **liability** – a legal obligation to deliver cash to the bridge builder as a result of a past event; and
- a legal claim is received from a local resident, which could be, but is not likely to be, successful: this is a **contingent liability** – a potential legal obligation to pay the claimant as a consequence of a past event.

4.2 The Whole of Government Accounts and total liabilities

Whole of Government Accounts 2014–15

The 2014–15 WGA were published in May 2016, some 14 months after the end of the financial year to which they relate. This was 2 months longer than the 12 months it took to prepare the 2013–14 WGA, partly because of delays in the preparation of the financial

statements for the Department for Education, which has struggled to handle the transfer of schools from local authority control to central government academy status.

Although similar in scale and complexity to the financial reporting processes of major multinational listed companies, the time taken to prepare and audit the WGA is substantially longer than the two to three months typical in the private sector.

The timing of publication, very close to the EU referendum, meant that the WGA received little comment at the time, despite reporting a £262 billion deterioration in the government's financial position, from opening net liabilities of £1,841 billion at 1 April 2014 to closing net liabilities of £2,103 billion at 31 March 2015.

The 2014–15 WGA can be summarised as shown in Table 4.2.

Liabilities in the balance sheet exceeded assets by £2,103 billion at 31 March 2015. These net liabilities were balanced by an equal and opposite amount of negative equity, comprising accumulated accounting deficits and other equity reserves.

This represents a negative 'investment' by the British public in the UK public sector, equivalent to approximately £75,000 for each UK household at 31 March 2015, with total liabilities of approximately £130,000 exceeding assets of approximately £55,000 per household.

Table 4.2. Summarised Whole of Government Accounts 2014–15, £ billion

Revenue and expenditure	**£ billion**	**Balance sheet**	**£ billion**
Revenue	659	Total assets	1,455
Expenditure	(811)	**Total liabilities**	**(3,558)**
Accounting deficit for the year	**(152)**	**Net liabilities**	**(2,103)**
Cash flows	**£ billion**	**Change in financial position**	**£ billion**
Operating cash outflow	(11)	Accounting deficit for the year	(152)
Investing cash outflow	(53)	Actuarial revaluation	(135)
Interest and similar outflows	(27)	Asset revaluations	27
Financing cash inflow	**91**	Other movements	(2)
Change in cash balances	0	**Change in financial position**	**(262)**

Note: In this table, positive numbers are used for revenue, other gains, cash inflows and assets, while (bracketed) negative numbers are used for expenditure, losses, cash outflows and liabilities.

Source: HM Treasury, *Whole of Government Accounts 2014–15*. These, and those for earlier years, can be downloaded from http://www.gov.uk/government/collections/whole-of-government-accounts.

The change in financial position during the year principally arises from the combination of expenditure exceeding revenue and an actuarial revaluation that increased pension scheme liabilities. The former is discussed in more detail below, while the latter is dealt with in Section 4.3.

Accounting deficit

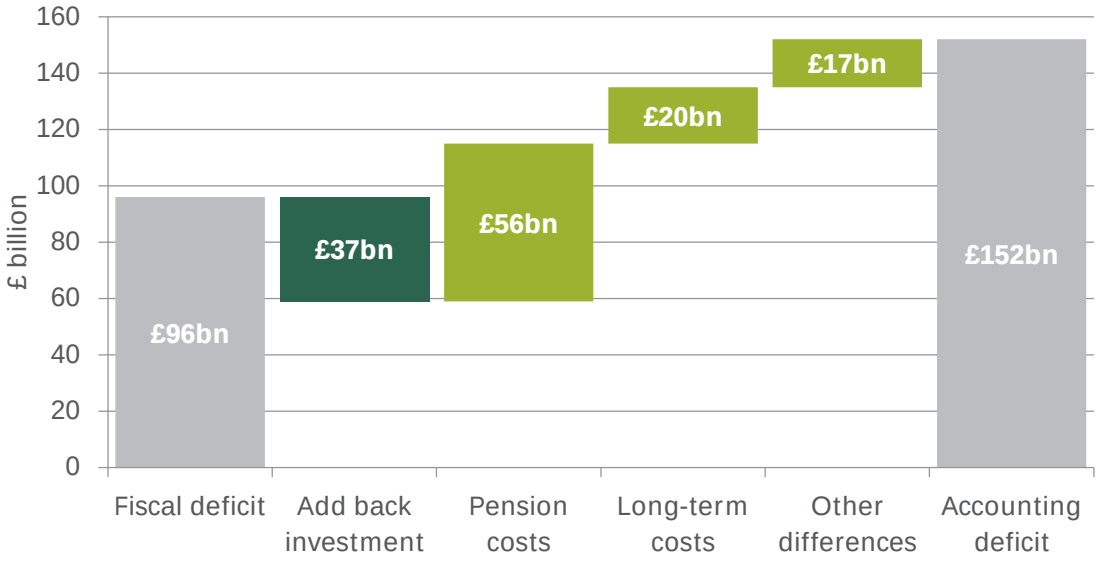
Revenue and expenditure reported in the WGA differ from the amounts reported for public sector receipts and total managed expenditure in the National Accounts. Hence the accounting deficit reported in the WGA is different from the fiscal deficit reported in the National Accounts.

The main differences between the accounting and fiscal measures arise because certain costs included in the WGA are not included in the National Accounts, resulting in an accounting deficit that is significant larger than the fiscal deficit.

The fiscal deficit is also known as public sector net borrowing.[1] It was £96 billion in 2014–15 and as a 'near cash' measure was closer to the £91 billion financing cash inflow than to the accounting deficit of £152 billion in the WGA.

Figure 4.1 illustrates the differences between the fiscal deficit and the accounting deficit. After adding back net investment, which in the WGA is treated as an addition of assets rather than a cost, the principal differences relate to the costs of providing pensions to public sector employees and to other long-term costs that have been incurred but will be settled in the future.

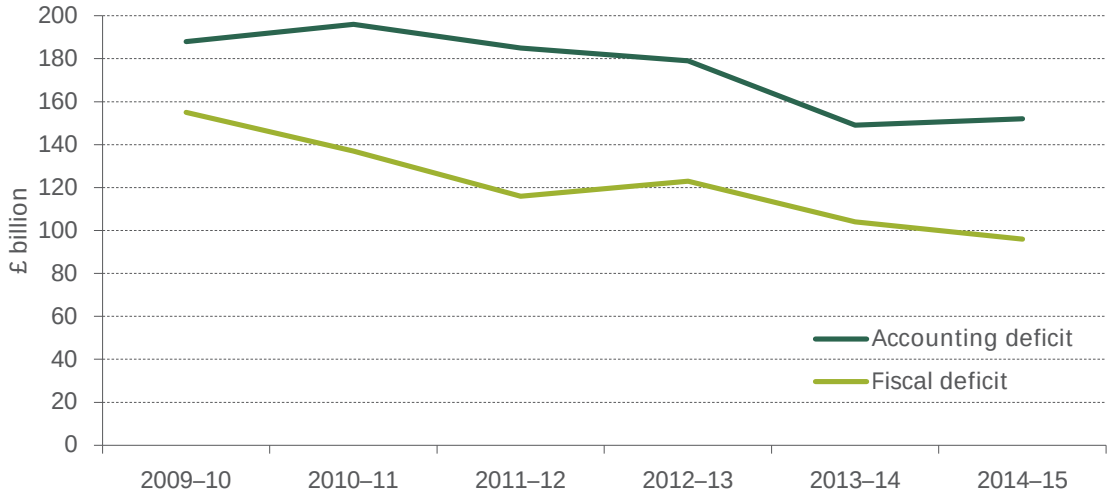
Figure 4.1. Fiscal deficit versus accounting deficit 2014–15, £ billion



Source: HM Treasury, Whole of Government Accounts 2014–15, updated for changes in the reported fiscal deficit.

[1] Public sector net borrowing is an 'accruals' government accounting measure. It is different from the amount of net cash borrowed by the government because it takes account of short-term assets and liabilities.

Figure 4.2. Accounting and fiscal deficits 2009–10 to 2014–15, £ billion



Note: Accounting deficits exclude one-off gains and losses in 2009–10 and 2010–11.

Source: OBR, Public Finances Databank, November 2016; HM Treasury, Whole of Government Accounts 2014–15 and 2013–14.

On average, accounting deficits have been £172 billion over the five years to 2014–15, some £57 billion more each year than the average fiscal deficits of £115 billion over the same period.

These differences have actually increased over the last five years. As a result, the fiscal deficit has reduced since 2009–10 by 38% as the government has implemented austerity measures to control cash spending whereas accounting deficits have fallen by a shallower 19%, as shown in Figure 4.2.

The smaller reduction in the accounting deficit is indicative of how policies have been targeted at reducing spending and increasing taxes captured by the narrower National Accounts measures of debt and deficit. They have not had a similar impact on other expenditure and especially long-term liabilities, which have actually grown significantly.

Although this may be partly due to longer-term costs being less easy to control than short-term spending, there is a significant risk that the exclusion of these costs from deficit reduction targets has itself caused these items to receive less attention than they otherwise would have done, even if over time they may be more significant to the government's financial position.

Narrative disclosures

Financial statements such as the WGA are normally accompanied by narrative disclosures that put the numbers into context.

Typically this includes an overview explaining the nature and scale of operations, followed by an operating and financial review that comments on the numbers, discusses progress against strategic objectives, and addresses risks and how they are managed. A remuneration report explains pay policies, while the statement of responsibilities sets out how the financial statements have been prepared and the adequacy of financial controls designed to ensure their accuracy.

The WGA does include narrative disclosures, but unfortunately these do not meet the standard of narrative reporting that the government expects listed companies to adopt under corporate governance rules. Although there were significant improvements made in 2013–14, these were reversed in the 2014–15 WGA. The gap with best practice remains substantial.

This is a missed opportunity.

Currently, there is no single regular report that provides a comprehensive commentary on the government's fiscal strategy, its progress against short- and long-term financial objectives and what that means for the long-term sustainability of the public finances.

Some of these elements do exist in various different places. The Budget comments on progress against short-term fiscal objectives, but does not deal with the development of the public sector balance sheet reported in the WGA. Fiscal sustainability reports produced by the Office for Budget Responsibility provide projections of the future shape of the public finances, but do not deal with fiscal strategy.

Improved narrative reporting would do more than comment on the year's financial performance and position presented in the WGA. It could address the wider financial circumstances in which the public sector operates and communicate expected future financial developments. It would bring together short-term fiscal objectives with long-term fiscal strategy, while discussing how risks are managed. It would also address the government's future financing requirements, something we examine in more detail in Chapter 9.

Recent innovations in narrative reporting would also be helpful, such as viability statements that assess an organisation's financial resources and liquidity in 'stress-test' scenarios that might conceivably occur. This would be particularly relevant in the light of the financial crisis and the increased risks associated with global financial markets.

Perhaps most importantly, narrative disclosures enable organisations to set out their strategy and how they have made progress against their strategic and financial targets.

Government would benefit from using the narrative disclosures in the WGA to explain the financial consequences of the decisions it is making. This would not only improve transparency about the public finances, but it would support Parliament in being able to hold the government to account and help with improving public confidence.

Total liabilities

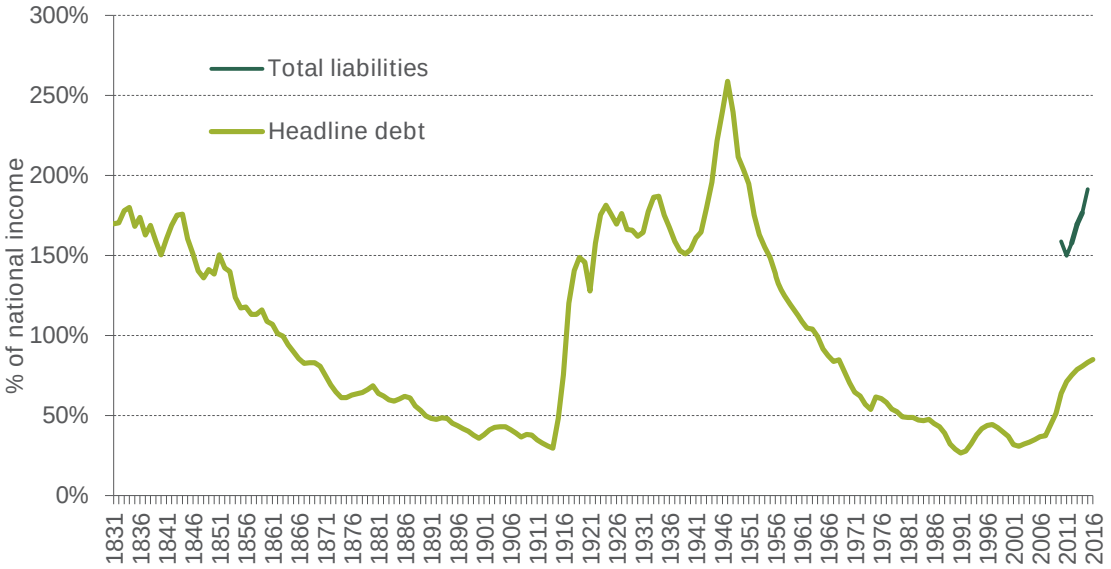
Total liabilities have grown significantly over recent decades as the consequence of decisions made by successive governments. This is illustrated by Figure 4.3, which shows headline debt as a percentage of GDP since 1831 and total liabilities as a percentage of GDP since 2010.

Although numbers for liabilities before 2010 are not available, it is likely that additional liabilities in excess of headline debt in the first half of the 20th century and earlier were significantly smaller in relation to the size of the economy than those seen today.

Since 2010, total liabilities have increased by £1,081 billion, a 43% increase over a five-year period, as shown in Figure 4.4. This compares with an increase in the size of the economy of 19% over the same period.

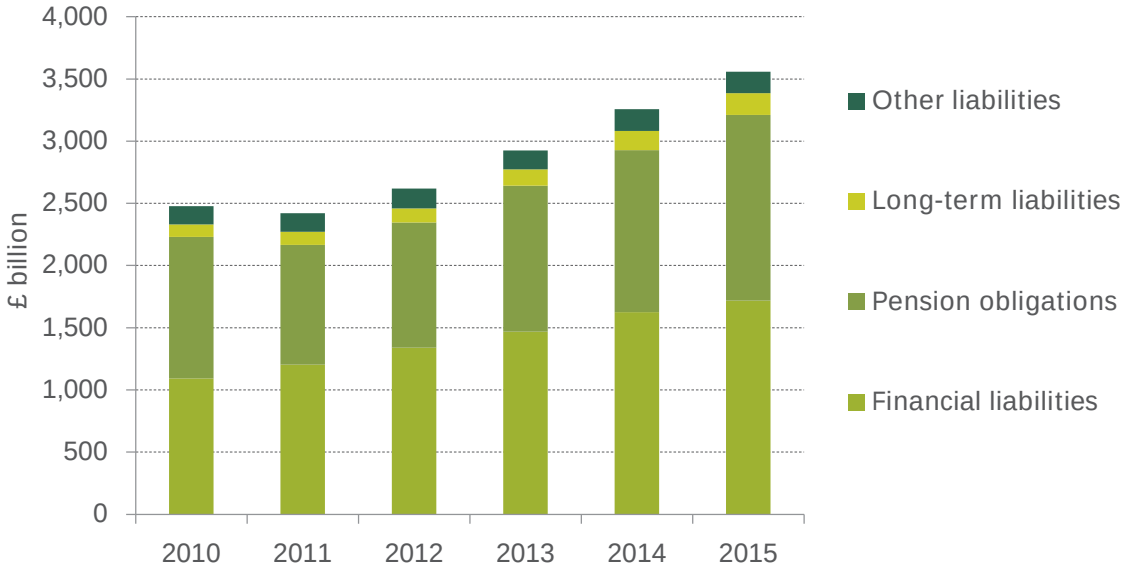
This was a consequence of accounting deficits[2] of £172 billion on average each year, average actuarial revaluations of £43 billion and average annual funding to invest in

Figure 4.3. Debt and total liabilities over the last 185 years, % of GDP



Source: Bank of England, Three Centuries of Data; HM Treasury, Whole of Government Accounts 2014–15 and 2013–14.

Figure 4.4. Total liabilities, March 2010 to March 2015, £ billion



Source: HM Treasury, Whole of Government Accounts 2014–15 and 2013–14.

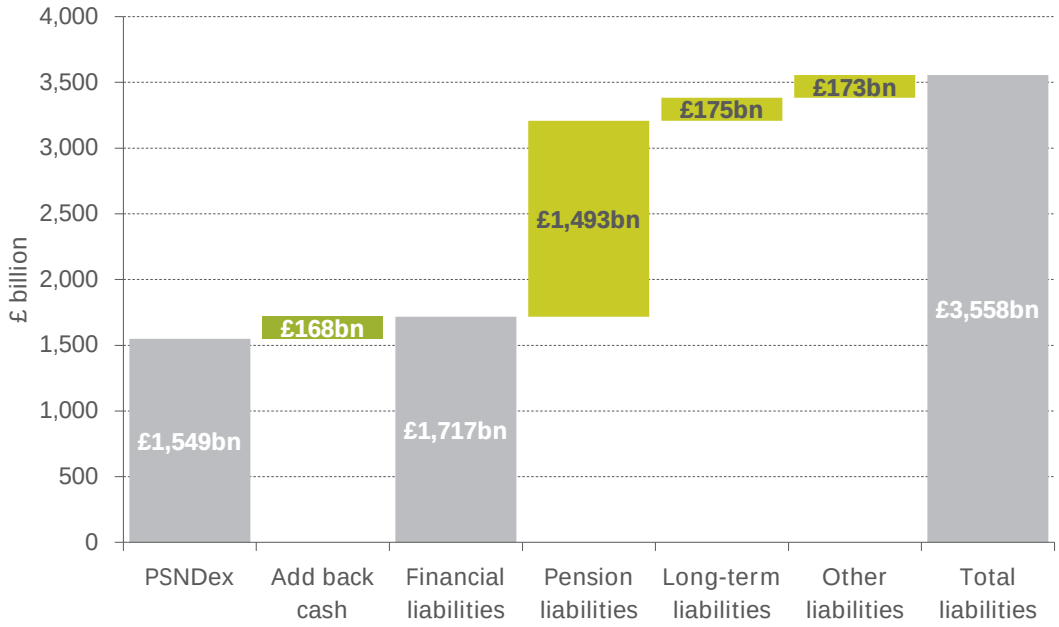
[2] Excluding one-off gains and losses in 2010–11.

assets of £27 billion, less a one-off reduction in pension liabilities of £126 billion in 2010–11 (see Section 4.3).

Differences with public sector net debt

Figure 4.5 summarises how public sector net debt of £1,549 billion at 31 March 2015 differs from total liabilities of £3,558 billion at the same date.

Figure 4.5. Public sector net debt versus total liabilities at 31 March 2015, £ billion



Source: HM Treasury, Whole of Government Accounts 2014–15, updated for changes in reported public sector net debt.

After adding back cash and other liquid financial assets and including other financial liabilities, the most significant difference relates to liabilities for public sector pensions. This is followed by long-term liabilities and other liabilities as discussed below.

Categorising liabilities

Liabilities in the balance sheet can be categorised as shown in Table 4.3, which compares the position at 31 March 2015 with that of five years previously. In total, liabilities have grown by substantially more than the 3.6% average increase in the size of the economy over the same period.

The largest category is financial liabilities, which are set out in Table 4.4.

Financial liabilities include government securities issued to external investors, Bank of England deposits owed to banks and other financial institutions (including quantitative easing related balances) and currency in circulation, as well as the debt of other public bodies. These are discussed in more detail in Chapter 9.

Public sector pension obligations are examined in more detail in Section 4.3. In the WGA, these are presented net of pension fund investments. This is because pension funds are ring-fenced and cannot in the normal course of events be used for any purpose other than for paying pensions.

Table 4.3. Change in total liabilities over the five years to 31 March 2015

	Mar 2010 (£bn)	Mar 2015 (£bn)	Increase (£bn)	Annualised increase (%)
Financial liabilities	1,094	1,717	623	9.4%
Pension liabilities	1,135	1,493	358	5.6%
Long-term liabilities	102	175	73	11.4%
Trade creditors and other liabilities	146	173	27	3.5%
Total liabilities	**2,477**	**3,558**	**1,081**	**7.5%**

Source: HM Treasury, *Whole of Government Accounts 2014–15*; ICAEW calculations.

Table 4.4. Financial liabilities at 31 March 2015

	2009–10 (£bn)	2009–10 (% of GDP)	2014–15 (£bn)	2014–15 (% of GDP)
Government securities	683	44%	1,050	56%
Bank of England deposits	206	13%	355	19%
National Savings & Investments	99	6%	125	7%
Loans and other debt	56	4%	123	7%
Bank notes in circulation	50	3%	64	3%
Financial liabilities	**1,094**	**70%**	**1,717**	**92%**

Note: Government securities exclude gilts owned by central government and by the Bank of England.

Source: OBR; HM Treasury, Whole of Government Accounts 2014–15 and 2013–14.

Long-term liabilities are discussed in more detail in Section 4.4. They include obligations to pay for nuclear decommissioning, for clinical negligence funds, pensioners helped by the Pension Protection Fund, and for other long-term or uncertain liabilities.

Other liabilities include tax refunds due, amounts payable to suppliers, accrued expenditure and payments received in advance. They also include amounts due under finance leases and PFI contracts.

International comparisons

The UK is one of the world leaders in public sector financial reporting. It led the way with resource accounting in the 1990s and is currently the only country that prepares a set of integrated financial statements that encompass the entire public sector, including devolved administrations and local government.

Table 4.5. Assets and liabilities by country

Country	Scope	Date	Assets	/GDP	Liabilities	/GDP
UK	Whole public sector	31 Mar 2015	£1,455bn	79%	(£3,558bn)	(191%)
UK	Central government	31 Mar 2015	£1,316bn	71%	(£2,830bn)	(152%)
Australia	Federal government	30 Jun 2016	A$594bn	36%	(A$1,008bn)	(61%)
Canada	Federal government	31 Mar 2016	C$434bn	22%	(C$1,060bn)	(54%)
France	Central government	31 Dec 2015	€982bn	45%	(€2,097bn)	(96%)
New Zealand	Central government	30 Jun 2016	NZ$293bn	116%	(NZ$197bn)	(78%)

Note: UK central government excludes the Bank of England and public corporations. Australia, Canada and New Zealand include their respective central banks and national public corporations within central government.

Source: HM Treasury, Whole of Government Accounts 2014–15; Commonwealth of Australia, Consolidated Financial Statements 2015–16; Government of Canada, Annual Financial Report 2015–16; République Française, Compte général de l'État 2015; Government of New Zealand, Financial Statements 2015–16.

Other pioneers are Australia, Canada, France and New Zealand, which each prepare integrated financial statements covering their central governments (federal governments in the case of Australia and Canada), with New Zealand publishing its financial statements within three months of the end of the financial year.

Some of these countries have gone further than the UK, by using monthly or quarterly internal financial reports prepared on an integrated basis to support management of their public finances.

A number of other countries have announced plans to adopt integrated financial statements for their central governments. These include a number of EU members such as Austria, Cyprus, Portugal and Spain; South American countries such as Brazil, Chile and Peru; and Asia-Pacific nations such as China, Indonesia, Japan, Malaysia and Vietnam. Adoption is likely to take many years, so it is likely to be some time before the majority of countries start to produce integrated financial statements and wider comparisons can start to be made.

In comparing the UK with other countries, as in Table 4.5, it is important to note that there are significant structural differences, with Australia, Canada and France each having state or regional governments that deliver a substantial proportion of public services in those countries that in the UK is delivered or funded by central government.

In addition, the accounting standards used are not the same, which may result in differences in certain areas. France has adopted accruals-based International Public Sector Accounting Standards (accruals-based IPSAS), which differ in a number of areas from IFRS, while Australia prepares its financial statements under Australian Accounting

Standards, which are almost identical to IFRS. Canada and New Zealand apply their own public sector accounting standards, which are similar to but not the same as accruals-based IPSAS.

While the liabilities of France appear to be lower as a proportion than the UK's, this is because the numbers are not comparable, in particular because France does not include public sector pension obligations in its balance sheet for central government institutions. The notes to the financial statements estimate the liability to be €1,723 billion or 78% of GDP; if these were included, France's central government liabilities would increase to €3,802 billion or 174% of GDP, which is greater than the central government liabilities for the UK.

Australia, Canada and New Zealand each record pension obligations in their balance sheets at 19%, 12% and 5% of GDP for their central governments respectively. This compares with 24% of GDP for the UK civil service, armed forces and other public bodies' pension schemes within the UK central government balance sheet.

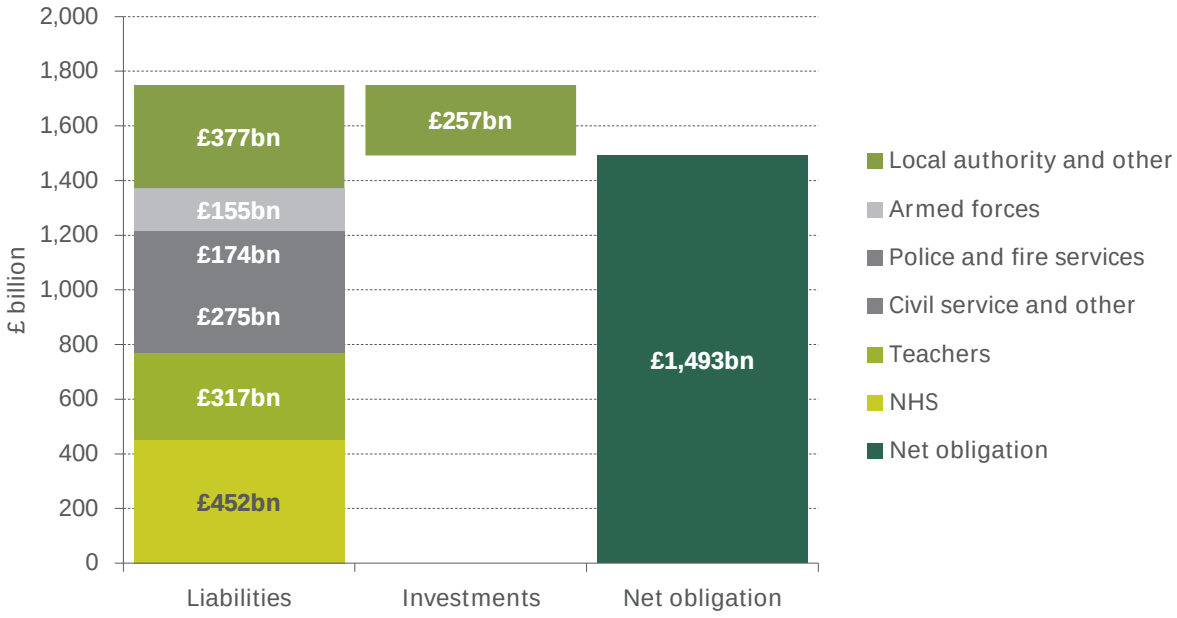
4.3 Pension liabilities

Net pension obligations at 31 March 2015

The net pension obligation reported in the WGA at 31 March 2015 was £1,493 billion, comprising unfunded schemes with gross liabilities of £1,373 billion and schemes with pension funds with gross liabilities of £377 billion less investments of £257 billion, as shown in Figure 4.6.

The net obligation for schemes with pension funds of £120 billion comprises £106 billion for local authority employees and former employees, and £14 billion for public bodies that have established funded pension arrangements, such as the Bank of England, BBC, House

Figure 4.6. Net pension obligations 2014–15, £ billion



Source: HM Treasury, Whole of Government Accounts 2014–15.

of Commons and Network Rail. It also includes liabilities for central government employees who (for various reasons) are members of local authority pension schemes.

The gross liability of £1,750 billion was equivalent to 94.1% of GDP at 31 March 2015, reducing to 80.3% of GDP when the £257 billion of investments are taken into account.

These liabilities relate to the defined benefit pension arrangements of public sector employees. They do not include state pensions or associated benefits that do not arise from contractual rights.

Box 4.3. Illustrative actuarial calculation – 'Sarah'

To illustrate the effect of discounting, consider an employee called Sarah on a salary of £24,500 at 31 March 2015.

She has worked for the NHS for five years and is expected to retire in 20 years' time when her salary will have reached £56,000 (assuming promotions and salary increments as well as annual increases). Reforms to public sector pensions from 1 April 2015 mean that her pension will be based on her final salary for the first five years of service and a career average for the subsequent 20 years. Her contributions are deducted from her salary and her employer has made contributions too, but these have all been spent by the government rather than invested.

Sarah expects to retire on a pension of £17,900 a year, assuming she works until the normal pension age and achieves her forecast final salary. If she lives for 25 years in retirement and has no surviving spouse, the NHS will pay her a total of approximately £588,000 for her pension.

Table 4.6 shows how, using a nominal discount rate of 4.0%, that obligation to pay Sarah's pension in retirement is considered to be worth £167,000 in 'today's money'. £134,000 of that amount relates to future service and so £33,000 is recorded as a liability in the WGA, the element relating to her service in the NHS to date. Each year going forward, the NHS will accrue for the entitlement earned by Sarah that year, together with an interest charge (unwinding the discount) on the liability recorded in previous years. If everything transpires in line with the assumptions made, the liability will continue to grow to match the eventual pension payments.

In reality, the assumptions will need to change as time passes and better information becomes available. For example, if Sarah were to live an extra year, the £6,000 pension she would receive in 46 years' time would require an additional £1,000 to be added to the liability if known about today. A change in the discount rate (from the 1.8% real rate assumed at 31 March 2015) would also have a significant effect. For example, using a real discount rate of 2.8% would reduce the value of the liability by around £8,000, while a real discount rate of 0.8% would increase it by around £11,000.

Table 4.6. Illustrative actuarial calculation

	Accrued entitlement (£)	Future service (£)	Total (£)
5 years x 1/80 accrual rate x Final salary of £56,000	**3,500 per year**	-	3,500 per year
20 years x 1/54 accrual rate x Average salary over next 20 years of £38,900	-	14,400 per year	14,400 per year
Pension payable in first year of retirement (increasing subsequently by CPI of 2.2%)	**3,500 per year**	14,400 per year	17,900 per year
Total pension paid over 25 years of retirement (total cash payments)	**115,000**	473,000	588,000
Discounted value in today's money (using a nominal discount rate of 4.0%)	**33,000**	134,000	167,000

Source: ICAEW calculations.

Pension obligations are calculated on an actuarial basis, taking an estimate of the pensions payable in the future based on service to date and discounting those future cash flows to arrive at a current value in today's money. An illustrative example is provided in Box 4.3.

As pension payments will extend over a number of decades, the liability calculations are very sensitive to the assumptions adopted, especially in the weighted average discount rates used. In reality, a range of potential estimates could be calculated, but for accounting purposes a single number is selected to provide a current value of the obligation at a point in time.

For the unfunded pension schemes, a weighted average real discount rate of 1.8% was used at 31 March 2015. Together with a long-term inflation assumption of 2.2%, this was equivalent to a nominal discount rate of 4.0%.

The main demographic assumption is longevity, i.e. how long employees are expected to live for in retirement, which is one of the most significant drivers of the level of pension payments. Other key assumptions include the expected annual level of salary increases over the course of a career, including promotions (4.2% at 31 March 2015), the expected likelihood of leaving before retirement age and the proportion of pensioners expected to be survived by spouses.

The funded schemes used a similar approach, with assumptions specific to each scheme concerned, including weighted average nominal discount rates at 31 March 2015 in a range from 3.0% to 4.4%.

The various economic and demographic assumptions used are based on the recommendations of the Government Actuary's Department or, in the case of some of the funded pension schemes, private sector actuaries. They use their own professional judgement in deciding on the assumptions to use, taking into account market information and the views of economic forecasters. In particular, they will have taken economic

forecasters' views and market expectations of long-term inflation of 2.0% into account in arriving at the 2.2% assumption for inflation over the period of pension payments that they used in the calculation as at 31 March 2015.

When calculating a pension liability for accounting purposes, actuaries are required to use a weighted average discount rate based on the returns available from investing in corporate bonds. This ensures the pension liabilities of different employers are prepared on a consistent basis at a point in time, irrespective of the investment strategy of each scheme or, in the case of unfunded schemes, whether there are any investments at all.

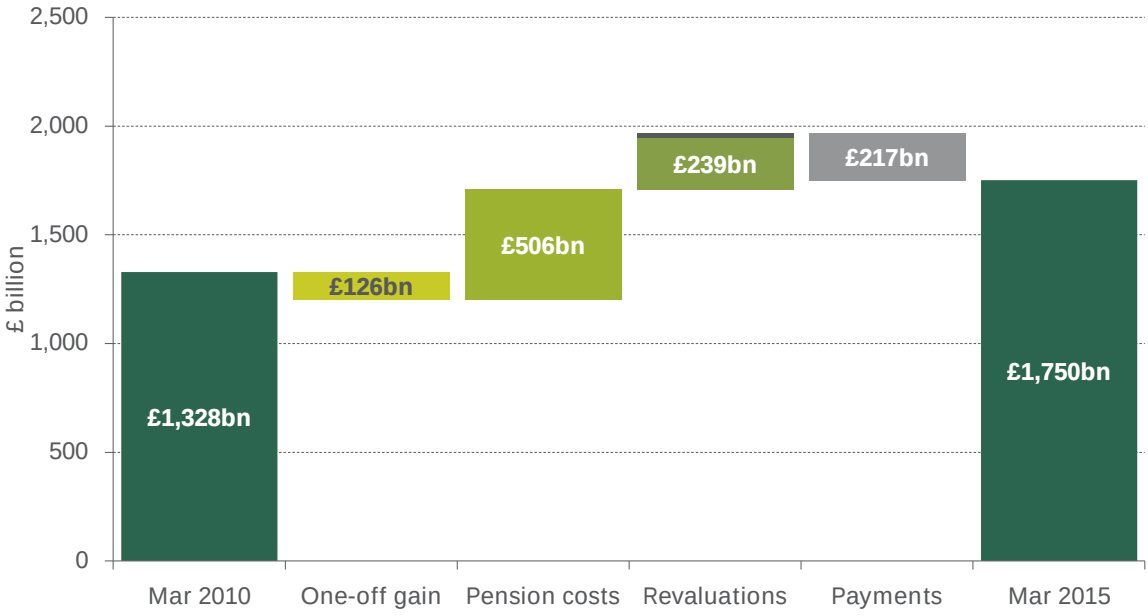
Alternative approaches would result in significantly different values for pension liabilities. Using lower 'risk-free' rates based on government bond rates would result in a significantly higher number for all the liabilities. For local authority and other pension plans with investments, rates based on expected investment returns would result in a lower number for their pension liabilities, in line with how actuaries assess the level of funding required for those schemes.

Growth in pension liabilities

Subject to actuarial recalculations, pension liabilities are expected to grow as the combination of new pension entitlements earned and the interest on the liability (the unwinding of the discount) significantly exceeds the pensions being paid out each year.

Figure 4.7 summarises the increase in gross pension liabilities over the five years between 31 March 2010 and 31 March 2015. It highlights how the gross liability was reduced by the one-off change to pension entitlements in 2010–11 as a consequence of changing from RPI to CPI for pension increases, before increasing over the following five years as new pension entitlements of public sector employees of £39 billion a year on average and £62 billion a year in interest charges were recorded.

Figure 4.7. Gross pension liabilities between 2010 and 2015, £ billion (nominal)



Source: HM Treasury, Whole of Government Accounts 2010–11 through 2014–15.

Recalculations of the pension liability by the actuaries each year resulted in increases in the liability totalling £239 billion, while £20 billion was also added for pension schemes reclassified into the public sector during the period (including, for example, Network Rail).

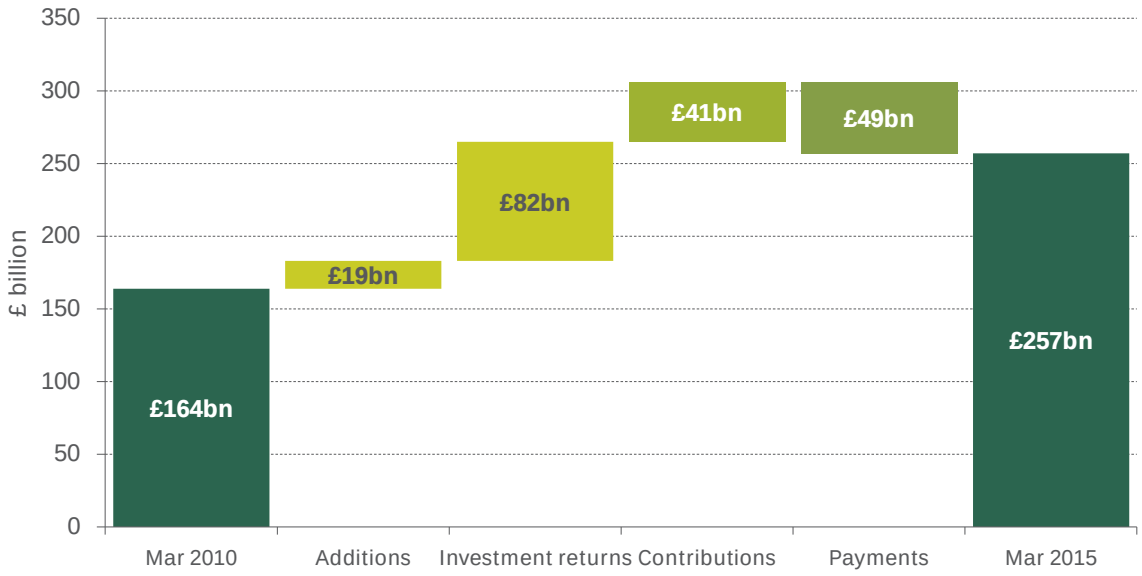
The disclosures in WGA do not make it clear how much of the £239 billion relates to changes in the discount rate as opposed to changes in other assumptions such as longevity, so it is not possible to isolate how much the liability might change for different discount rates. This is something that ideally should be included in improved narrative disclosures.

The liability was reduced as pensions were paid over the five years amounting to £217 billion, or £43 billion a year on average.

The overall increase in the gross liabilities over this five-year period was £422 billion, of which £325 billion related to unfunded pension schemes and £97 billion to funded pension schemes.[3]

The latter was offset by gains in the values of investments as shown in Figure 4.8, which meant that the net liabilities of local authority and other funded schemes at 31 March 2015 were just £4 billion higher than they were five years previously.

Figure 4.8. Market values of pension fund investments between 2010 and 2015, £ billion



Note: Additions are for schemes reclassified into the public sector. Assets exclude £29 billion in investments cashed in by the government in 2012–13 when it converted the legacy Royal Mail pension scheme into an unfunded scheme.

Source: HM Treasury, Whole of Government Accounts 2010–11 through 2014–15.

[3] Net movement in unfunded pension liabilities was £354 billion, comprising £325 billion increase in liabilities and £29 billion from cashing in Royal Mail pension scheme investments, which as a consequence became an unfunded scheme.

Risks related to public sector pensions

Public sector pensions entail two principal sets of risks to the government.

First, by offering defined benefit pension arrangements, the government has exposed itself to significant economic and demographic risks, which can significantly affect the eventual cash payments that will be paid out in the future. Perhaps most significantly, increasing longevity has been a major factor in driving higher costs for defined benefit pension arrangements in both the public and private sectors.

This contrasts with defined contribution pension arrangements, where risks sit with individual employees and employers have much greater certainty about the financial cost.

For example, the Commonwealth of Australia has recently closed its defined benefit pension schemes to new members and is now offering funded defined contribution pension arrangements to federal employees, with a minimum employer contribution of 15.4%. As a consequence, the Australian federal government will gradually reduce its exposures to defined benefit pension arrangements over the next few decades.

The second set of risks relate to the choice of investment strategy to fund the pensions in payment.

For central government's unfunded schemes, it has chosen a 'pay as you go' approach, which means it is reliant on tax revenues growing sufficiently to provide the cash necessary to pay for the pensions when they are due.

This contrasts with local authorities and other public bodies with funded pension schemes, which have chosen to invest now to provide the funds needed to pay pensions in the future rather than (in effect) use that money to reduce debt. As investment returns are expected to be greater than the cost of debt, this should save money over the long term, but at the risk of having to increase payments into the schemes should investment performance disappoint.

To illustrate this, local authority and other funded pension schemes have benefited from investment returns of £82 billion over the last five years, which is substantially greater than the £20 billion or so of debt interest that would have been saved had those schemes switched to a 'pay as you go' approach at the start of that period.

Pension reforms

There have been two major changes to the pension arrangements of public sector employees in recent years. These include measures adopted to cut the generosity and therefore improve the affordability of pensions, including the implementation of recommendations made by the Hutton Review.[4]

First, there was a cut in the amount payable to pensioners, by indexing increases in pensions and pension entitlements to CPI instead of RPI. This was announced in June 2010 and implemented from April 2011. It had the result of reducing the value of existing

[4] The Hutton Review changes are discussed in J. Cribb and C. Emmerson, 'New public service pensions remain relatively generous despite cuts', IFS Observation, March 2015, https://www.ifs.org.uk/publications/7680.

pension entitlements by an estimated £126 billion, in addition to reducing the value of future entitlements earned thereafter.

Recommendations from the Hutton Review were implemented for the majority of public sector employees on 1 April 2015. These included linking the normal pension age to the state pension age for many employees (which is scheduled to increase over time), changing from final salary to career average pension as the basis for the calculation of pensions payable, and increasing the pension contributions required from employees.

Of these, increasing the normal pension age and increasing pension contributions (a cut in take-home pay for the individuals concerned) are the main changes that will reduce the cost of pensions to the government. However, the switch from final salary to career average pensions from 1 April 2015 for the majority of public sector employees does not save money, as there has been an offsetting increase in accrual rates.

This is illustrated by the example in Box 4.3 earlier, where Sarah should receive a £400 higher annual pension as a consequence of the switch to a career average arrangement with a faster accrual rate. However, future salary increases above the expected level would benefit Sarah by less than if she had been able to continue with a final salary arrangement over the next 20 years.

These changes retained existing entitlements that employees had earned up until 31 March 2015, which remain linked to final salaries, (and also did not affect the future accrual of those already close to their normal pension age) and so there is not likely to be a significant gain or loss from these changes reported when the WGA for 2015–16 are published, although increases in pension contributions should reduce the net cost recorded in future years.

4.4 Long-term liabilities, contingent liabilities and commitments

Long-term liabilities

As set out in Table 4.7, long-term liabilities at 31 March 2015 were 71% higher than five years earlier, or 45% in comparison with the size of the economy.

Table 4.7. Provisions for liabilities and charges at 31 March 2015

	2009–10 (£bn)	2009–10 (% of GDP)	2014–15 (£bn)	2014–15 (% of GDP)
Nuclear decommissioning	57	3.7%	83	4.5%
Clinical negligence	16	1.0%	29	1.5%
Private sector pensions	9	0.6%	24	1.3%
Tax refund claims	4	0.3%	15	0.8%
Litigation and other	16	1.0%	24	1.3%
Long-term liabilities	**102**	**6.5%**	**175**	**9.4%**

Source: HM Treasury, Whole of Government Accounts 2014–15 and 2010–11.

Although technically described as 'provisions for liabilities and charges', we have chosen to describe them as long-term liabilities to avoid the confusion that the use of the word 'provisions' can sometimes cause. It is important to realise that there is no requirement for there to be any assets set aside to cover the payments of these liabilities and they are only provided for in the sense that a liability has been recognised in the balance sheet.

This does not mean that there cannot be any such assets – in the case of the nuclear decommissioning provision, there is an asset of £6 billion for contributions due from third parties, while the Pension Protection Fund has a net £22 billion portfolio of assets to cover its obligations, approximately £3 billion more than its liabilities of £19 billion. These are explained in more detail below.

All of the provisions are discounted to take account of the timing of the eventual payments, based on guidance issued by HM Treasury each year for all liabilities other than pensions (as discussed in Section 4.3). At 31 March 2015, the real discount rates used were –1.5% for payments due within five years, –1.0% for payments due in five to ten years and +2.2% for payments due in more than 10 years.

Nuclear decommissioning

The long-term liability for nuclear decommissioning differs from most of the other long-term liabilities in that changes in the provision primarily arise from revisions of estimates rather than from newly-created liabilities.

Some of the growth in this liability is because the remaining fleet of nuclear power plants add to the stockpile of nuclear waste that needs to be disposed of. This is a relatively small proportion of the overall costs as the overwhelming majority of the provision relates to the requirement to remediate historic irradiation of nuclear facilities and plants.

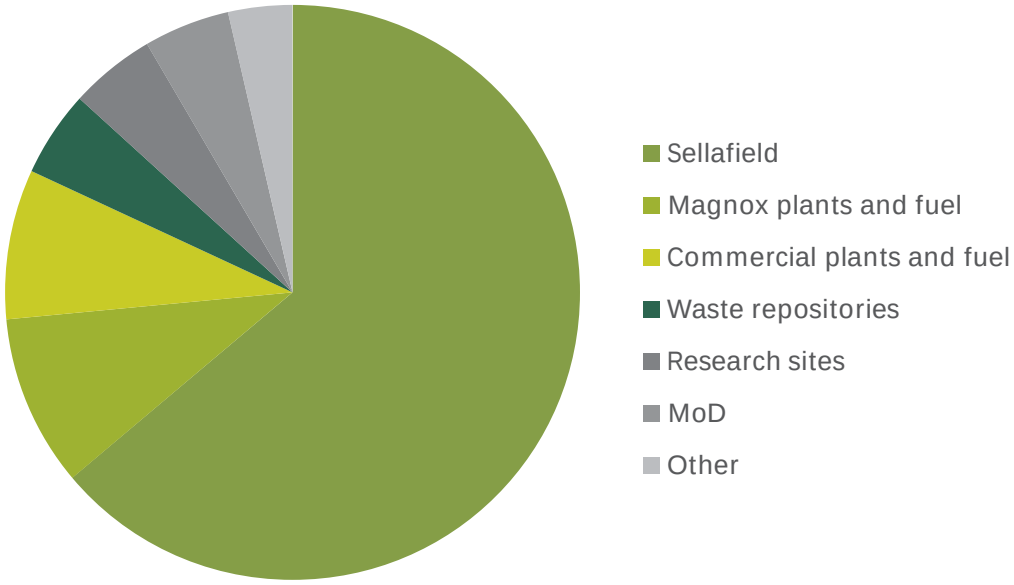
The programme to decommission plant and equipment on each designated nuclear licensed site and return the sites to pre-agreed end states is expected to take until 2137 to complete. As a consequence, the estimates for the costs that will be incurred over that time are subject to significant revision as new information becomes available and assumptions are updated.

As can be seen from Figure 4.9, the largest element of the nuclear decommissioning provision relates to the Sellafield site where the UK nuclear industry was developed. This was £53 billion out of the total £83 billion liability at 31 March 2015, reflecting the complexity and scale of the clean-up required for that particular site. Cash spending on nuclear decommissioning over the five years from 31 March 2015 is expected to be approximately £3.5 billion a year, rising in line with inflation.

The government established the Nuclear Decommissioning Authority (NDA) on 1 April 2005, with the responsibility for planning and delivering the majority of the clean-up effort required, remediating contamination arising from the past operation of nuclear facilities in the UK.

The NDA element of the provision has increased from £24 billion to £70 billion over the 10 years to 31 March 2015 as it has made progress in identifying the extent of the decommissioning that will be required over the next century or so.

Figure 4.9. Nuclear decommissioning provision at 31 March 2015



Source: HM Treasury, *Whole of Government Accounts 2013–14*, updated for changes in 2014–15.

Over the next 20 years, the NDA aims to make significant progress in decommissioning nuclear facilities and dealing with nuclear waste. This includes plans to defuel and decommission the fleet of Magnox power stations, putting them into a 'care and maintenance' phase, as well as confirming the location for a long-term geological disposal facility. It also aims to complete decommissioning at two research sites, make significant progress towards decommissioning Dounreay and make further progress in high hazard reduction, principally at Sellafield.

Although this work may well lead to increases in the provision as new information is obtained (in particular at Sellafield), there is an opportunity to reduce the provision if new techniques and equipment can be developed to reduce the cost of the work required.

Because of the significant uncertainties relating to the estimates for nuclear decommissioning provision, the Comptroller & Auditor General includes an 'emphasis of matter' in his audit report each year to highlight the uncertainty in this number.

A substantial increase in the amounts recorded for these and other long-term liabilities is expected to be seen in 2015–16, as HM Treasury has now concluded that a real discount rate of –0.8% should be applied to payments due in more than 10 years at 31 March 2016. This is a substantial change from the +2.2% real rate used at 31 March 2015 and, as a consequence, the nuclear decommissioning liability is expected to increase by around £100 billion in the forthcoming WGA for 2015–16.[5]

Although some volatility in the quantification of long-term liabilities recorded on a discounted basis is to be expected, this scale of change is exceptional. This is where better

[5] £91 billion of this increase has been reported in the Department for Energy & Climate Change Financial Statements 2015–16.

narrative reporting in the forthcoming WGA for 2015–16 could really help, in this case by explaining the rationale adopted for the selection of discount rates for use in the WGA and in departmental accounts, particularly in the case of very long-term liabilities such as those for nuclear decommissioning.

Clinical negligence

The provision for clinical negligence of £29 billion is an estimate of the future costs expected to be paid out by the NHS in England, Scotland, Wales and Northern Ireland for claims relating to medical procedures carried out up to 31 March 2015.

As many claims are not paid out immediately but instead involve payments over many years, the liability includes determined claims as well as claims that are considered likely to be determined in the claimant's favour. The liability is calculated based on assessing the likely costs of each claim, discounted to current prices, and applying a probability to take account of the potential for a successful defence. It also includes an estimate for incidents that have occurred but had not been reported.

The liability does not include a further £14 billion of claims that are less likely to be successful. These are reported as a contingent liability.

The NHS Litigation Authority in England received 11,497 new clinical negligence claims and 4,806 other claims during 2014–15, which resulted in £1.6 billion in new provisions during the year in England. A small number of cerebral palsy claims make up the majority of the claims by value. Revisions to the costs of previous claims and an increase in the estimate for anticipated claims not yet received added a further £2.2 billion.

Payments during the year amounted to £1.2 billion; however, payments were expected to increase to £1.9 billion a year in 2015–16 and to an average of £2.2 billion for the four years after that, plus inflation as well as claims for subsequent years.

Until about 20 years ago, most claims were settled through one-off payments. This approach had a number of drawbacks, as sometimes the amount paid would be insufficient to pay for a lifetime of care, while on other occasions the full amount would not be needed, an unnecessary cost to the taxpayer. The current policy is to pay claims over time, benefiting claimants by assuring them that lifetime costs and damages will be covered and ensuring the NHS does not overpay in up-front settlements. This policy has therefore had the consequence of reducing the funding needed to pay out cash settlements, reducing debt at the same time as increasing the clinical negligence liability.

The £3.8 billion charge recorded by the NHS Litigation Authority in 2014–15 was equivalent to almost 4% of NHS England's net expenditure that year, a substantial cost. On 19 December 2016, the National Audit Office announced that it is undertaking a study into how clinical negligence is managed by NHS trusts. The work will look at the underlying causes of rising clinical negligence liabilities and the work of the Department of Health, the NHS Litigation Authority, NHS trusts and others to manage this cost. The scope of the study will include how past incidents are investigated, actions taken to reduce the harm that leads to clinical negligence claims as well as efforts to improve the response when things do go wrong by encouraging transparency and wider forms of redress for affected patients.

Although improving the quality of medical care is probably the most important way of reducing the cost of new claims, it might be possible to reduce the taxpayer's exposure to such through changes in financial arrangements, in particular by reducing the amounts that are paid in legal fees. One possible approach that has been discussed is the possibility of establishing 'no fault' insurance arrangements for planned medical procedures, either through private insurance or through a comprehensive public scheme as in New Zealand, with a consequent substantial saving in legal fees and court costs.

Private sector pensions

The Financial Assistance Scheme was set up in 2004 to protect the interests of members of private sector defined benefit occupational pension plans falling into difficulty after 1997 – for example, in the event of the insolvency of the sponsoring employer. It was succeeded by the Pension Protection Fund, which addresses schemes that get into difficulty from 6 April 2005 onwards.

The Financial Assistance Scheme and the Pension Protection Fund had liabilities of £3 billion and £6 billion respectively at 31 March 2010, which had increased to £5 billion and £19 billion respectively at 31 March 2015.

The Financial Assistance Scheme's liability was supported by assets of only £0.1 billion at 31 March 2015, as £1 billion of pension fund investments were cashed in and transferred to central government. This is in contrast to the Pension Protection Fund, which retains the assets of the pension plans it rescues and generates investment growth from them to support the obligations it acquires. At 31 March 2015, it had net investments of £22 billion, £3 billion in excess of its liabilities.

These schemes are distinct from public sector pension arrangements and are accounted for under slightly different accounting rules, in particular there is no netting off of the associated assets.

The Financial Assistance Scheme covers 166,000 individuals from 1,030 plans; its liabilities are equivalent to an average of £30,000 per individual. The Pension Protection Fund has taken over responsibility for 112,000 current pensioners and 109,000 future pensioners from 799 private sector plans; the associated discounted liability of £18 billion at 31 March 2015 is equivalent to an average liability of £80,000 per individual. A further £1 billion liability is recorded for 111 plans that are considered likely to transfer to the Pension Protection Fund in the future.

As the Pension Protection Fund covers 11 million members of defined benefit pension plans throughout the UK, it has the potential to expand significantly in the event of more sponsoring employers getting into financial difficulty, a significant unquantified risk. Although designed to be funded through levies on employers, the government could be exposed in certain circumstances.

Tax refunds and other long-term liabilities

Just over half of the £15 billion liability for tax refunds relates to repayments due on the decommissioning of oil and gas fields, while the balance relates to disputed tax refund claims that are likely to have to be settled. Both of these are expected to reduce the level of tax revenue collected over the next few years.

Other provisions of £24 billion at 31 March 2015 (1.3% of one year's GDP) included a wide range of provisions across all parts of the public sector. These included liabilities for injuries, criminal injuries compensation, legal costs, compulsory purchase compensation, pensions maladministration, claims in respect of structural damage and diminution of value of properties affected by transport schemes, as well as compensation payments for termination of employment.

Contingent liabilities, contractual commitments and other obligations

Table 4.8 summarises potential liabilities and contractual commitments as at 31 March 2015 as disclosed in the WGA.

Table 4.8. Disclosed obligations and commitments at 31 March 2015

	(£bn)	(% of GDP)	
Contingent liabilities	76	4.1%	Potential liabilities
Remote contingencies	65	3.5%	Very unlikely potential liabilities
Capital commitments	42	2.3%	Contracted capital investment
Operating lease obligations	19	1.0%	Commitments to lease assets
Future services under PFI contracts	109	5.9%	Committed outsourced services
Other financial commitments	37	2.0%	Mainly IT and outsourced services

Source: HM Treasury, Whole of Government Accounts 2014–15.

Quantifiable potential liabilities, including guarantees given to support exports and infrastructure projects as well as disputed legal claims, were classified between contingent liabilities that are unlikely but possible and remote contingencies that are unlikely to have to be paid. The WGA also highlight a number of contingencies that cannot be quantified – for example, relating to government's provision of terrorism reinsurance or assurances provided over the safe operation of nuclear power plants.

Contractual commitments for goods or services to be delivered in the future, including capital purchases, rented assets (in addition to those for finance leases and PFI contracts recorded as liabilities) and for other contracts including outsourced services.

The above amounts exclude interest (or unwinding of discounts) on liabilities, including on debt, pensions and long-term liabilities, which together will cost around £100 billion a year.

4.5 Conclusion

Now in its sixth year, the WGA provides an important insight into the public finances and shines a light on significant areas of government activity such as clinical negligence. We consider it a vital tool for holding the Treasury and the Government to

account but there is more to do to make the WGA more useful to the Government as well as to Parliament and the public.

Public Accounts Committee, *The Government Balance Sheet*, 14 September 2016

Improving transparency and understanding …

Recent UK governments are to be congratulated on their commitment and achievements to date in implementing WGA.

The WGA are a world-leading development in public sector financial reporting, which have provided a step change in the ability of the government to understand and manage its financial position. The improved transparency provided by the WGA has also helped Parliament to scrutinise the effects of government policy better, aiding the work of the Public Accounts Committee and other parliamentary committees in holding the government to account.

However, there is much still to do. The WGA's effectiveness would be significantly improved if they were prepared sooner, closer to the three months taken by the New Zealand government and comparable private sector organisations than to the 14 months it took to prepare the 2014–15 WGA.

Narrative disclosures also need to be improved, applying at least the standards that government expects private sector organisations to comply with. These standards require the presentation of a fair, balanced and understandable assessment of financial position and prospects, measuring progress against objectives, future strategy and how risks are managed.

This was why it was disappointing that the latest WGA report took a significant step backward in terms of narrative disclosure, while the timing of publication (at the start of the campaign for the referendum over the UK's membership of the EU) meant that it passed with little press comment, despite showing a contrary position to the government's fiscal narrative.

It is therefore important that the government acts to improve the quality and timeliness of the WGA, including narrative disclosures. They have a real part to play in increasing transparency still further.

… helps improve decision-making

Improved transparency is not just helpful to those holding the government to account. Perhaps most importantly, a better understanding of the financial consequences of decisions helps policymakers to make better decisions in the first place.

By reporting both assets and liabilities, the WGA provide a more comprehensive way of understanding the financial consequences of past decisions than that provided by the National Accounts. In particular, the £3.6 trillion of public sector liabilities represents money that has already been 'spent', reducing the amounts that will be available to support public services or to invest in the economy in the future.

Being able to estimate the financial consequences of a decision before it is taken can only help improve the decision-making process, while lessons can be learnt from understanding the financial consequence of decisions that have already been taken.

Decision-making could be further improved by implementing monthly or quarterly internal financial reporting on a WGA basis. This would provide more immediate feedback on the financial consequences of decisions being made across the public sector.

In his two Budgets this year, there is an opportunity for the Chancellor to develop and articulate a clearer financial strategy – going beyond the current objectives of targeting reductions in the fiscal deficit and public sector net debt as a proportion of GDP, to address how the government intends to manage its wider assets and liabilities and ensure a robust set of public finances in the future.

5. UK health and social care spending

Daria Luchinskaya (Wales Public Services 2025), Polly Simpson (IFS) and George Stoye (IFS)

Key findings

The period between 2009–10 and 2014–15 saw historically slow increases in UK public spending on health, averaging 1.1% per year.

This was the lowest five-year growth rate since a consistent time series of health spending began in 1955–56. However, due to cuts to other services, health spending continued to increase as a share of public service spending.

NHS spending in England is set to increase by £11.6 billion between 2014–15 and 2020–21: more than the £7 billion increase pledged.

However, Department of Health (DH) spending – a wider measure of health spending in England – will increase by only £8.4 billion. This is because the non-NHS part of the DH budget (which includes the funding of education and medical research) will be cut by 20.9%.

Over the decade from 2009–10 to 2019–20, the population is growing and ageing, placing additional pressure on the health care system.

The extra NHS spending is enough to compensate the NHS for pressure created by a growing and ageing population over the next few years, but it does not account for other cost and demand pressures.

But looking at all DH spending rather than the NHS only, after adjusting for the ageing of the population, per-capita real spending will be lower in 2019–20 than in 2009–10. An additional £1.3 billion of DH spending would be required in 2019–20 just to maintain 2009–10 levels.

Real public spending on social care organised by English local authorities fell by 1.0% between 2009–10 and 2015–16. Within this, spending on adult social care fell by 6.4%, during a period when the population aged 65 and above grew by 15.6%.

Looking forward, the ability of councils to maintain 2015–16 levels of social care will depend on how much revenue is raised through council tax, and whether they want and can continue to protect social care relative to other services. Overall, it looks very challenging for councils to maintain per-adult social spending at current levels over the next few years.

The latest projections from the Office for Budget Responsibility (OBR) indicate substantial long-run spending pressures in health and long-term care. They suggest spending could rise from 8.0% of national income in 2021–22 to 14.7% by the mid 2060s.

These new estimates take account of both the ageing of the population and other cost pressures, and are more realistic than previous OBR projections which accounted only for demographic change. We have some big choices to make about how we deliver health and social care, and about the size and shape of the state.

5.1 Introduction

In 2015–16, the UK public sector spent £220.2 billion (2016–17 prices) on health, social care, and benefits to support people with disabilities and health conditions. This is equivalent to 11.5% of UK national income and 28.7% of total public spending. The majority, £140.6 billion (63.9%), of this was spent on health; £49.7 billion (22.5%) was spent on benefits[1] and £29.9 billion (13.6%) was spent on social care. While Chapter 6 looks at spending on disability and incapacity benefits, this chapter describes spending on health and social care.

The last six years have seen health spending rise slowly by historical standards. Despite this, the share of public service spending accounted for by health is at a historical high of 29.7% in 2015–16. This share has also increased at the same rate over the past few years as it did during the 2000s, when health spending was growing at a historically high rate. This is because the health budget has been protected from the cuts to public spending implemented since 2010. This is especially the case in England, where Department of

[1] This is broader than incapacity and disability benefits. It includes carer's allowance, industrial injuries benefits, and associated housing benefit.

Health (DH) spending grew by 9.0% in real terms between 2009–10 and 2015–16. The increase in health spending in England is larger than that seen in Scotland, Wales and Northern Ireland, where the respective devolved administrations made different decisions about health spending, resulting in real-terms growth between 2009–10 and 2014–15 of only 4.5% in Northern Ireland, and a real-terms freeze in health spending in Scotland and Wales over this period.

The National Health Service (NHS) settlement in the 2015 Spending Review was (and continues to be) surrounded by a great deal of debate. English NHS spending is set to increase in real terms by 11.6% between 2014–15 and 2020–21. This is more than is required to meet the government's commitment to provide the £7 billion (2016–17 prices) requested by NHS England Chief Executive Simon Stevens in 2014. The estimates below indicate that these increases should just about meet the additional spending required to meet demographic pressures. However, given increasing demand and cost pressures from other sources faced by NHS providers, it seems likely that calls for further funding increases (such as those seen at the time of the 2016 Autumn Statement) will continue.[2] It is also noticeable that NHS funding – to which the government's £7 billion commitment applies – will increase at the cost of other parts of Department of Health spending. As a result, the non-NHS part of the DH budget will fall by £3.2 billion (or 20.9%) between 2014–15 and 2020–21.

If the NHS has struggled with modest budget increases, the experience of social care funding has been markedly different over the last six years. In England, real-terms public spending on local-authority-organised social care has fallen by 1.0% since 2009–10. Some of this burden has been transferred to the NHS, with a growing share of spending funded by transfers from the NHS to local authorities (these made up 7.5% of public spending on social care organised by local authorities in 2015–16, and come at the cost of reducing NHS spending on other services). Ignoring these transfers, social care spending by local authorities from their own revenues has fallen by 8.4% in real terms over this period, with substantially bigger falls for adult social care.

While pressures exist for both health and social care funding in the short run, the long-term forecasts suggest that a steadily increasing share of national income will need to be spent on providing these services. New forecasts from the Office for Budget Responsibility (OBR), released in January 2017, indicate that rising demographic and cost pressures could result in 14.7% of national income needing to be spent on health and long-term care by 2066–67. This is around a third higher than the previous estimates, published in June 2015, though the reported increase reflects better recognition of likely cost pressures rather than any substantive change. As a result, policymakers must consider whether, and if so how, to fund these future increases, either through increased taxes or cuts to other spending.

In this chapter, we examine recent trends in health spending in the UK and social care spending in England. In Section 5.2, we set out trends in UK health spending and compare recent changes in spending with historical spending growth. We also compare spending since 2009–10 across England, Scotland, Wales and Northern Ireland. Sections 5.3 and 5.4 describe recent health and social care spending in England, respectively. For health

[2] See, for example, Nuffield Trust, Health Foundation and King's Fund, 'The Autumn Statement: joint statement on health and social care', November 2016, http://www.health.org.uk/sites/health/files/AutumnStatementHFKFNT.pdf.

spending, we examine the implications of the 2015 Spending Review for the DH and NHS England budgets and discuss short-term pressures on these budgets. Section 5.4 examines past and forecast changes to social care spending in England and considers how much additional spending would be required to meet demographic pressures. Section 5.5 sets out recent long-term forecasts from the OBR for spending on health and long-term care. Section 5.6 concludes.

5.2 UK public spending on health

The vast majority of public spending on health goes on medical services (95.2% in 2015–16).[3] This includes expenditure on the everyday running costs of the NHS, such as staffing costs and paying for drugs. It also includes expenditure on capital investments in NHS hospitals and technology. The remaining spending funds medical research (1.5% in 2015–16) and broader health services (3.2%), including training, education and public health initiatives. A more detailed breakdown of DH expenditure is presented in Section 5.3. It is important, however, to note that public health spending is a different measure from DH spending or NHS spending (see Box 5.1 later for a discussion on the differences between UK health spending, DH spending, and NHS England spending).

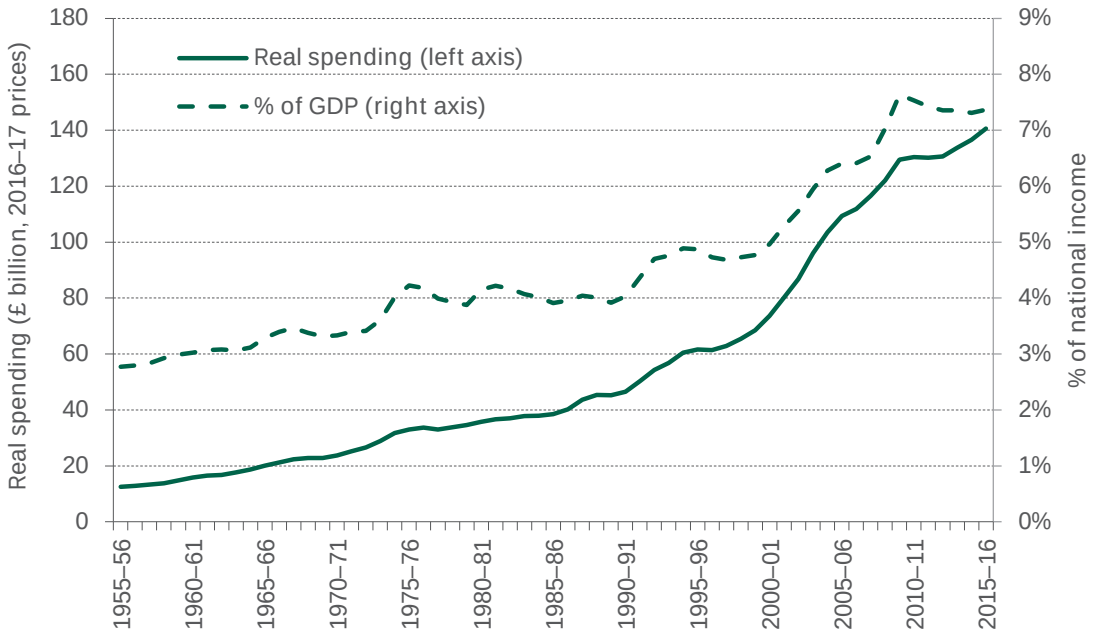
Figure 5.1 shows UK public health spending in each financial year between 1955–56 and 2015–16, both in real terms (after taking into account economy-wide changes in price levels over time) and as a share of national income. Real health spending has hugely increased over time, rising from £12.5 billion in 1955–56 to £140.6 billion in 2015–16 (2016–17 prices). This real increase has also easily outstripped growth in national income: health spending as a share of national income has risen from 2.8% to 7.4% over the same period. Spending peaked at 7.6% of national income in 2009–10, having increased sharply following the financial crisis and subsequent recession as national income fell (as opposed to a particularly large increase in health spending in absolute terms). Spending then fell back to its current level of 7.4%, despite real increases in health spending, following a recovery in national income.

Growth in spending has varied over time. Figure 5.2 shows the annual real growth rate in each financial year (deflating using a measure of economy-wide inflation). Real changes varied across individual years, ranging from an increase of 10.6% in 2003–04 to a cut of 1.8% in 1977–78. There have been only four years in the last 60 in which real cuts took place (1977–78, 1989–90, 1996–97 and 2011–12). With the exception of 1977–78, when health spending fell by 1.8% as part of widespread cuts to public expenditure (total managed expenditure fell in real terms by a total of 4.3% between 1976–77 and 1978–79[4]) following a loan from the International Monetary Fund (IMF), no annual cut in UK health spending has exceeded 0.5%.

[3] Percentages do not add to 100% due to rounding. Authors' calculations using table 5.2 of HM Treasury, *Public Expenditure Statistical Analyses 2016*, https://www.gov.uk/government/statistics/public-expenditure-statistical-analyses-2016.

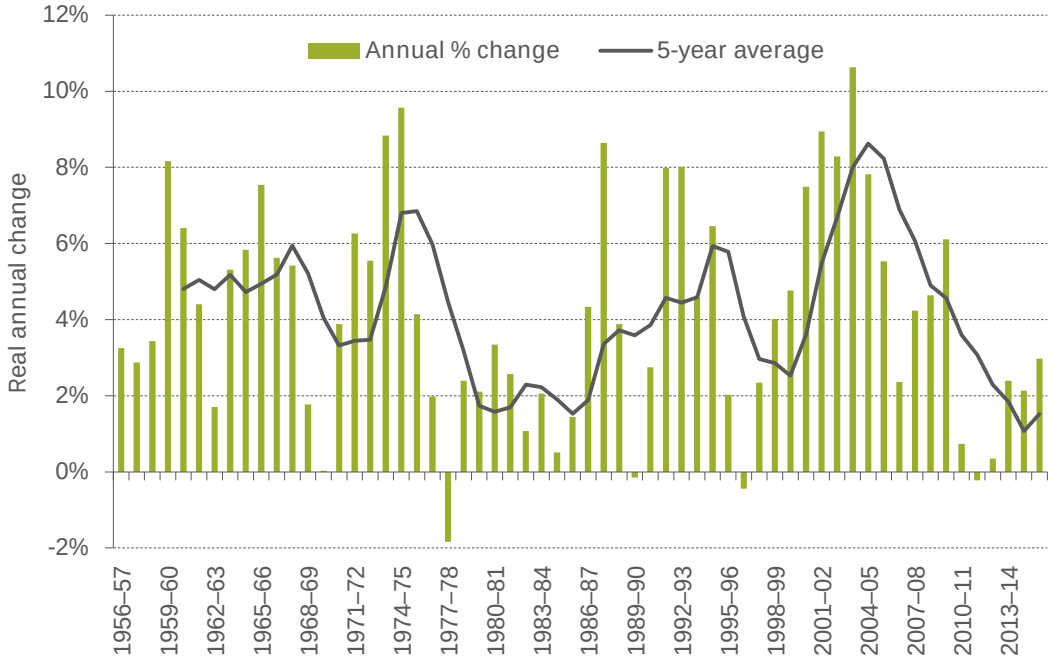
[4] Calculated using 2016–17 prices. GDP deflator and total managed expenditure series from HM Treasury *Public Expenditure Statistical Analyses 2016*.

Figure 5.1. Annual UK public spending on health in real terms (2016–17 prices) and as a percentage of national income, 1955–56 to 2015–16



Source: Nominal health spending data from Office of Health Economics (1955–56 to 1990–91) and HM Treasury *Public Expenditure Statistical Analyses* (1991–92 to 2015–16). Real spending refers to 2016–17 prices, using the GDP deflator from the OBR in November 2016.

Figure 5.2. Annual real growth rate in UK public spending on health, 1956–57 to 2015–16



Source: Authors' calculations using data from Figure 5.1. See Figure 5.1 for further details.

Table 5.1. Average annual real change in UK public spending on health

Period	Financial years	Average annual real growth rate
Whole period	1955–56 to 2015–16	4.1%
Pre 1979	1955–56 to 1978–79	4.4%
Thatcher and Major Conservative governments	1978–79 to 1996–97	3.4%
Previous Labour government	1996–97 to 2009–10	5.9%
Coalition government	2009–10 to 2014–15	1.1%

Source: Authors' calculations using data from Figure 5.1. See Figure 5.1 for further details.

While there have been annual fluctuations in growth, health spending has been characterised by prolonged periods of strong growth followed by periods of weaker growth. This is demonstrated by the cyclical pattern of the five-year average real growth rate shown in Figure 5.2. Table 5.1 also shows the average annual real growth rate during specific periods. Over the entire period since 1955–56, the average annual real growth rate was 4.1%. In the period between 1955–56 and 1978–79, annual real growth averaged 4.4%. This was followed by a period of lower growth, with an average real growth rate of 3.4% between 1978–79 and 1996–97 during the Conservative governments of Margaret Thatcher and John Major. Spending grew at a much quicker pace during the Labour governments of Tony Blair and Gordon Brown. This was in part due to explicit policies aimed at increasing health spending as a proportion of national income towards the average levels of health spending in other western European countries, following a statement by Mr Blair in 2000.[5] The Wanless Report in 2002 also recommended significant increases in health funding.[6] As a consequence, health spending grew by an annual average of 5.9% between 1996–97 and 2009–10 (a rise from 4.7% to 7.6% of national income), and an even stronger 6.6% in the decade following Mr Blair's pledge to increase spending (1999–2000 to 2009–10).

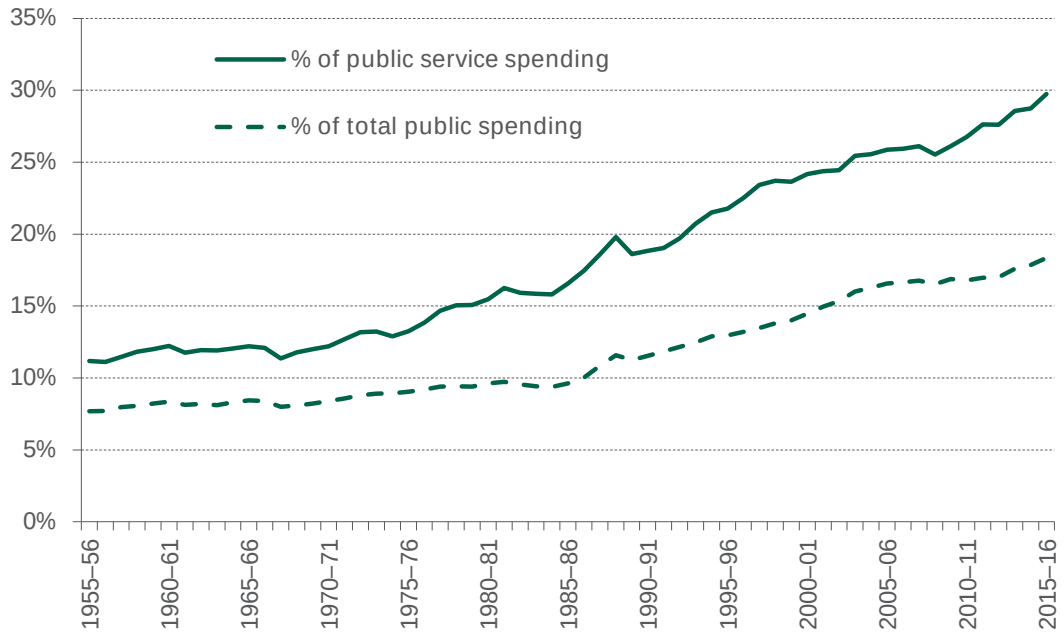
This period of large increases in health spending was followed by a period of relative budget restraint. Under the coalition government (2009–10 to 2014–15), health spending grew in real terms at an average annual rate of 1.1%. This was the lowest five-year growth rate since a consistent time series of health spending began in 1955–56 (the previous low being an average real growth rate of 1.5% between 1980–81 and 1985–86). However, these more modest increases occurred during a period in which large cuts were made to the spending of most other government departments, with health one of only three main areas of spending (along with overseas aid and schools) whose budget was protected from cuts.

The large real increases in health spending over time, and its relative protection during the recent period of austerity, have resulted in health accounting for an increasing share of public spending. Figure 5.3 shows UK health spending as a proportion of total public spending and public service spending (i.e. excluding spending on social security and debt

[5] Mr Blair initially made these comments when interviewed on the BBC in January 2000. The aim was then repeated in parliament on 19 January 2000 (*Hansard*, 19 January 2000, column 837).

[6] D. Wanless, *Securing Our Future Health: Taking a Long-Term View*, HM Treasury, London, 2002, http://www.yearofcare.co.uk/sites/default/files/images/Wanless.pdf.

Figure 5.3. Annual UK public spending on health as a percentage of total public and public service spending, 1955–56 to 2015–16



Note: Public spending is total managed expenditure. Public service spending is defined as total public spending less spending on gross debt interest and less spending on benefits and tax credits.

Source: Health spending data as for Figure 5.1. Public spending and public service spending calculated from OBR Public Finances Database and Department for Work and Pensions Benefit Expenditure Tables.

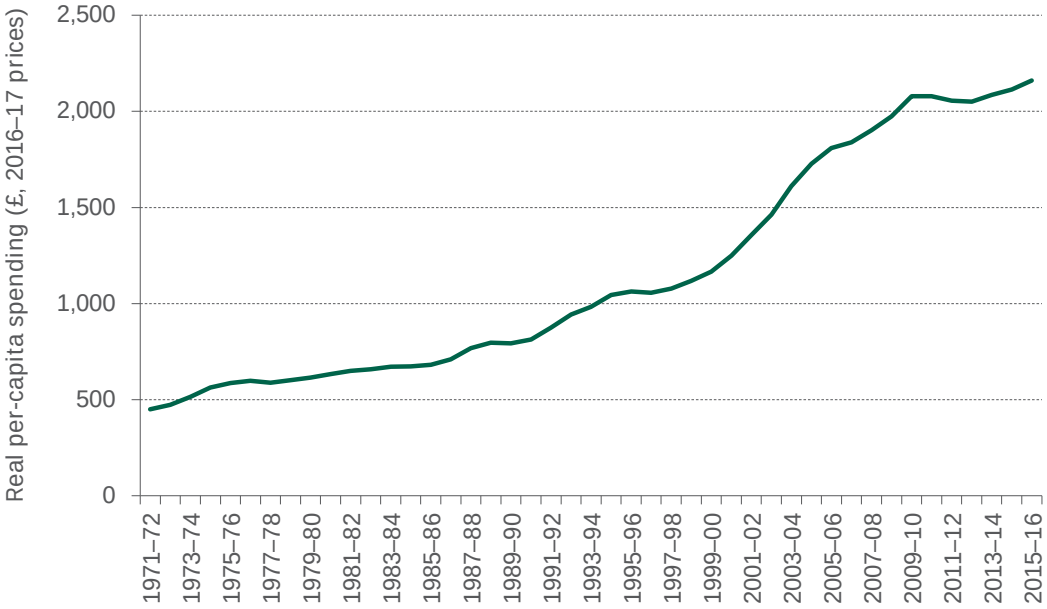
interest payments) in each year between 1955–56 and 2015–16. In 1955–56, health spending accounted for 7.7% of total public spending and 11.2% of public service spending. In 2015–16, these shares had increased to 18.4% and 29.7% respectively.

The 2010 Spending Review period witnessed a continued growth in these shares despite low real increases in health spending by historical standards. Between 2010–11 and 2015–16, health spending rose as a share of total public spending by 1.6 percentage points (or by 9.3%) and as a share of public service spending by 3.0 percentage points (11.1%). This means that, as a result of cuts to other departments and services, health spending now accounts for a greater share of government spending than ever before.

While health spending has increased over time, so have demand pressures for health services. In particular, the UK population, and therefore the potential number of users of the services, has increased. For example, between 1971 and 2015, the UK population grew by 16.4%, or 0.3% a year. This means that although health spending has increased by an annual average of 4.0% over this period, real spending per capita increased by an average of 3.6%.

Figure 5.4 shows real per-capita spending on health in the UK between 1971–72 and 2015–16. The pattern of growth is similar to that of overall growth shown in Figure 5.1, with sharp increases under Labour governments between 1996–97 and 2009–10 (5.4% on average), followed by a slower growth rate between 2009–10 and 2015–16 (0.6% on average). Population growth has been very strong in recent years, with 0.7% annual

Figure 5.4. Real per-capita public spending on health (2016–17 prices), 1971–72 to 2015–16



Source: Nominal health spending data from Office of Health Economics (1971–72 to 1990–91) and HM Treasury *Public Expenditure Statistical Analyses* (1991–92 to 2015–16). Real spending refers to 2016–17 prices, using the GDP deflator from the OBR in November 2016. UK population data available on an annual basis (but not financial year) from the Office for National Statistics (ONS) mid-year population estimates (June 2016 release) https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/timeseries/ukpop/pop.

growth between 2010 and 2015. Partly as a result of this, per-capita spending growth was weak, rising by only 0.6% per year on average between 2009–10 and 2015–16 (and actually falling between 2009–10 and 2012–13, before recovering in subsequent years).

In addition to population growth, the demographic composition of the population has also changed over time. Between 2009 and 2015, the share of the population aged 65 and over has grown by 10.0% (1.6 percentage points).[7] Older individuals require more health services than younger individuals, so an ageing population will also have led to increased use of services. This means that although per-capita spending was at a historical high of £2,160 per head in 2015–16 (2016–17 prices), on average individuals will be older and therefore likely to require more health services than ever before. Given a strong expected increase in the size of the older population in the coming years, this issue will continue to be of great importance. We discuss this, and its consequences for health spending in England, in more detail in Section 5.3.

A comparison of health spending in England, Scotland, Wales and Northern Ireland

Health spending has been the responsibility of the devolved administrations of Scotland, Wales and Northern Ireland since 1999 and spending and policy decisions have diverged since then.

[7] Office for National Statistics mid-year population estimates, 2009 and 2015. Accessed through NOMIS on 17 January 2017.

Table 5.2. Health spending and population growth in England, Scotland, Wales and Northern Ireland, 2009–10 and 2014–15

	% of identifiable UK health spending		% change between 2009–10 and 2014–15		
	2009–10	2014–15	Real health spending	Population	Real per-capita health spending
England	82.8	83.6	6.9	4.1	2.7
Scotland	9.1	8.6	0.0	2.2	–2.1
Wales	5.1	4.8	0.0	1.7	–1.7
Northern Ireland	3.0	2.9	4.5	2.6	1.8
UK	100.0	100.0	5.5	3.8	1.7

Note: Population data from Office for National Statistics mid-year population estimates, 2009 and 2014; accessed through NOMIS on 17 January 2017. Nominal health spending from HM Treasury *Public Expenditure Statistical Analyses 2016* and *2015*. Real spending refers to 2016–17 prices, using the GDP deflator from the OBR in November 2016. The changes in UK real health spending and real per-capita health spending include UK health spending that takes place outside of the UK. If we exclude this spending, real health spending and real per-capita health spending changed by 5.8% and 2.0% respectively between 2009–10 and 2014–15.

Table 5.2 shows the proportions of UK health spending that took place in England, Scotland, Wales and Northern Ireland in 2009–10 and 2014–15.[8] It also shows the total percentage changes in health spending, in the population of each nation and in per-capita spending over this period. In 2009–10, England accounted for the majority (82.8%) of UK health spending. Between 2009–10 and 2014–15, spending increased at a quicker rate in England than in the other nations. In particular, spending fell in real terms in Wales between 2009–10 and 2013–14 (before increasing in the final year). As a result, England accounted for a larger proportion of UK health spending in 2014–15 than in 2009–10.

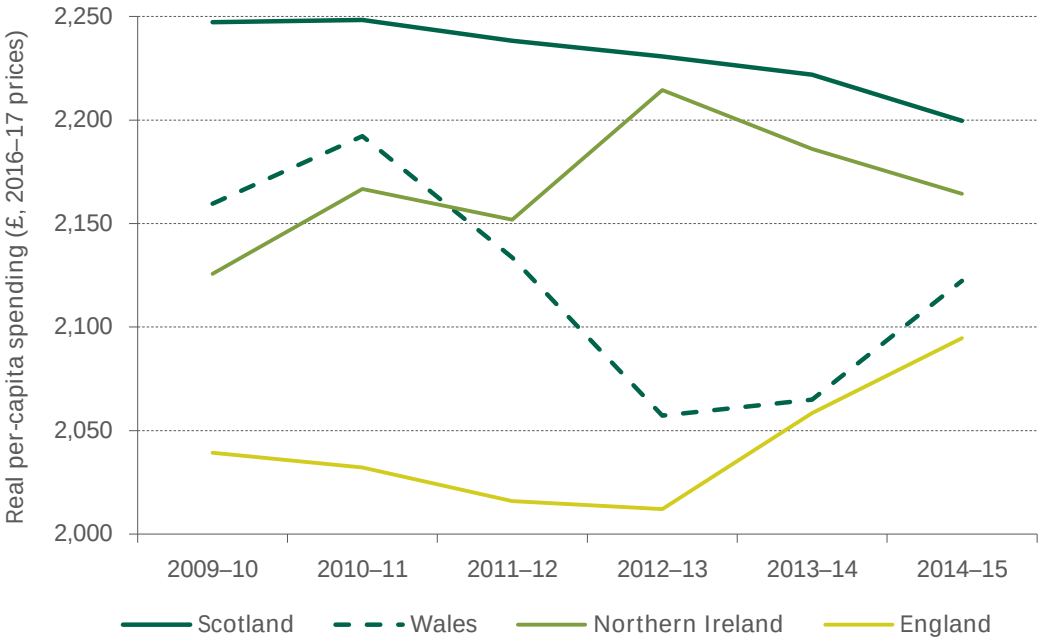
The demands for health services also increased over this period, with growth and ageing of the population. Between 2009–10 and 2014–15, the UK population grew by 3.8%. However, Table 5.2 shows that there was significant geographical variation, with population growth in England (4.1%) more than double growth in Wales (1.7%). This variation in demographic change will therefore have affected changes in per-capita spending over this period.[9]

Figure 5.5 displays real per-capita spending in England, Scotland, Wales and Northern Ireland for each financial year between 2009–10 and 2014–15. The final column of Table 5.2 also shows the percentage change in real per-capita spending over this period. England

[8] Separate figures for health spending in England, Scotland, Wales and Northern Ireland are not included in HM Treasury PESA 2016.

[9] The demographic composition, and changes to this composition, also vary across the nations. For example, the percentage of the population aged 65 and over is highest in Wales (19.9% in 2014), followed by Scotland (18.1%), England (17.6%) and Northern Ireland (15.5%). These population shares have also changed at different rates, growing by 1.9 percentage points in Wales between 2009–10 and 2014–15, 1.5 percentage points in England and Scotland and 1.4 percentage points in Northern Ireland. To our knowledge, there are no available data on differences in age-specific health care service use across the UK and so we have not compared age-adjusted per-capita spending figures.

Figure 5.5. Real per-capita health spending in England, Scotland, Wales and Northern Ireland, 2009–10 to 2014–15



Source: Authors' calculations using HM Treasury *Public Expenditure Statistical Analyses 2016* (2010–11 to 2014–15 out-turns) and *2015* (2009–10 out-turn) and the November 2016 OBR GDP deflator.

had the lowest levels of real health spend per capita in all years, but this gap has narrowed over the five-year period. Between 2009–10 and 2014–15, real per-capita spending grew by 2.7% in England. This compares with weaker growth in Northern Ireland (1.8%) and falls in real per-capita spending in Scotland (–2.1%) and Wales (–1.7%).

5.3 Health spending in England

Health spending in England is primarily the responsibility of the Department of Health.[10] Most of this funding is used to invest in and run the public health care system provided through the NHS, and the rest funds public health initiatives, health research and training for health care workers. In 2015–16, DH resource departmental limit (RDEL) gross expenditure was £124.3 billion. This includes income of £9.5 billion from other sources, specifically local authorities (£2.0 billion), private patients (£0.6 billion), prescribing and dental services (£1.9 billion) and other income (£5.0 billion). Net RDEL expenditure (that funded from central government revenue) in 2015–16 was therefore £114.7 billion.

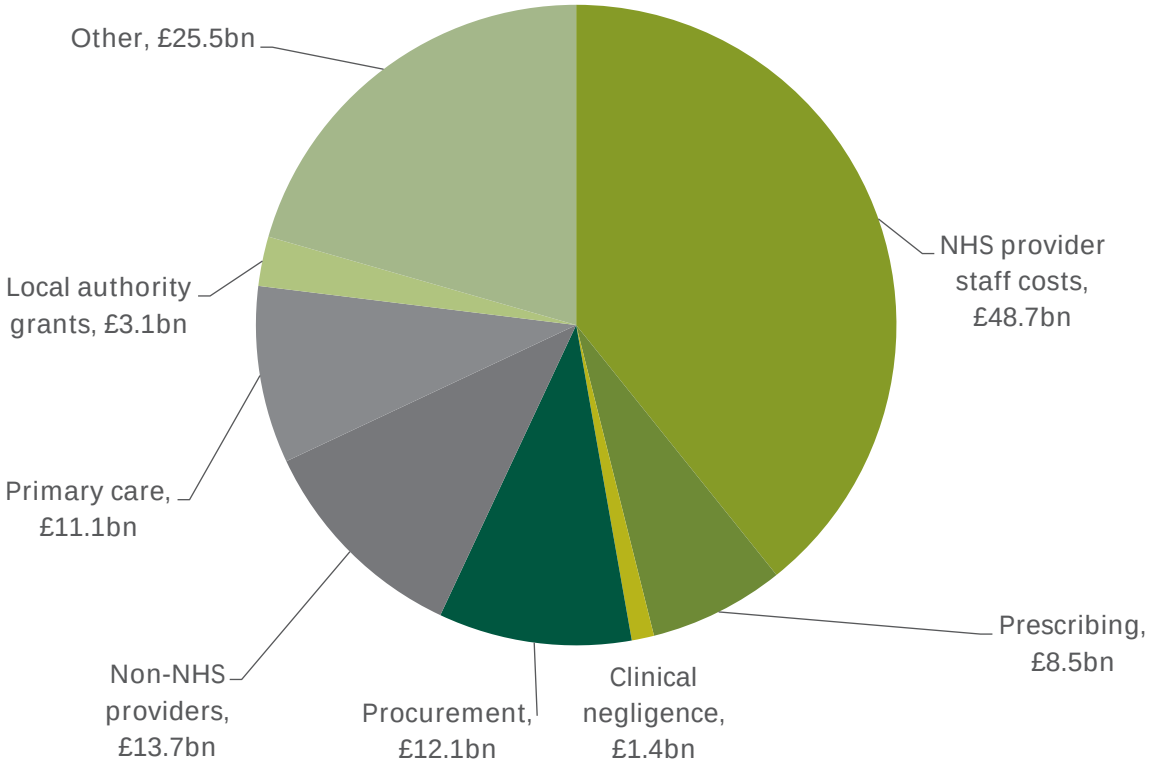
Figure 5.6 provides a breakdown of DH RDEL gross expenditure in 2015–16.[11] 57.0% is allocated directly to NHS providers. This funds the everyday running costs associated with providing NHS health care and includes staffing costs (39.2%), prescription drugs (6.8%), clinical negligence claims (1.1%) and procurement (9.8%). The remainder of the funds are

[10] The DH accounted for 99% of health spending in England in 2015–16. The rest is accounted for by the Department for Culture, Media and Sport and the Department for Business, Innovation and Skills.

[11] All figures from Department of Health, *Annual Report and Accounts 2015-16*, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/539602/DH_Annual_Report_Web.pdf.

allocated to other providers of health and social care and to administration costs. 11.0% of expenditure is allocated to non-NHS providers of health and social care. A further 8.9% is spent on providing primary care, including GP, dentistry, ophthalmology and pharmaceutical services, while 2.5% is allocated as local authority grants for public health spending. The remaining funds (20.5%) are allocated to administrative costs, stock consumed, depreciation and other costs.

Figure 5.6. Breakdown of Department of Health RDEL gross expenditure, 2015–16



Source: Figure 11 of Department of Health *Annual Report and Accounts 2015–16*, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/539602/DH_Annual_Report_Web.pdf.

Table 5.3. Department of Health budget, 2009–10 to 2015–16

	2009–10	2010–11	2011–12	2012–13	2013–14	2014–15	2015–16
Nominal out-turn, £bn	98.4	100.4	102.8	105.2	109.8	113.3	117.2
Real out-turn, £bn (2016–17 prices)	109.0	109.2	110.3	110.5	113.4	115.4	118.9
% real annual increase	–	0.2%	1.0%	0.2%	2.6%	1.8%	3.0%
Cumulative % real increase since 2009–10	–	0.2%	1.2%	1.4%	4.1%	5.9%	9.0%

Source: *Public Expenditure Statistical Analyses 2014* and *2016*. 2016–17 prices calculated with November 2016 OBR GDP deflator. All figures refer to total departmental expenditure limit (TDEL), which includes resource DEL (minus depreciation) and capital DEL.

Table 5.3 shows DH spending in each financial year between 2009–10 and 2015–16. Over this period, DH spending increased by £9.9 billion, or 9.0%, in real terms (2016–17 prices). This is equivalent to an annual average real increase of 1.5%. This figure is far below the average past growth rate in UK health spending over the 60 years to 2015–16 (4.1%). However, it is a much more generous settlement than most other government departments got, with other departments experiencing spending cuts over the same period.

During this period, cost and demand pressures have been building in the NHS. In 2013, NHS England estimated that the NHS in England would face a shortfall of approximately £30 billion (in 2020–21 prices) in 2020–21 if NHS funding did not rise from the 2014–15 level.[12] These pressures amount to £27 billion in 2016–17 prices. There was therefore considerable political and media debate, in the lead-up to the 2015 Spending Review, as to how these pressures could be met.

As part of its *Five Year Forward View* published in 2014, NHS England set out a range of scenarios under which these additional pressures could be met. These scenarios included different combinations of additional NHS funding and improvements in NHS productivity. The option championed by NHS England Chief Executive Simon Stevens, as reported widely in the press in October 2014, was to increase NHS funding in 2020–21 by £7 billion relative to the 2014–15 level (in 2016–17 prices).[13] The then Prime Minister David Cameron then made a pre-election pledge to increase funding in line with these plans.[14]

The remainder of the 'funding gap' would be addressed by productivity increases within the NHS, at an average rate of 2.4% per year. This was an ambitious target for productivity gains when set beside historical NHS performance and wider international comparisons. For example, Office for National Statistics (ONS) estimates indicate that NHS productivity increased at an average rate of 0.9% between 1997 and 2014.[15] Achieving these efficiency gains was always going to be a tough challenge for the NHS.

The 2015 Spending Review set out spending plans for the DH in each financial year between 2015–16 and 2020–21. It also set out specific plans for the NHS England budget (as a subset of the DH budget) for each of these years. This was the first time that a Spending Review explicitly set out spending plans for the NHS (and not DH), and was done because the £30 billion 'funding gap' referred specifically to NHS (and not DH or health) spending, and subsequent pledges to increase spending also referred specifically to the English NHS (see Box 5.1 for details about the differences between NHS and DH spending).

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[12] The NHS England calculations give an exact figure of £29 billion in 2020–21 prices. A rounded version of £30 billion has been widely publicised. Source: NHS England, 'The NHS belongs to the people: a call to action', 2013, https://www.england.nhs.uk/wp-content/uploads/2013/07/nhs-belongs.pdf and NHS England, 'The NHS belongs to the people: a call to action - the technical annex', 2013, https://www.england.nhs.uk/wp-content/uploads/2013/12/cta-tech-Annex.pdf.

[13] This was £8 billion in 2020–21 prices, and was widely reported in the press. See, for example, http://www.telegraph.co.uk/news/nhs/11181496/NHS-needs-8-bn-funding-boost-and-major-reforms-says-health-chief.html.

[14] See, for example, http://www.bbc.co.uk/news/uk-politics-32772548.

[15] Figure 7 of Office for National Statistics, 'Public service productivity estimates: total public service, UK: 2014', https://www.ons.gov.uk/economy/economicoutputandproductivity/publicservicesproductivity/articles/publicservicesproductivityestimatestotalpublicservices/2014#healthcare.

Box 5.1. Different measures of 'health' spending in England

There is considerable debate about how much 'health' spending is likely to change in the coming years. However, it is often unclear exactly which measure of spending is being referred to.

This chapter focuses upon three different measures of 'health' spending. First, 'health' spending is defined by the purpose, or function, of spending. HM Treasury classifies public spending by broad function as part of its Public Expenditure Statistical Analyses (PESA) publication. In 2016, the UK government spent £140.6 billion (2016–17 prices) on health.[a] This funded a combination of medical services, medical research and broader health services. We document the growth of this spending over time, and variation across the nations of the UK, in Section 5.2.

In Section 5.3, we discuss spending by the Department of Health and by NHS England. The majority of health spending in England is the responsibility of the DH, which accounted for 99% of health spending in 2015–16 (the Department for Culture, Media and Sport and the Department for Business, Innovation and Skills accounted for the rest).[b] In 2015–16, DH spending was £118.9 billion (2016–17 prices).

The NHS England budget is a part (though the majority) of the wider DH budget, accounting for 87.0% of the DH budget in 2015–16.[c] Since 2012, NHS England has been responsible for all NHS services in England. Future spending plans for NHS England were explicitly published in a spending review for the first time in 2015, with planned spending of £102.7 billion (2016–17 prices) in 2015–16.

The majority of DH and NHS England spending would be classified as 'health' spending. However, they also provide funding for other, non-health spending. For example, NHS England spent £1.8 billion on local-authority-organised social care in 2015–16 (see Section 5.4 for more details).

Health spending, and the budget for DH and NHS England, also change at different rates over time. UK health spending may differ from health spending in England due to policy decisions by the devolved administrations. Under the latest plans, NHS England spending will also increase at a quicker rate than overall DH spending over the next five years. For example, the 2015 Spending Review plans set out an 11.6% (1.9% per year) increase in NHS England spending between 2014–15 and 2020–21. This compares with a planned 7.3% (1.2% per year) increase in DH spending set out in the Spending Review.

In summary, it is important to be precise about the numbers being used when looking at trends in health spending.

[a] HM Treasury *Public Expenditure Statistical Analyses 2016*. Real spending refers to 2016–17 prices, using the GDP deflator from the OBR in November 2016.

[b] Table 5.1 of HM Treasury *Public Expenditure Statistical Analyses 2016*.

[c] 2015 Spending Review.

Table 5.4. Plans for Department of Health and NHS England real spending at the time of Spending Review 2015

	Out-turn	Forecast as of Spending Review (SR) 2015					
	2014–15	2015–16	2016–17	2017–18	2018–19	2019–20	2020–21
Real spending (£bn, 2016–17)							
DH latest plans	115.4	118.9	120.6	121.9	122.0	122.4	
DH SR 2015 plans	115.4	118.0	120.4	121.7	121.7	122.2	123.8
NHS England SR 2015 plans	99.9	102.7	106.8	108.6	108.8	109.8	111.5
NHS England as % of DH budget (as of SR 2015)	86.6%	87.0%	88.7%	89.2%	89.4%	89.8%	90.1%

Source: Department of Health latest plans from PESA 2016. Department of Health and NHS England Spending Review plans from the 2015 Spending Review. 2014–15 DH out-turns available from PESA 2016. 2014–15 out-turn differs from the published nominal figure in the Spending Review after subsequent upwards revisions (from £113 billion to £113.3 billion in nominal terms). NHS England figures are not published as part of PESA, and therefore cannot be updated from the Spending Review. As a result, SR 2015 figures are used to ensure consistency in comparisons between NHS England and DH spending over time. All real-terms prices are in 2016–17 prices. These are calculated using the November 2016 OBR GDP deflator.

Table 5.4 shows the plans for DH and NHS England real spending in each financial year between 2014–15 and 2020–21, as set out at the time of the 2015 Spending Review. Under the Spending Review plans, total DH spending was forecast to rise by £8.4 billion (in 2016–17 prices) between 2014–15 and 2020–21. These plans implied a larger increase in NHS England spending, with a real increase of £11.6 billion (in 2016–17 prices), or 11.6%, between 2014–15 and 2020–21.[16] As a result, the NHS England budget would account for 90.1% of DH spending in 2020–21, compared with 86.6% in 2014–15.

The forecast rate of future economy-wide inflation has fallen since the 2015 Spending Review plans were made, and as a result, these real increases in spending are larger than those planned in the Spending Review. This means that the planned increases are greater than both those committed to by Mr Cameron, and the required increases set out under the best NHS productivity scenario (2.4% per year between 2014–15 and 2020–21) in the *Five Year Forward View* and subsequently requested by Simon Stevens in 2014.

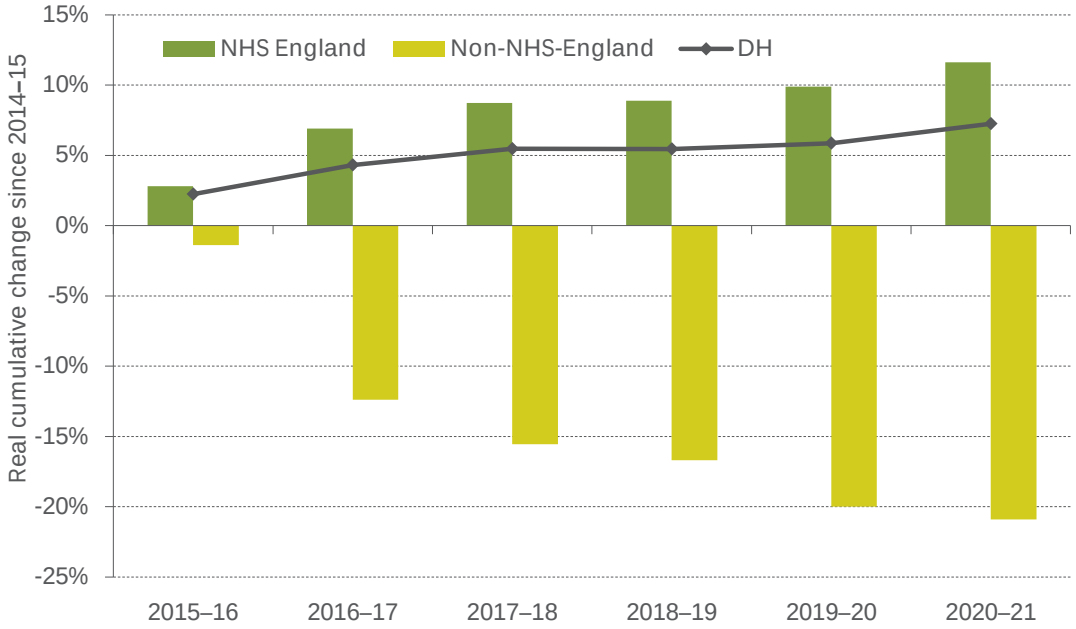
Table 5.4 also shows the latest planned DH spending up to 2019–20.[17] The latest estimates indicate that DH spending was £0.9 billion higher in 2015–16 than initially set out in the 2015 Spending Review, and that spending will be marginally higher (£0.2–0.3 billion) in future years up to 2019–20.

It is important to note that the planned NHS spending increases are larger than the planned overall changes to the DH budget, as noted by the Health Select Committee in

[16] This is an increase of £12.5 billion in 2020–21 prices, using the November 2016 GDP deflator.

[17] Latest DH plans from PESA 2016. PESA 2016 includes forecast spending up to 2019–20. Plans for DH spending in 2020–21 are therefore not available. NHS England plans are not published separately, and it is unclear how changes to DH spending will affect NHS England planned spending between 2015–16 and 2019–20.

Figure 5.7. Cumulative real changes to Department of Health spending set out by the 2015 Spending Review, 2014–15 to 2020–21



Source: Spending Review 2015. NHS England figures are not published as part of PESA, and therefore cannot be updated from the Spending Review. As a result, SR 2015 figures are used to ensure consistency in comparisons between NHS England and DH spending over time. Real-terms changes are calculated using the November 2016 OBR GDP deflator.

July 2016.[18] Figure 5.7 demonstrates this. It shows the cumulative increase in DH spending relative to 2014–15 for each year up to 2020–21, with real DH spending planned to increase by 7.3% over the period. It also shows the changes to NHS England and non-NHS-England spending within the overall DH budget. While the NHS England budget is set to increase by 11.6% over this period, the plans imply cuts to the remainder of the DH budget. Between 2014–15 and 2020–21, the non-NHS-England DH budget is set to fall by 20.9% in real terms, from £15.5 billion to £12.3 billion. This will have consequences for other activities carried out by the DH outside of NHS England, including the funding of education and medical research. Details of how these cuts will be distributed across services remain unclear. However, it is likely that the biggest impact will be in areas such as medical staff training and public health. Moving away from grants for student nurses towards student loans will reduce costs to DH, but could have consequences for the numbers of trainee nurses. Local authority public health budgets are also set to be cut in real terms going forward, and such reductions in public health spending may ultimately lead to greater demand for front-line NHS services.

Future pressures

The NHS faces many challenges in both the short and long runs. These arise from increasing demand for care and from pressures that increase the cost of providing a given level of care. In the remainder of this section, we discuss the likely impact of demographic

[18] House of Commons Health Committee, *Impact of the Spending Review on Health and Social Care*, First Report of Session 2016–17, http://www.publications.parliament.uk/pa/cm201617/cmselect/cmhealth/139/139.pdf.

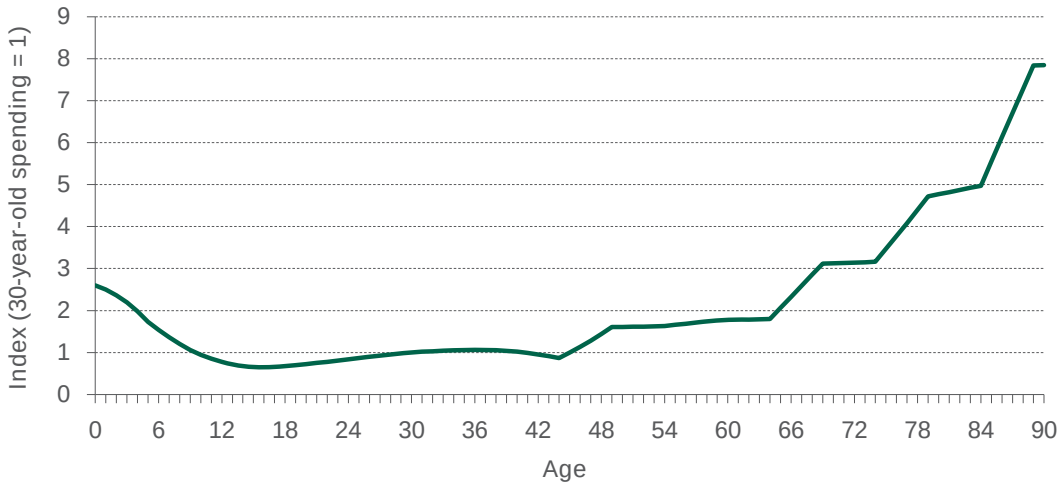
pressures on the demand for health care over the next five years. In Section 5.5, we will discuss longer-run demographic pressures and the impact of non-demographic cost pressures on long-run health spending.

Of course, the NHS is currently at the centre of a number of other fierce media and political debates. Plans for a 'seven-day NHS' have been controversial and will increase the responsibilities placed upon NHS providers by expanding the availability of elective and diagnostic services to weekends.[19] There are also a number of issues relating to the training and pay of NHS staff. A dispute between the DH and the British Medical Association over the new junior doctor contract is ongoing, while there is concern about shortages of nursing and midwifery staff in many NHS hospitals.[20] How the NHS tackles these issues going forward is of great policy importance and will have implications for how health care is provided and funded in the future.

The first and most obvious pressure on demand for health care, in both the short and long run, comes from the growth and ageing of the population. A larger population will require more health services. For example, the English population increased by an average of 0.8% per year between 2009–10 and 2015–16. As a result, spending would be required to rise at this pace to keep up with population growth alone.

The ageing of the population is also important. Older individuals, on average, use more services than younger individuals. This means that as the size of the older population rises (or as an increasing proportion of the population is above a certain age), the average demand for health care will also increase. Figure 5.8 shows estimated annual public health spending on individuals of different ages relative to the annual spending on an average 30-year-old for the UK. It shows that average spending on someone aged 65 is double that

Figure 5.8. Age profile of public health spending in the UK (relative to 30-year-olds)



Source: Chart 3.7 of Office for Budget Responsibility *Fiscal Sustainability Report 2017*. Costs are reported for individuals of each age between 0 and 90 years, relative to the average cost of treating a 30-year-old in the UK.

[19] For an example of reporting over concerns about the expansion of services, see https://www.theguardian.com/society/2016/aug/22/secret-documents-reveal-official-concerns-over-seven-day-nhs-plans.

[20] See, for example, http://www.telegraph.co.uk/news/2017/01/19/96-per-cent-hospitals-have-nurse-shortages-official-figures/.

Table 5.5. Spending increases required to keep up with demographic change

	Real increase in spending required to keep pace with:		Real increase in DH spending implied by out-turns and latest plans	Real increase in NHS England spending implied by out-turns and latest plans[a]
	population growth	population growth and changing age structure		
2009–10 to 2015–16	5.0% (0.8% per year)	8.1% (1.3% per year)	9.0% (1.5% per year)	–
2015–16 to 2019–20	3.1% (0.8% per year)	5.0% (1.2% per year)	3.0% (0.7% per year)	6.2% (1.5% per year)
2009–10 to 2019–20	8.2% (0.8% per year)	13.5% (1.3% per year)	12.3% (1.2% per year)	–

[a] Spending Review 2015 shows real DH spending at £0.9 billion less than the latest spending plans in 2015–16 and £0.2 billion less in 2019–20. We assume that all additional DH spending is assigned to NHS England in both 2015–16 and 2019–20. This increases NHS England real spending to £103.6 billion in 2015–16 and £110.0 billion in 2019–20 (2016–17 prices). The change in real NHS England spending between 2015–16 and 2019–20 implied by the Spending Review 2015 plans is 6.9% (or 1.7% per year).

Source: Authors' calculations using ONS population projections (June 2014), mid-year population estimates (2009 to 2015) and age spending weights from the Office for Budget Responsibility Fiscal Sustainability Report 2017 (as shown in Figure 5.8).

on a 30-year-old. The ratio rises steeply at older ages, with spending on a 70-year-old three times, and spending on a 90-year-old almost eight times, that on a 30-year-old.

There is uncertainty about how much additional spending is required to treat a growing and ageing population. It is unclear whether individuals will spend extra years of life in good or bad health, so we cannot be sure whether the shape of the age profile of spending in Figure 5.8 will remain unchanged over time – although over short periods it is likely to be a good approximation. Under the assumption that this profile does not change in the short run, we can therefore combine Figure 5.8 with the latest population projections to estimate how much spending would need to increase by between 2009–10 and 2019–20 to account for a growing and ageing population. These estimates are shown in Table 5.5, where they are compared with the current real increases in DH and NHS England spending implied by the latest spending plans.

In order to keep pace with the growing size of the population, or in other words to keep real spending per capita constant, real health spending needed to increase by an average of 0.8% each year (or 5.0% in total) between 2009–10 and 2015–16. To maintain real spending per capita on people of each age required larger increases, of 1.3% per year (or 8.1% in total), due to our ageing population. Actual real spending by the DH just kept pace with this, increasing by 1.5% per year or 9.0% in total.

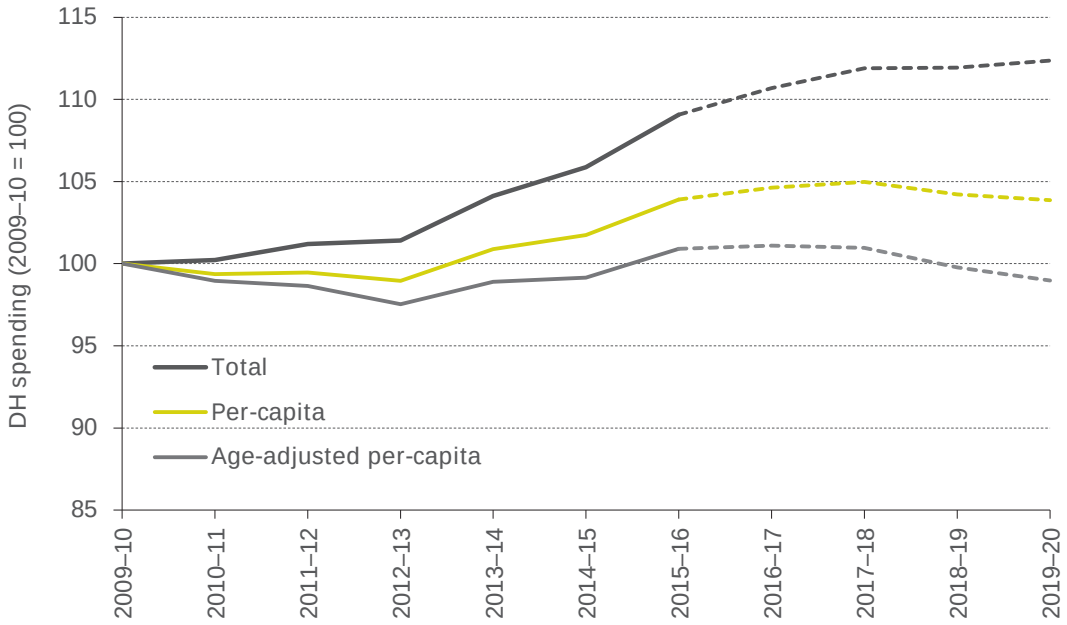
These changes can also be forecast going forward. The latest population projections imply that to keep real spending per capita constant, a real increase of 0.8% per year (or 3.1% in total) is required between 2015–16 and 2019–20. Accounting for the changing age structure as well requires real increases of 1.2% per year (or 5.0% in total). This compares with current planned increases in DH spending of 0.7% per year (or 3.0% in total) between

2015–16 and 2019–20. As a result, the planned increase in the DH budget over the next few years will fall short of that required to keep pace with the growing and ageing population by £2.4 billion.

As a result of planned spending, real increases in DH spending between 2009–10 and 2019–20 are set to be larger than the increases required to keep pace with population growth, with average growth of 1.2% per year (12.3% total, or £13.4 billion) rather than 0.8% per year (8.2%, £8.9 billion). However, this is below the spending increases required to keep pace with both population growth and changing age structure (1.3% per year, or 13.5% in total). This is clearly shown in Figure 5.9, which compares overall, per-capita and age-adjusted per-capita DH spending with their 2009–10 level in each financial year between 2009–10 and 2019–20 (forecast spending is shown by the broken line). This means that a real increase in DH spending between 2009–10 and 2019–20 of £14.7 billion will be required to keep pace with these changes. The current plans include growth of only £13.4 billion and, as a result, indicate a shortfall of £1.3 billion in DH spending by the end of the period.

If we consider only NHS England spending between 2015–16 and 2019–20, the current plans imply real increases in spending between 2015–16 and 2019–20 of 6.2% (1.5% per year) or £7.1 billion, which is sufficient to meet the annual 1.2% spending increases required to keep pace with both population growth and the changing age structure. In monetary terms, the plans indicate a real increase of £7.1 billion in NHS England funding, compared with funding pressure of £5.1 billion. In other words, three-quarters of the

Figure 5.9. Real-terms Department of Health spending (2009–10 = 100), 2009–10 to 2019–20



Note: Total, per-capita and age-adjusted per-capita spending in 2009–10 each take the value 100.

Source: Authors' calculations using DH spending from HM Treasury PESA 2016 for all years between 2009–10 and 2019–20, ONS population projections (June 2014), ONS mid-year population estimates (2009 to 2015) and age spending weights from the Office for Budget Responsibility *Fiscal Sustainability Report 2017* (as shown in Figure 5.8).

increase in the NHS England budget over the period from 2015–16 to 2019–20 will be taken up by the expected costs of a growing and ageing population.

It is important to acknowledge that these estimates only account for demographic pressures on health care going forward. NHS England calculates that there are additional cost pressures that add to the cost of providing health care in England in each year.[21] Substantially larger increases than 1.2% per year would therefore be required to meet these costs fully (in addition to the demographic pressures). We discuss the implications of these costs for long-run health spending in Section 5.5.

While funding for health care has grown over time, the level of health care services in the UK has also increased over time. To some extent, this increase in activity is driven by input growth, with health care inputs increasing by 93.6%, or 4.0% per year between 1997 and 2014.[22] Health care productivity also increased over this period. This means that the NHS has been able to produce a greater (quality-adjusted) level of output with a given level of inputs over time.[23] ONS estimates indicate that productivity grew at an average rate of 0.9% per year between 1997 and 2014.[24]

As a result of both an increased level of inputs and a more productive use of these inputs, health output has increased over time. Figure 5.10 shows how quality-adjusted output in the UK has changed between 1997 and 2014 (relative to the 1997 level).[25] Health care activity has increased by 126.8% over this period, or 4.9% per year on average. This increase in activity is not driven simply by increased demand arising from population growth (0.6% per year on average over the same period) and the ageing of the population. Thus demand for health care has increased over and above what would be required by demographic pressures, and this is likely to continue in the future.

How well the NHS meets future demand pressures will have important implications for the quality of health care services that it provides. However, measuring service quality is difficult. There are a myriad of indicators that are used to measure the performance of the NHS. These include waiting times for a range of services, patient satisfaction and death rates.[26] One indicator of NHS performance that has attracted much attention in recent years is waiting times in NHS accident and emergency (A&E) departments. From 2010–11,

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[21] NHS England, 'NHS Five Year Forward View: recap briefing for the Health Select Committee on technical modelling and scenarios', May 2016, https://www.england.nhs.uk/wp-content/uploads/2016/05/fyfv-tech-note-090516.pdf.

[22] Figure 7 of Office for National Statistics, 'Public service productivity estimates: total public service: UK: 2014', https://www.ons.gov.uk/economy/economicoutputandproductivity/publicservicesproductivity/articles/publicservicesproductivityestimatestotalpublicservices/2014; last accessed on 20 January 2017.

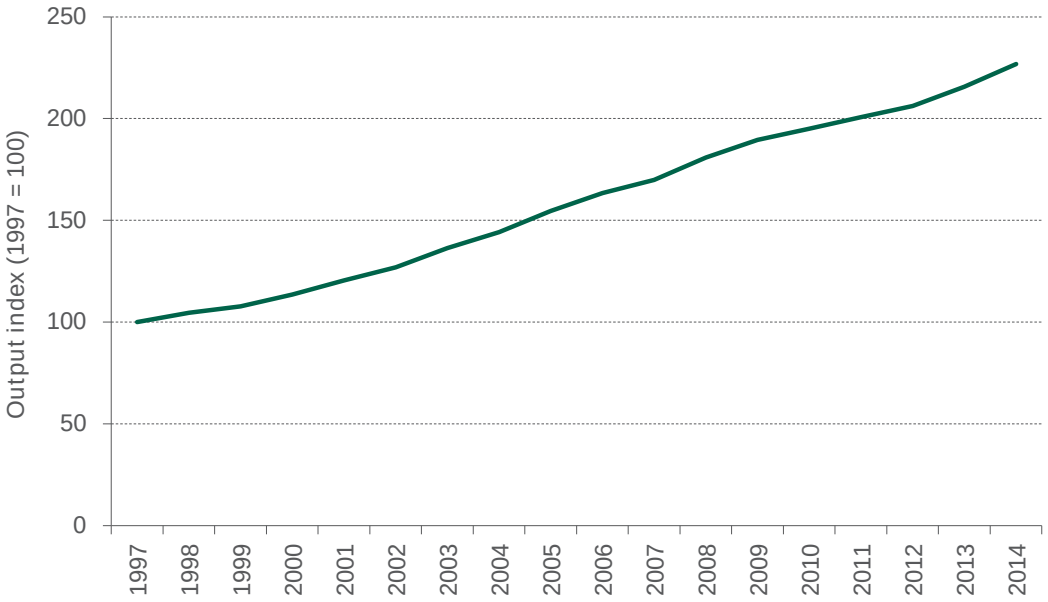
[23] For more details on quality adjustments for health care outputs, see Office for National Statistics, 'Sources and methods for public service productivity estimates: healthcare', available at http://webarchive.nationalarchives.gov.uk/20160105160709/http:/www.ons.gov.uk/ons/guide-method/method-quality/specific/public-sector-methodology/articles/index.html.

[24] Source as in footnote 22.

[25] Health care output or activity is measured using a cost-weighted activity index. This combines estimates of the health care output – e.g. the number of consultations, procedures, or products such as drugs – with the unit costs for each unit of output. Estimates include outputs from Hospital and Community Health Services, Family Health Services, drugs prescribed by GPs and NHS-funded services provided by non-NHS bodies (non-NHS services are not cost-weighted). See reference in footnote 23 for further details.

[26] 'QualityWatch', run by the Nuffield Trust and the Health Foundation, tracks a range of these indicators. See http://www.qualitywatch.org.uk/.

Figure 5.10. Quality-adjusted health care output (1997 = 100), 1997 to 2014



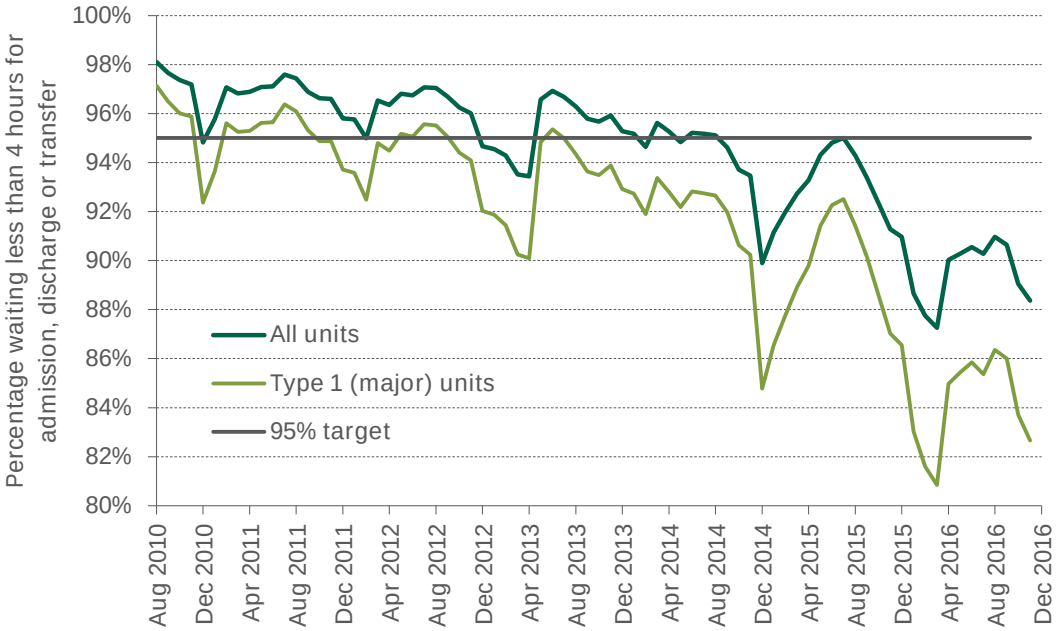
Source: Figure 7 of ONS, 'Public service productivity estimates: total public service: UK: 2014', https://www.ons.gov.uk/economy/economicoutputandproductivity/publicservicesproductivity/articles/publicservicesproductivityestimatestotalpublicservices/2014; last accessed on 20 January 2017.

the target for this measure has mandated that 95% of patients should be admitted, discharged or transferred to another hospital within four hours of arriving at an NHS A&E department.[27]

Figure 5.11 shows how NHS hospitals performed against this target on a monthly basis between August 2010 and November 2016. It shows performance for all units (including walk-in centres and urgent care centres), and separately for major hospitals ('Type 1 units'). Hospitals achieved the target level in most months prior to December 2012. However, during the 2012–13 winter season, performance dipped substantially, falling to only 90.1% of patients being treated within four hours in major hospitals in April 2013. Performance subsequently improved before falling again the following winter, and it fell to a low of 84.8% in major hospitals in December 2014. This seasonal pattern was repeated, with improvements in performance in Summer 2015, although the target level was only achieved in one month (July 2015) and performance levels were much lower in major units. The last year has then seen a marked decline in performance against the target, with only 88.4% patients, or 82.7% of patients in major hospitals, seen within the four-hour target in November 2016. This decline in performance has led to the temporary suspension of the target in some hospitals and to substantial debate over the future of the target.

[27] When first announced in the NHS Plan in 2000, the target level was 100%. This was reduced to 98% upon implementation in 2005, to allow for a small number of patients with clinical needs that required additional treatment time. This target was further reduced to 95% by the incoming coalition government in 2010. For more information on the target, see http://www.nhs.uk/NHSEngland/thenhs/nhshistory/Pages/NHShistory2000s.aspx.

Figure 5.11. Percentage of patients who are admitted, discharged or transferred within four hours of arrival at an A&E department, by unit type, August 2010 to November 2016



Note: All NHS hospitals and walk-in centres that provide emergency care are subject to the 95% target. Type 1 units are 24-hour consultant-led emergency departments with full resuscitation facilities and designated accommodation for the receipt of A&E patients.

Source: Data from NHS England, 'A&E attendances and emergency admissions' (accessed 9 January 2017), https://www.england.nhs.uk/statistics/statistical-work-areas/ae-waiting-times-and-activity/statistical-work-areasae-waiting-times-and-activityae-attendances-and-emergency-admissions-2016-17/.

Of course, general NHS performance cannot be measured by a single indicator. However, there has also been a general decline in performance against targets for elective waiting times, cancer referral times and trolley waits in hospitals.[28] Taken together, these indicators suggest that NHS hospitals may already be finding it hard to meet rising demand pressures.

A final, important factor that is likely to influence the pressures faced by the NHS is the future organisation and funding of the social care system. Social care has traditionally been provided in England by local authorities, with the NHS responsible for some health-related long-term care. With large reductions in local authority funding since 2009–10, NHS funds have been increasingly diverted to fund traditional social care activities (as part of the Better Care Fund). Such a decision on the one hand increases the responsibilities of the NHS and reduces resources in other areas of NHS activity. However, the boundary between health and social care is often blurred, with many individuals requiring both acute health care and longer-term social care, and the reduced availability of social care is likely to lead to more use of NHS hospitals in the longer run. Understanding the role of social care, and how funding has evolved in this area in recent years, is therefore important. We turn to these issues in detail in the next section.

[28] http://www.qualitywatch.org.uk/latest-data/combined-performance-summary-november-2016-0.

5.4 Social care spending in England

Social care covers a wide range of non-medical services provided to individuals and families in order to help them carry out routine activities in their daily lives. It includes the provision of community and residential care for adults with physical and cognitive disabilities and mental health needs, in addition to services for looked-after children, children 'in need' and those on the child protection register.

Children's and adults' social care services are predominantly the responsibility of local authorities (LAs) in England.[29] For children, eligibility does not take into account the ability of the child or their parents to pay. However, LAs do have some discretion to charge fees for the services they provide.[30] By contrast, LAs only have a duty to provide and contribute to the cost of social care services in England for adults who are deemed sufficiently in need and unable to fund their own care. In the past, eligibility criteria and service coverage varied considerably across the country, but recent policy has aimed to reduce this variation through the introduction of national eligibility criteria as part of the Care Act 2014.[31]

In 2015–16, public spending on LA-organised care was £24.4 billion. One-third (£8.0 billion) of this was spent on children's services and two-thirds (£16.4 billion) on adult social care. These figures are based on LA net expenditure on social care (a measure that excludes any income LAs receive from providing services). They also include £1.8 billion from the Better Care Fund, a new pooled budget between Clinical Commissioning Groups (CCGs) and LAs to provide integrated care and social care services benefiting health. These figures do not include direct spending by the NHS on social care for which LAs have no responsibility.[32]

Unlike health care, the majority of social care in England is either paid for privately or provided informally on a voluntary basis (e.g. by a partner or child). The largest source of care is relatives who provide informal care. Estimates from the National Audit Office (NAO) indicate that the replacement cost of all informal care could be as much as six times public spending on care.[33] Recent estimates, using the English Longitudinal Study of Ageing from 2014–15, also indicate that around a quarter of individuals aged 65 years and above received some informal help.[34]

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[29] The duties of LAs and the eligibility criteria for public assistance (which differ between children and adults) are defined in the Children Act 1989 and the Care Act 2014.

[30] No charge may be made to individuals in receipt of certain income-related benefits, including universal credit, income support and working tax credit.

[31] Under the new law, LAs must assess separately an individual's care needs and financial situation. An adult is considered in need of care if they are unable to achieve two or more outcomes (such as maintaining personal hygiene) without assistance, distress or danger to their health. If they have assets over £23,250, they automatically have to pay the full cost of their care. However, if their savings are less than this, they will receive a contribution to the cost of their care from the LA, depending on their income and savings.

[32] NHS social care spending primarily covers care services for individuals with severe and complex care needs who are considered to have a 'primary health need for care'. These services are counted in our measures of NHS spending in Section 5.3.

[33] NAO, *Adult Social Care in England: Overview*, 2014, https://www.nao.org.uk/wp-content/uploads/2015/03/Adult-social-care-in-England-overview.pdf.

[34] R. Crawford and G. Stoye, *The Prevalence and Dynamics of Social Care Receipt*, IFS Report, forthcoming, 2017.

Some adults entirely procure and self-fund their own care. The NAO estimates that the value of this care in 2010–11 was roughly half that spent on LA-organised care (and this share is likely to have increased in recent years given public sector spending cuts).[35] In addition to this private funding, individuals may also co-fund receipt of LA-organised care (in 2015–16, these individuals contributed on average 16.5p for every £1 of public funding).[36]

In this section, we look at how public spending on social care organised by LAs has changed since 2009–10, and how it may evolve up to 2019–20. Looking forward, we compare public social care spending for a scenario in which LAs do not prioritise social care services over the other services they provide and the spending that would be necessary to keep per-capita spending at a constant level for children and adults (a rough guide to the spending required to maintain current service levels with current eligibility thresholds).

Our analysis focuses on the period up to 2019–20. This means we do not consider the impacts of planned reforms after 2020, including the set of reforms that were planned for April 2017 but whose implementation was delayed until (at least) 2020. These reforms, which include a lifetime cap on care costs and an increase in the upper income limit for means-tested care, were estimated by the government before the delay to cost £2.5 billion per year by 2025–26.[37] Given the wider fiscal context of continued austerity (see Chapter 3), it would not be surprising if reform were delayed further.

Public spending on social care

Figure 5.12 shows public spending on social care organised by English LAs in each financial year between 1977–78 and 2015–16, in real terms and as a percentage of UK national income. These services have traditionally been funded by local government. In recent years, additional money from NHS transfers have accounted for a small but increasing share of spending. The figure shows spending with (solid line) and without (broken line) spending funded by NHS transfers to LAs.

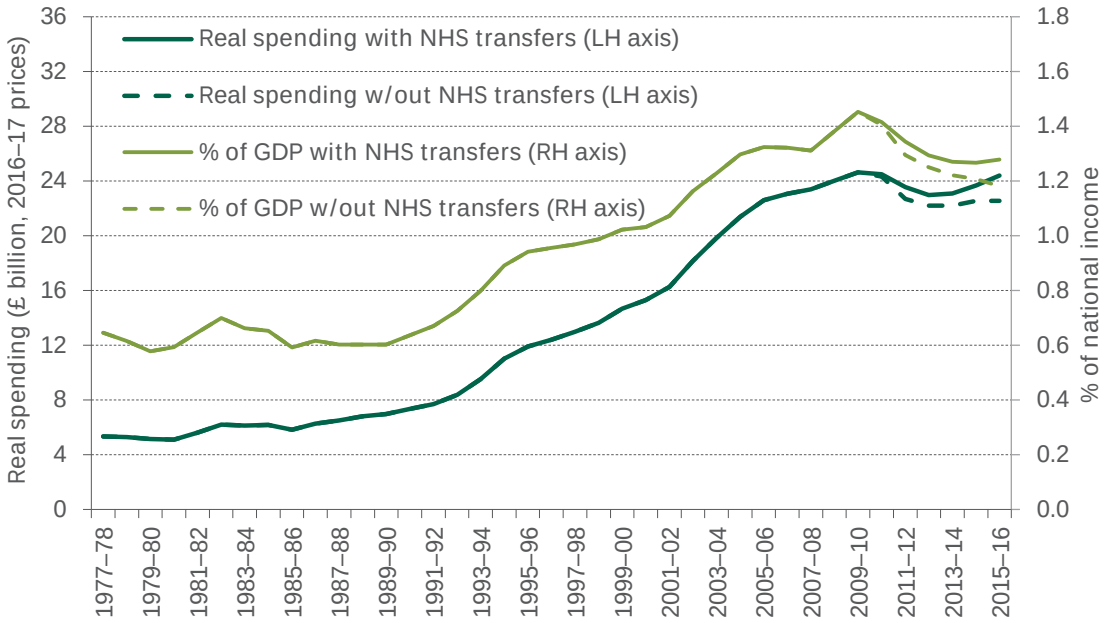
Public spending on social care has grown substantially over time both in real terms and as a share of national income. Growth in spending was particularly rapid in the first half of the 1990s and the first half of the 2000s. Between 1977–78 and 2009–10, spending grew on average by 4.9% per year. This is even faster than the 4.4% growth in UK health spending over the same period (see Figure 5.1). However, between 2009–10 and 2015–16, public spending on social care decreased by 1%. This is in contrast to the 9.0% real increase in DH spending in England over the same period. Transfers from the NHS to LAs played a

[35] NAO, *Adult Social Care in England: Overview*, 2014, https://www.nao.org.uk/wp-content/uploads/2015/03/Adult-social-care-in-England-overview.pdf. Estimates originally come from Skills for Care, *The Economic Value of the Adult Social Care Sector in England*, 2013, http://www.skillsforcare.org.uk/Document-library/NMDS-SC,-workforce-intelligence-and-innovation/Research/SfC-Economic-Impacts-Report-FINAL.pdf and are based on the assumption that 48% of residential care users and 20% of users of other care services are entirely self-funded.

[36] Ratio of local authority social care expenditure financed by fees and charges to sum of net revenue expenditure on social care (both from DCLG local government revenue expenditure and financing statistics) and NHS transfers.

[37] Department of Health, *Social Care Funding Reform Impact Assessment*, IA 9531, February 2015, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/401348/Social_Care_Funding_Reform_IA_FINAL_v2.pdf.

Figure 5.12. Social care spending by local authorities in England on a consistent basis in real terms (2016–17 prices) and as a percentage of national income, 1977–78 to 2015–16



Note: Public social care spending is defined as net expenditure on social care by local authorities, plus NHS transfers to local authorities to fund social care from 2010–11 onwards. It excludes any NHS spending on social care other than the transfers for local authorities (e.g. continuing health care arrangements, nurses in care homes etc.). We assume that the learning disability and health reform grant (which prior to 2011–12 was part of the NHS budget and is included in this figure) grew at the same rate as the rest of social care spending.

Source: DCLG local government budget data (2015–16), DCLG local government out-turn data (2014–15), CIPFA financial and general actuals (2007–08 to 2013–14) and adjusted CIPFA financial and general estimates (1977–78 to 2006–07).

significant role in reducing the cut to social care spending over this period. However, this does mean that a larger share of NHS spending is spent on social care rather than on traditional NHS services. The impacts of these transfers on social care are discussed further below.

Table 5.6 shows that social care spending funded solely from LA revenues fell by 8.4% between 2009–10 and 2015–16, from £24.6 billion in 2009–10 to £22.6 billion in 2015–16 (2016–17 prices).[38] The cut was front-loaded, with spending falling sharply over the first few years, before flattening out and recovering slightly in 2014–15 and 2015–16.[39]

[38] Note that in 2015–16 LAs were given new legal duties under phase one of the Care Act 2014, including a requirement to assess and meet the eligible needs of carers, for which they received additional funding in this year. To the extent that these needs were not previously being met by other public services, this represents a genuine increase in spending.

[39] This series is adjusted to ensure a consistent set of LA responsibilities over time. In 2011–12, responsibility and funding for spending on adults with learning disabilities (the 'Valuing People Now' programme) was transferred from the NHS to LAs. We add around £1.3 billion to LA spending in 2009–10 and 2010–11 to reflect these changes retrospectively. This is consistent with the treatment of DH spending in HM Treasury PESA 2016. Without this adjustment spending, was roughly flat in real terms between 2009–10 and 2012–13, while the demands on LAs had increased.

Table 5.6. Public social care spending, 2009–10 to 2015–16 (2016–17 prices)

	2009–10	2010–11	2011–12	2012–13	2013–14	2014–15	2015–16	Real change
LA net expenditure on social care (£bn)	**24.6**	**24.3**	**22.7**	**22.2**	**22.2**	**22.6**	**22.6**	**–8.4%**
% of total local service spending	48.3%	50.4%	51.3%	52.4%	53.6%	54.4%	55.3%	+7ppts
Publicly-funded LA-organised social care (£bn)	**24.6**	**24.5**	**23.6**	**23.0**	**23.1**	**23.7**	**24.4**	**–1.0%**
of which NHS transfers to local authorities	*– (0%)*	*£0.17bn (0.7%)*	*£0.86bn (3.6%)*	*£0.76bn (3.3%)*	*£0.89bn (3.8%)*	*£1.12bn (4.7%)*	*£1.84bn (7.5%)*	

Note: 'NHS transfers to local authorities' also includes winter pressures funding and the Better Care Fund. £1.84 billion in 2015–16 is the portion of the Better Care Fund minimum allocation in that year that CCGs reported was spent on social care services and social care providers; for more information, see NHS England, *Meta-Analysis of Better Care Fund Plans for 2015–16*, https://www.england.nhs.uk/wp-content/uploads/2015/06/bcf-meta-analysis-summary-feb-update.pdf.

Source: DCLG local authority revenue expenditure and financing statistics, 2009–10 to 2015–16 for LA net expenditure on social care. Annex C table C1 of HSCIC *Personal Social Services: Expenditure and Unit Costs England 2015–16* for NHS transfers, Better Care Fund and winter pressures funding.

Councils have made wider cuts to spending beyond social care. Between 2009–10 and 2015–16, as a result of council tax freezes and cuts to central government grants for LAs, total local service spending by LAs fell by 20.0%.[40] Local authorities chose to cut social care less than other services, so it now accounts for a larger proportion of local service spending, growing from 48.3% in 2009–10 to 55.3% in 2015–16.

The majority of public spending on social care is funded by LAs from their own revenues. However, since 2010–11, a growing share of spending has been financed by transfers from the NHS budget to LAs for spending on social care services that benefit health.[41] In 2015–16, the transfers became part of the new Better Care Fund, a pooled social care budget between CCGs and LAs. Table 5.6 shows that the value of these transfers has increased from £0.17 billion in 2010–11 to £1.84 billion in 2015–16.[42]

[40] Local service spending is defined as net expenditure on services by LAs in England excluding police, fire and national park authorities, as per Department for Communities and Local Government (DCLG) local government revenue expenditure and financing statistics. This measure excludes spending on education, fire, police and public health as LA responsibilities in these areas are inconsistent over time.

[41] This spending is not recorded in LA net expenditure due to accounting practices, and is instead included in spending by the Department of Health. We add it to LA net expenditure on social care to get our headline measure of publicly-funded LA-organised social care. For more detail, see appendix C of Health and Social Care Information Centre, *Personal Social Services: Expenditure and Unit Costs England 2011–12*, https://catalogue.ic.nhs.uk/publications/social-care/expenditure/pss-exp-eng-11-12-fin/pss-exp-eng-11-12-fin-rpt.pdf.

[42] A lack of detailed data makes it hard to confirm how these transfers were spent. In theory, transfers were only to be used to fund adult social care services that also have a health benefit. Between 2010–11 and 2014–15, this condition applied to the entire NHS transfer. In 2015–16, under the Better Care Fund, it applied to only

Table 5.7. Public social care spending on children and adults, 2009–10 to 2015–16 (2016–17 prices)

	2009–10	2010–11	2011–12	2012–13	2013–14	2014–15	2015–16	Real % change
LA-funded children's social care (£bn)	**7.1**	**7.2**	**6.9**	**6.9**	**7.1**	**7.8**	**8.0**	**+12.4%**
LA-funded adult social care (£bn)	17.5	17.1	15.8	15.3	15.1	14.8	14.6	–16.8%
LA-funded adult social care plus NHS transfers (£bn)	**17.5**	**17.3**	**16.7**	**16.0**	**15.9**	**15.9**	**16.4**	**–6.4%**

Note: For consistency we add around £1.3 billion of learning disability and health reform funding to adult social care spending in 2009–10 and 2010–11. We also remove around £440,000 of spending on youth services from children's social care spending in 2014–15 and 2015–16 as these responsibilities were not previously classed as children's social care. We assume that all NHS transfers to local authorities to fund social care are used to fund adult social care services.

Source: DCLG local authority revenue expenditure and financing statistics, 2009–10 to 2015–16 for LA net expenditure on social care. Annex C table C1 of HSCIC *Personal Social Services: Expenditure and Unit Costs England 2015–16* for NHS transfers, Better Care Fund and winter pressures funding.

Taking NHS transfers to LAs into account, public spending on social care fell by 1.0% between 2009–10 and 2015–16 (and increased in real terms from 2012–13 onwards).

Public spending on LA-organised care for adults and for children have followed starkly different paths. Table 5.7 shows public spending on social care for children and adults in each financial year between 2009–10 and 2015–16. Public spending on children's social care has increased in real terms by 12.4% over this period, whilst LA spending on adult social care (excluding NHS transfers) has fallen in real terms by 16.8%. If all NHS transfers contributed to adult social care, then the cut to adult social care has been a much smaller 6.4%.

In addition to these changes in overall spending, demand for publicly-funded social care may have increased as the population has grown. Figure 5.13 shows that after taking into account age-specific population growth, spending per child has increased by 8.1% between 2009–10 and 2015–16. In contrast, spending per adult has fallen by 11.0% after taking NHS transfers into account (or by 21.0% if these transfers are excluded).

The care needs and financial situation (and therefore the ability to pay for care) of the adult population are diverse. Ideally, we would like to examine how LAs have prioritised social care services among different age groups during the period of cuts. Population growth has been strongest among the older population, with 15.6% more individuals aged 65 and over in 2015–16 than in 2009–10, compared with 2.6% more individuals aged 18–64.

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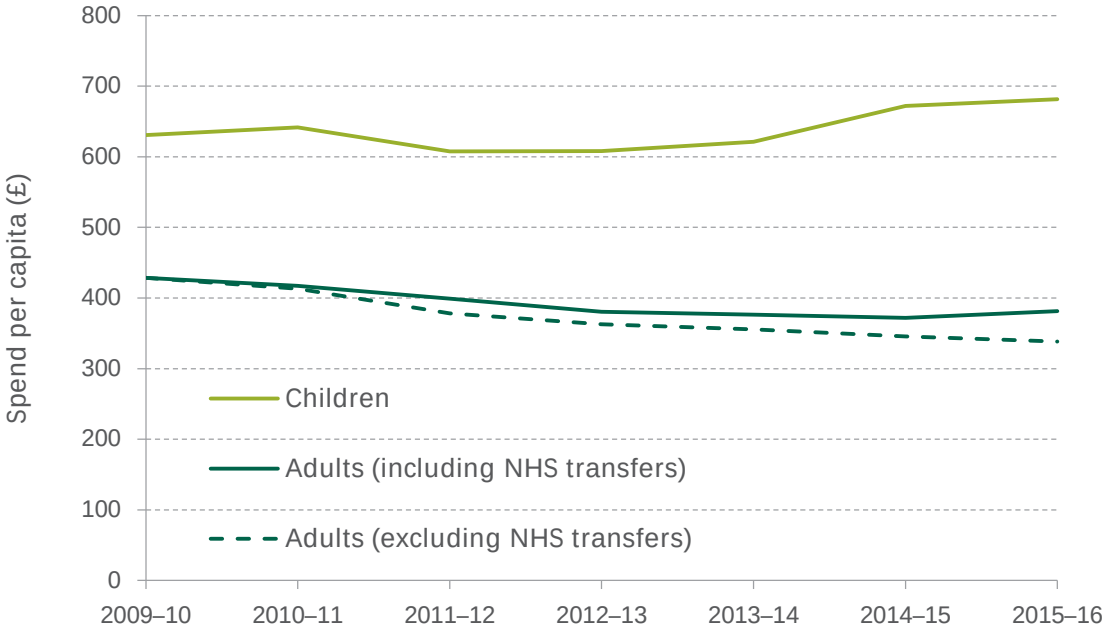
some of the transfer. Consistent with the Health and Social Care Information Centre (and based on NHS England analysis), we assume that a little under half of the minimum funding was spent on adult social care services in 2015–16. In all other years, we include the entire transfer in the measure of social care spending.

Figure 5.13. Public social care spending per capita by age group, 2009–10 to 2015–16 (2016–17 prices)



Source: Spending from DCLG local government revenue expenditure and financing statistics. NHS transfers from annex C of HSCIC *Personal Social Services: Expenditure and Unit Costs England 2015–16*. Population statistics from ONS estimates.

This suggests that total care needs (regardless of how they are financed) probably rose more quickly for older people than for younger adults over this period, and LAs may have chosen to target more resources to services for older people.

On the other hand, the public sector does not provide comprehensive funding for social care, and older individuals, having (potentially) saved over the course of their working lives, may have a greater ability to pay for care. Younger adults who require care will, on average, have had shorter working lives, have saved less and may have a stronger financial need for publicly-funded care. Local authorities may therefore have focused their limited resources on adults of working age.

The structure of the data – with substantial portions of funding unallocated to particular services – makes it hard to allocate spending to narrow age groups. However, with some assumptions, we can allocate spending between adults aged 18–64 and adults aged 65 and over.[43] On this basis, we estimate that public spending on social care for adults (excluding NHS transfers) aged 18–64 has been cut by 6.8% between 2009–10 and 2015–16, whilst spending on those aged 65 and over has fallen by 26.8%. The cut for older adults will be smaller if we have not allocated enough of the 'unallocated' funds to this age group. However, this would mean a correspondingly larger cut to spending on younger adults.

[43] We allocate any spending on adult social care that is not explicitly allocated to either age group ('unallocated spend') in proportion to the share of allocated spending that is labelled as benefiting a particular age group. We also assume that the learning disability and health reform funding added in for 2009–10 and 2010–11 is allocated to each age group in proportion to the share of adults with learning disabilities receiving LA-organised residential care in those years in each age group.

There are no available data that allow us to allocate NHS transfers to specific age groups in 2015–16, so these figures exclude the impact of those transfers. However, for the cuts to be larger among the younger age group than among those aged 65 and over, the latter group would have had to receive more than 97% of those transfers.

Pressures on future social care spending

Forecasting future social care spending is difficult. There are three main areas of uncertainty: demand for care services; cost pressures; and available funding.

First, it is unclear how demand for publicly-funded care will change over time. This depends both on overall demand for care services and on the share of these that the government undertakes to (co-)fund. Given forecast population ageing, demand will increase. However, this may not translate into higher demand for publicly-funded social care if the government responds to age-related increases in demand by tightening eligibility criteria. On the other hand, if the government does not further delay implementation of reforms to social care funding, then the share of social care expenditure covered by the public purse would increase.

Demand for publicly-funded care services may also be limited by the ability of individuals to substitute away from state-provided care, towards privately-funded and informal care. This substitution is possible to a much greater extent for social care than for health care, and it is likely that the ability to use informal and private care will be greater among individuals in the birth cohorts that are currently approaching old age than among individuals in previous, and potentially later, cohorts. Extended life expectancy, particularly for men, is likely to lead to a higher proportion of older people living in couples than before, and therefore increases the potential for (informal) spousal care.[44] Recent cohorts of older individuals are also substantially wealthier than their predecessors, and also than their children are likely to be.[45] As a result, they will have, on average, a greater ability to fund (or co-fund with local authorities) social care privately.

Secondly, even if demand is unchanged, the cost of providing social care services may change. For example, increases in the national living wage (NLW) for those aged 25 and over will increase social care provider costs. The forthcoming exit of the UK from the European Union may also make it harder to recruit staff from the EU and require more spending (through higher wages) to maintain the same level of service. If this is the case, government may choose to increase spending in response.

Finally, we do not know how much money will be available to LAs to fund social care. Local authority revenues, which provide the majority of social care funding, will depend upon both general economic conditions (e.g. how much is collected from business rates) and policy decisions in regards to changes to council tax and the local government funding system. How much of their revenues LAs decide to spend on social care depends not just on demand for social care services, but on demand for the other services LAs provide. The introduction of national eligibility criteria, in terms of both care needs and ability to pay, will limit the ability of LAs to reduce (or limit increases in) social care spending when faced

[44] C. Emmerson, K. Heald and A. Hood, *The Changing Face of Retirement: Future Patterns of Work, Health, Care and Income among the Older Population*, IFS Report R95, 2014, https://www.ifs.org.uk/uploads/publications/comms/r95.pdf.

[45] J. Cribb, A. Hood and R. Joyce, 'The economic circumstances of different generations: the latest picture', IFS Briefing Note BN187, 2016, https://www.ifs.org.uk/uploads/publications/bns/bn187.pdf.

with additional demand by tightening eligibility. As a result, LA spending on social care will be more sensitive to changes in demand for social care in future. Although the reforms to eligibility are desirable in the sense that they reduce variation in access to public social care across the country, they will have consequences for LA budgets, and LAs will have to seek cost reductions in social care or elsewhere.

Over the next few years, the government intends to make additional funding available for social care from the NHS budget and elsewhere. The Better Care Fund will continue, with the government pledging to maintain the mandated NHS contribution in real terms to the end of the parliament.[46] Local authorities will receive new funding from the improved Better Care Fund grant (to be spent as part of the joint budget) and have been allowed to make additional council tax increases from 2016–17 in order to fund adult social care (the so-called 'social care precept'). A one-off grant for 2017–18 was announced in December 2016, but this redistributes, rather than adds to, overall LA revenues.[47]

The revenues LAs receive from the improved Better Care Fund and the social care precept are ring-fenced for spending on adult social care. Together they equate to £3.1 billion of 'extra' funding for adult social care by 2019–20 (assuming LAs use the precept to the maximum and allocate all of this extra revenue to social care). However, the ring fence does not guarantee that LAs will increase social care spending by this amount. The following scenario illustrates this. A local authority initially plans to spend £300 million on social care in a given year. The government then allows it to raise a further £10 million through council tax increases, supposedly to fund additional social care services. This £10 million is reported as spent on social care, but £10 million of main LA budget is moved to fund another service (e.g. waste collection). As a result, the LA still spends £300 million on social care (£10 million of which is nominally funded by the social care precept) and is also able to increase spending elsewhere by the amount it raised. These new sources of funding therefore give councils greater total revenues, but in practice they can decide whether or not to spend them on social care.

Table 5.8 sets out two plausible scenarios for public spending on LA-organised social care from 2015–16 to 2019–20 using funding plans and revenue forecasts where available. Our assumptions in both scenarios include that all councils make full use of the social care precept and that the value of CCG payments into the Better Care Fund going to social care remains flat in real terms.[48]

The scenarios differ only in the assumption about how LAs allocate their spending. In the first column (the 'low spending' scenario), social care spending by LAs made out of their own revenues (i.e. excluding NHS transfers) changes in line with their overall budgets. In other words, LAs do not continue to protect social care from spending cuts. Under these assumptions, real-terms spending on social care would fall by 7.2% between 2015–16 and

[46] Paragraph 1.111 of HM Treasury, *Spending Review and Autumn Statement 2015*, https://www.gov.uk/government/publications/spending-review-and-autumn-statement-2015-documents.

[47] N. Amin-Smith, P. Johnson and D. Phillips, 'How far do today's social care announcements address social care funding concerns?', IFS Observation, 16 December 2016, https://www.ifs.org.uk/publications/8811.

[48] See note to Table 5.8 for more detail. These assumptions differ from those of the OBR in its January 2017 Fiscal Sustainability Report, where all spending as part of the Better Care Fund is allocated to health, and not long-term care, spending. As a result, the OBR's scenario gives a more pessimistic outlook for social care spending.

Table 5.8. Real social care spending required to keep per-capita total spending on social care constant (2016–17 prices), 2015–16 and 2019–20

	Plausible scenario for social care spending (low)	Plausible scenario for social care spending (high)	Per-capita spend held constant at 2015–16 level (incl. Better Care Fund)	Per-capita spend held constant at 2009–10 level
2015–16	£24.4bn	£24.4bn	£24.4bn	£25.8bn
2019–20	£22.6bn	£23.8bn	£25.1bn	£26.6bn
% change, 2015–16 to 2019–20	–7.2%	–2.4%	3.1%	9.2%
Potential spending gap in 2019–20 (low scenario)	–	–	£2.5bn (11%)	£4.0bn (18%)
Potential spending gap in 2019–20 (high scenario)	–	–	£1.3bn (6%)	£2.8bn (11%)

Note: We assume that revenues in 2016–17 are as set out in local authority budgets. The revenue support grant is as set out in the 2017–18 provisional local government finance settlement (December 2016). Any other government grants for which plans are not available (including special grants) are assumed to remain fixed in nominal terms at their 2016–17 level. Retained income from the business rates scheme changes in line with OBR forecasts. The business rates supplement changes at the same rate. All councils make full use of the updated social care precept, increasing council tax by an additional 3% in 2017–18 and 2018–19. We assume that the real-terms value of the Better Care Fund and the share of funding going to social care will remain constant over the entire period.

Source: Authors' calculations using DCLG local government revenue expenditure statistics.

2019–20, from £24.4 billion to £22.6 billion (including £1.84 billion of NHS Better Care Fund spending in each year).

In the second scenario (the 'high spending' scenario), we assume that in years when overall budgets are cut, councils protect social care to the same degree as they did over the period between 2009–10 and 2015–16. In all other years, we assume that social care spending rises in line with overall spending. Under these assumptions, spending on social care would fall by 2.4% between 2015–16 and 2019–20, from £24.4 billion to £23.8 billion (including £1.84 billion of NHS Better Care Fund spending in each year).

One obvious pressure on the demand for social care is population growth and the relative number of adults and children in the population. The third column in Table 5.8 shows how much spending would be required in 2019–20 to keep pace with the growth in the child and adult populations since 2015–16, and so maintain per-child and per-adult spending at the 2015–16 levels (£682 per child and £381 per adult). Taking into account growth in the number of adults and growth in the number of children, spending would need to increase by 3.1%, or 0.8% per year, to maintain per-capita spending for each group over this period. This is equivalent to an additional £753 million (2016–17 prices) of spending for social care in 2019–20 compared with 2015–16, £1.3 billion (6%) more than the 'high' potential

spending scenario in the second column and £2.5 billion (11%) more than the 'low' potential spending scenario set out in the first column.

The final column of Table 5.8 shows how much additional spending would be required to maintain per-capita spending on social care for children and adults at their 2009–10 levels. Given that per-capita spending on social care had already fallen substantially between 2009–10 and 2015–16, a 9.2% real increase in spending would be required between 2015–16 and 2019–20 to restore per-capita spending in the final year to 2009–10 levels. This is equivalent to an additional £2.2 billion (2016–17 prices) being spent on social care in that year compared with what was actually spent in 2015–16, £2.8 billion (11%) more than the 'high' potential spending scenario in the second column and £4.0 billion (18%) more than the 'low' potential spending scenario set out in the first column.

It is again worth noting that we cannot assign social care spending to narrow age groups (beyond children and adults). However, individuals aged 65 and over (and particularly those 85 and above) make up a large share of users of adult social care. Population growth has been particularly strong for this group. As a result of this, these figures are likely to underestimate demographic pressures on adult social care spending.

Demographic pressures mean that if eligibility criteria do not change, LAs must provide care for more people. In addition to demand pressures, the cost of providing care may also rise, reducing the quantity or quality of care that an LA can afford (given a fixed budget). The care industry, perhaps even more so than health, is labour intensive, with many care services involving one-to-one assistance. Labour costs are therefore a significant determinant of the overall cost of care. There are two high-profile pressures on labour costs on the horizon: the introduction of the NLW and the possible labour market implications of Brexit.

A new NLW for employees aged 25 and over of £7.20 an hour was implemented in April 2016. This is forecast by the OBR to increase by 15% to £8.30 in 2019 in nominal terms.[49] Social care is identified by the Low Pay Commission (LPC) as a 'low-pay sector' to which it pays particular attention, and it sees the risk to the sector from minimum wage increases as 'high'. In April 2015, 7.7% of jobs held by those aged 21 and over in social care were paid at the then national minimum wage (NMW) of £6.50 per hour,[50] though the LPC voices concerns that this may underestimate the extent of low pay in the sector given evidence of considerable non-compliance, particularly in the form of non-payment for travel time.[51]

Although the proportion of jobs at the NMW was lower than in other low-pay sectors in 2015, the ratio of the NMW to the median earnings of adults aged 22 years and above in

[49] Supplementary economic table 1.19 of OBR, *Economic and Fiscal Outlook – November 2016*, http://budgetresponsibility.org.uk/efo/economic-and-fiscal-outlook-november-2016/.

[50] LPC, *National Minimum Wage: Low Pay Commission Report Spring 2016*, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/571631/LPC_spring_report_2016.pdf.

[51] See LPC, *National Minimum Wage: Low Pay Commission Report 2014*, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/288841/The_National_Minimum_Wage_LPC_Report_2014.pdf and HM Revenue & Customs, 'National minimum wage compliance in the social care sector', 2013, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/262269/131125_Social_Care_Evaluation_2013_ReportNov2013PDF.PDF.

the sector was 79.5%. As a result, increases in the minimum wage – and the new NLW – could bind for a very large number of workers, and the LPC reported in Autumn 2016 that coverage of the minimum (now living) wage in social care 'more than doubled between 2015 and 2016 – the greatest percentage increase of any sector'.[52] Increases in the NLW planned over the next few years could therefore affect a large proportion of the social care workforce and provide a significant challenge for public funders of social care trying to reducing spending.

A more uncertain risk to costs is the possible knock-on labour market impact of the UK's exit from the EU. What impact this will have on labour costs for social care will depend in large part on the deal reached (in particular the agreement on freedom of labour movement) between the UK and the EU. However, it is worth noting that an estimated 6% of the adult social care workforce in 2015 was of EU (non-British) nationality. This is equivalent to 80,000 jobs.[53] There will also be substantial regional variation in these effects. The rates were 12% in London and 10% in the South East, compared with 1% in the North East. Replacing these workers or facing additional wage levies on employing them could add further to the cost pressures in social care.

5.5 Long-run spending on health and social care

In previous sections, we showed that public spending on health and social care has accounted for an increasing share of national income over time. This trend has been interrupted in recent years with more modest budget increases since 2009–10, and current spending plans indicate this will continue over the next five years. However, over the long term, a number of pressures suggest quicker growth in spending on health and social care than in the rest of the economy. In particular, demographic pressures, low productivity growth in health and social care, and new advancements in medical technology will increase spending in these areas. Understanding how these pressures are likely to affect future spending on health and social care is important when thinking about how care should be organised and funded in future. It also has important ramifications for the wider public finances (see Chapter 3 for more details).

The Office for Budget Responsibility projects spending on health and long-term care as a proportion of GDP over a 50-year period as part of its Fiscal Sustainability Report (FSR).[54] The most recent estimates, published in January 2017, forecast spending on health and long-term care up to 2066–67. Table 5.9 shows the OBR central forecast of health and long-term care spending in 2016–17, 2021–22, and in 10-year intervals between 2026–27 and 2066–67.

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[52] LPC, *National Minimum Wage: Low Pay Commission Report Autumn 2016*, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/575634/10583-LPC-National_Living_Wage_WEB.pdf.

[53] This excludes jobs funded by direct payment recipients and/or the NHS. Source: Skills for Care, 'Nationality of the adult social care workforce, 2015', 2016, https://www.nmds-sc-online.org.uk/Get.aspx?id=/Research/Adult%20social%20care%20workforce%20reports/Reports/Nationality%20of%20the%20adult%20social%20care%20workforce%202015.pdf.

[54] The FSR uses long-term care spending projections from the Department of Health Personal Social Services Research Unit. For more details, see Office for Budget Responsibility, *Fiscal Sustainability Report – January 2017*, http://budgetresponsibility.org.uk/fsr/fiscal-sustainability-report-january-2017/.

Table 5.9. OBR central forecasts for health and long-term care spending in 2016–17 to 2066–67, as a percentage of GDP

	Forecast spending as % of GDP						
	2016–17	2021–22	2026–27	2036–37	2046–47	2056–57	2066–67
Health	7.3	6.9	7.6	9.1	10.3	11.5	12.6
Long-term care	1.0	1.1	1.3	1.6	1.8	2.0	2.0
Combined	8.3	8.0	8.9	10.7	12.1	13.5	14.7

Note: 2016–17 and 2021–22 estimates are consistent with the November 2016 Economic and Fiscal Outlook. Projections for financial years between 2026–27 and 2066–67 are consistent with the central projection of the 2017 FSR. The OBR classifies all spending as part of the Better Care Fund (by both the NHS and local authorities) as health spending. This differs from our treatment of Better Care Funding in Section 5.4, where we apportion part of this funding (£1.84 billion in 2015–16) to spending on local-authority-organised social care.

Source: All projections taken from table 3.7 of OBR, *Fiscal Sustainability Report – January 2017*, http://budgetresponsibility.org.uk/fsr/fiscal-sustainability-report-january-2017/.

The forecasts indicate that health spending might fall from 7.3% of national income in 2016–17 to 6.9% of national income in 2021–22, in line with the health spending plans in the 2015 Spending Review and the November 2016 forecast for GDP growth. Health spending is then projected to increase steadily over time, rising by 5.7% of national income over 45 years to 12.6% of national income in 2066–67. Spending on long-term care is also projected to increase, doubling from 1.0% of national income in 2016–17 to 2.0% in 2066–67.

These increases are driven by a number of factors. Demographic pressures play an important role in increasing spending on both health and long-term care. The ONS forecasts that the proportion of individuals aged 65 years and over will increase from 18.0% of the population in 2016 to 26.1% in 2066. Growth is particularly strong among the oldest individuals, with the share of the population aged 85 years and above set to increase from 2.4% to 7.1% over the same period. As shown in Figure 5.8, older individuals use more health care, on average, than younger individuals. Long-term care is also disproportionately used by older individuals. As a result, the steady ageing of the UK population will increase the demand for both health and long-term care.

However, while demographic pressures account for the majority of the increases in long-term care spending, other non-demographic pressures (such as technological advances in medical equipment) play a larger role in the growth of health spending. For example, NHS England estimates that non-demographic cost pressures added 2.7% to primary care costs and 1.2% to secondary care costs in 2015–16.[55] This compares with demographic pressures of 1.3 percentage points in the same year (averaged across primary and secondary care). Estimates of non-demographic pressures from the International Monetary Fund (IMF) are also substantial, at an average of 2.2% per year between 1995 and 2008.[56] In the latest forecasts, the OBR assumes that non-demographic cost pressures contribute to the

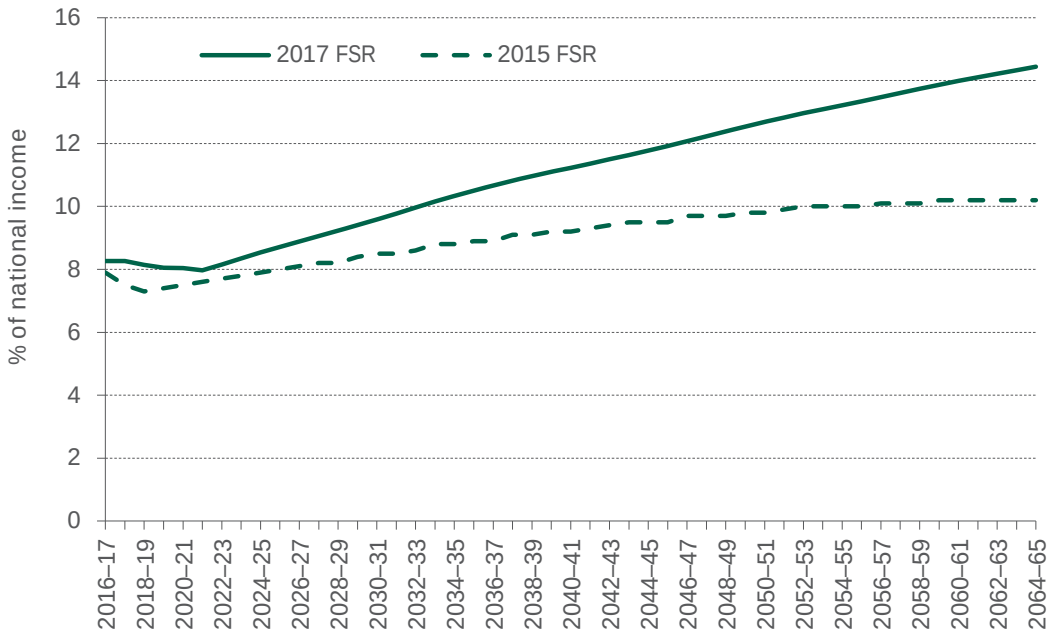
[55] NHS England, 'NHS Five Year Forward View: recap briefing for the Health Select Committee on technical modelling and scenarios', May 2016, https://www.england.nhs.uk/wp-content/uploads/2016/05/fyfv-tech-note-090516.pdf.

[56] International Monetary Fund, 'Macro-fiscal implications of health care reform in advanced and emerging economies', December 2010, http://www.imf.org/external/np/pp/eng/2010/122810.pdf.

increase in health spending up to 2066–67. These costs start at a level consistent with the NHS England cost estimates for 2015–16, before falling to a constant level of 1% per year between 2036–37 and 2066–67.[57]

Forecasting spending over a 50-year period is clearly a difficult task, and the projections are extremely sensitive to the assumptions used. In particular, the assumptions around NHS productivity and non-demographic cost pressures drastically affect the forecasts of health spending. In previous FSRs, the forecasts did not include any non-demographic cost pressures. As a result, the latest forecasts indicate a much steeper rise in health spending than those set out by previous projections. This is demonstrated by Figure 5.14, which shows the combined projection for health and long-term care spending as set out in the 2015 and 2017 FSRs. The 2017 forecasts estimate combined spending at 4.2% of national income higher in 2064–65 than the level indicated by the 2015 forecast. This is due to the inclusion of non-demographic costs for health care, and is more than enough to outweigh new assumptions related to slower population ageing[58] and reduced

Figure 5.14. OBR central forecasts of combined public spending on health and long-term care as a percentage of GDP between 2016–17 and 2064–65, by year of forecast



Source: The 2017 projection combines the central projections of spending on health and long-term care from supplementary table 1.1 of OBR *Fiscal Sustainability Report – January 2017*. The 2015 projection combines the central projections of spending on health and long-term care from supplementary table 1.1 of OBR *Fiscal Sustainability Report – June 2015*.

[57] The 1% figure is consistent with the steady-state cost pressure used in the long-run projections of US health spending by the US Congressional Budget Office.

[58] The 2017 FSR uses population projections estimated by the Office for National Statistics in 2014. These differ from the 2012 estimates used in the 2015 FSR. The later set of population projections indicate stronger growth in the working-age population than first expected, increasing future GDP projections. The 2014 figures also have higher mortality rates for those aged 85 and over. As a consequence, there are fewer individuals aged 85 and over who demand health care in any given year. Both of these factors reduce the estimates of health spending as a proportion of GDP.

morbidity at older ages,[59] which would otherwise reduce projected health spending. It should also be noted that the projections are based on an assumption that productivity in the long-term care sector grows at the same rate as in the rest of the economy, and they take no account of the introduction of the national living wage (which, as discussed in Section 5.4, is expected to add significant costs to care providers). Hence there are good reasons to think that the risks around these projections for long-term care spending are skewed to the upside.

These projections indicate that, regardless of the funding decisions made over the next few years, spending on health and social care is likely to grow substantially going forward. Policymakers must therefore also consider long term solutions to funding these services in addition to the short term decisions currently being debated.

5.6 Conclusion

Since the inception of the publicly-funded health system, UK governments have spent a large and increasing amount on health and social care. However, spending on health and on social care have taken different paths since 2009–10. Health spending increased by 9.0% in real terms between 2009–10 and 2015–16. This is a considerably more generous settlement than most other services (including social care) got and, despite increases being very low by historical standards, the share of service spending accounted for by health spending has continued to rise.

The 2015 Spending Review plans indicate that real NHS spending will increase by £11.6 billion (2016–17 prices), or 11.6% (1.9% per year), between 2014–15 and 2020–21. This increase is larger than that requested by Simon Stevens in 2014. However, this has come partly at the cost of cuts to the wider Department of Health budget. Under the Spending Review plans, DH spending is set to increase by a smaller amount – 7.3% (1.2% per year) between 2014–15 and 2020–21 – implying a real-terms cut to non-NHS DH spending of 20.9%.

Current plans indicate that increases in NHS spending between 2015–16 and 2019–20 will exceed the additional funding required to meet demographic pressures by £1.2 billion (2016–17 prices) in 2019–20. However, these spending increases do not take into account any other cost pressures, and these are likely to be substantial. When considering plans for DH spending, spending in 2019–20 is set to be £1.3 billion below that required to meet the pressures since 2009–10 arising from a growing and ageing population. It is therefore not surprising that there remains pressure on the government to provide additional funding to the NHS (and the wider DH budget) on top of the Spending Review 2015 allocation.

While health spending has increased in England, local authority spending on social care has fallen by 1.0% in real terms between 2009–10 and 2015–16. In per-capita terms, the cut for adults has been 11.0%, and this is likely to be larger for adults over the age of 65.

[59] The 2015 FSR assumes that as life expectancy increases at older ages, individuals spend these additional years in poor health. This is known as ‘expansion of morbidity’ and increases the proportion of life spent in poor health. The 2017 FSR instead assumes that additional years of life are spent entirely in good health. This assumption is known as ‘compression of morbidity’ and acts to reduce the proportion of life spent in poor health. This is in line with other international forecasts and reduces projected health spending at older ages.

These cuts have come despite local authorities prioritising social care in their budgetary choices, and the increasing size of NHS transfers to local authority budgets. NHS transfers have helped to soften the cuts in the short term, but this means that NHS resources are stretched further and less is spent on traditional health services. Looking forward, though real-terms protection has been guaranteed for the NHS transfers until the end of the parliament, real budget cuts to local authorities will mean that the cumulative cut in social care funding between 2009–10 and 2019–20 is likely to increase.

This contrasting pattern of changes to health and social care spending may in part reflect the relative visibility of NHS funding numbers, but may also reflect the ability of individuals to substitute away from publicly-funded care to privately-funded or informal care, in a way that is much less possible for health care. A key policy issue going forward is whether this pattern will continue, and whether planned reforms to the social care system (such as a lifetime cap on the costs that private individuals face) will be implemented.

Regardless of the funding decisions made in the short term, substantial long-run pressures exist. The latest OBR forecasts make welcome changes in the assumptions about non-demographic costs faced by the NHS. However, this reveals that health and long-term care are projected to account for a huge proportion of national income in future. Making sensible decisions over how to organise and fund such a system in the long run are imperative for policymakers, and may involve difficult decisions over revenue raising and spending elsewhere in future.

6. Working-age incapacity and disability benefits

Carl Emmerson, Robert Joyce and David Sturrock (IFS)

Key findings

Incapacity and disability benefits make up a large share of total working-age welfare spending.	Just over half of disabled working-age people who are not in paid work receive disability or incapacity benefits. The government will spend £24 billion on these benefits for 3.5 million working-age people in 2016–17. This is 26% of non-pensioner benefit spending.
There has been a big shift from spending on incapacity benefits to spending on disability benefits over time.	Spending on incapacity benefits is now a smaller share of national income than in any year since 1989–90. In part, that reflects the fact that average awards have fallen from 24% of average earnings in 1986–87 to 19% in 2016–17. Meanwhile, spending on disability benefits for working-age people has consistently grown as a share of national income.
The government has committed to halve the 'disability employment gap'.	17% of people of working age are disabled. 49% of them are in paid work, compared with 81% of the non-disabled. This suggests that the government ultimately wants around one-third of working-age disabled people who are not working to be in work. The employment gap narrowed over the 2000s and has since been stable. Looking at those aged 25 and over, the gap is especially large among the low-educated: 42% versus 85%.
Incapacity benefit claims are increasingly concentrated among the low-educated, and less concentrated among older men, than in the past.	Low-educated men aged 25–34 are now twice as likely to receive incapacity benefits as high-educated men aged 55–64. This will present a significant challenge: closing the employment gap, and reducing the incapacity benefits caseload, will depend on increasing the labour market attachment of an increasingly low-skilled group.

There is considerable variation across Great Britain in the proportion of working-age individuals receiving incapacity benefits.	This proportion varies from 2.2% in the City of London to 13.0% in Blackpool. The proportion of working-age individuals in the ESA support group also varies dramatically.
Recent governments have struggled to achieve what they intended with reforms to incapacity and disability benefits.	In 2012, spending on incapacity benefits was forecast to be 27% lower in 2015–16 than in 2010–11; but instead it was 6% higher. So spending was £15 billion, not £10 billion as forecast. There is a need to avoid over-optimism about what further reform can achieve.
The government has proposed that Jobcentre work coaches have more discretion to engage the ESA support group in work-related activity in a way tailored to individual circumstances.	This is the group assessed as having limited capability for work-related activity, which has unexpectedly become the majority of incapacity benefits claimants. To deliver a substantial impact will certainly require considerably greater resources. The support group is 50% bigger than the group of ESA and JSA claimants (combined) who are already engaged in work-related activity.
Increased discretion could have positive consequences (e.g. engagement tailored to individual circumstances) or negative consequences (e.g. inconsistency in treatment of similar claimants).	The support group is a diverse group with a range of circumstances, and many of them have multiple health conditions. A particular challenge when potentially engaging them in more work-related activity will be treating those with mental and behavioural disorders appropriately. These disorders are now the primary health condition in half of ESA cases.

6.1 Introduction

Close to three-quarters of those aged 16–64 are in paid work. Driven in particular by strong growth in female employment over the last half a century, this is the highest overall employment rate seen in the UK since at least 1971. However, unsurprisingly, employment rates vary across different groups, not least between the non-disabled and the disabled. The Equality Act 2010 defines a disabled person as someone who has a physical or mental impairment that has a 'substantial' and 'long-term' negative effect on their ability to do normal daily activities.[1] According to the Labour Force Survey (LFS), 17% of working-age individuals are disabled on this definition, with 81%of non-disabled working-age individuals in employment compared with just 49%% of disabled people.[2] The government has highlighted, expressed concern, and committed to halve, this 32 percentage point disability employment gap. This goal is the focus of the recent publication *Improving Lives: The Work, Health and Disability Green Paper* produced jointly by the Department for Work and Pensions (DWP) and the Department of Health (DH).[3]

One aspect considered in the Green Paper, and the subject of this chapter, is the role of incapacity and disability benefits. Incapacity benefits – such as employment and support allowance (ESA) – are designed to provide financial support to those who cannot secure an income from employment due to disability or ill health. Disability benefits – such as personal independence payment (PIP) – are designed to compensate for increased costs of living incurred as a result of having a disability or poor health. Box 6.1 provides some more details of these benefits. The LFS suggests that of those working-age individuals who are out of work and disabled, just over half (53%) receive either incapacity benefits or disability benefits or both (16% receive incapacity benefits only, 18% receive disability benefits only and a further 19% receive both). This does mean that around 47% of those who are out of work and disabled (on this definition) receive neither benefit, so it is important to recognise that the benefits system is only a part of what the government should be thinking about.[4] But it is a significant part and, as we shall see, it is an area of spending that has proven difficult to control and to predict, and a policy area that has been challenging in the sense that reforms have not always had the intended consequences.

In 2016–17, the government is forecast to spend £24.4 billion on disability and incapacity benefits for working-age people. This amounts to:

- 26% of non-pensioner benefit spending;
- £14.8 billion of spending on incapacity benefits and £9.5 billion on disability benefits;
- incapacity benefits payments to 2.5 million, or 6%, of working-age individuals in Great Britain, at an average rate of £116 per week;
- disability benefits payments to 2.1 million, or 5%, of working-age individuals, at an average rate of £88 per week;[5]

[1] See https://www.gov.uk/definition-of-disability-under-equality-act-2010.

[2] Individuals aged 16–59 (women) or 16–64 (men) in LFS 2015Q4 to 2016Q3.

[3] Published in October 2016. See https://www.gov.uk/government/consultations/work-health-and-disability-improving-lives. Hereafter referred to as 'the Green Paper'.

[4] Average over out-of-work disabled individuals aged 16–59 (women) or 16–64 (men) in LFS 2015Q4 to 2016Q3.

[5] DWP caseload for 2016–17.

- 3.5 million, or 9% of the working-age population, receive at least one of these benefits, with 1.3 million working-age individuals receiving both types of benefits;[6]
- £2.4 billion (17% of incapacity benefits spending) of spending on those in the ESA WRA group, £11 billion (74% of incapacity benefits spending) on those in the ESA support group (with the remaining £1.3 billion or 9% going on those still in the assessment phase or on other incapacity benefits such as IB and SDA).

Box 6.1. Incapacity and disability benefits[a]

The current incapacity benefit for which new claimants are considered is employment and support allowance, which has replaced incapacity benefit (IB) and severe disablement allowance (SDA). In the vast majority of cases, ESA claimants must undergo a work capability assessment (WCA) to establish the potential for them to return to work. Exceptions to this include, for example, those with a terminal illness. The WCA determines whether the claimant can carry out a range of activities, both physical and cognitive. A points-based system is used to determine whether the claimant has met the eligibility threshold. Following the WCA, those deemed eligible for ESA are placed either in the work-related activity (WRA) group – in which case they have to attend regular meetings with a Jobcentre work coach aimed at helping them to return to work – or the support group – in which case the individual is eligible for a more generous rate of ESA and there is no conditionality (although they can volunteer for job support if they wish, but very few do).

ESA claimants in either group can also get disability premiums. Eligibility for these is dependent on also receiving certain rates of disability benefits (see below), except that those in the support group are automatically entitled to the 'enhanced disability' premium (currently £15.75 per week). Some small amounts of 'permitted work' can be done by ESA claimants without affecting ESA entitlement (see Section 6.3 for further details). Including premiums, the average incapacity benefits award is currently £116 per week.

For those of working age, the primary disability benefits are disability living allowance (DLA) and its replacement, personal independence payment. PIP recipients may receive either or both of a 'daily living' component, paid if the individual needs assistance with any of a range of activities such as eating and washing, and a 'mobility' component, paid if the individual needs help to move around. Both may be paid at either a standard or an enhanced rate. The average disability benefits award for those of working age is currently £88 per week.

[a] For full details of how the incapacity and disability benefits systems work and of the rates, see A. Hood and A. Norris Keiller, 'A survey of the UK benefit system', IFS Briefing Note BN13, 2016, https://www.ifs.org.uk/publications/1718.

[6] See page 53 of Department for Work and Pensions and Department of Health, 'Technical annex to Improving Lives: the Work, Health and Disability Green Paper', October 2016, https://www.gov.uk/government/statistics/work-health-and-disability-green-paper-data-pack. Hereafter referred to as 'the Green Paper Technical Annex'.

Clearly, these benefits are significant, both in fiscal terms and as a source of income for a large number of people. Indeed, there are claimants who have little or no other income. For example, a single claimant without children who is not on DLA/PIP may, after rent, have only their £73.10 (if in the ESA WRA group) or £125.55 (if in the ESA support group) of ESA per week. Central issues for policymakers include whether sufficient financial support is being provided to the right individuals, whether such support is conditional on an appropriate degree of work search or work-related activity, and whether claimants (including those with evolving or fluctuating health conditions) are getting an appropriate level, and type, of engagement from Jobcentres.

The government has stated that the Green Paper is not seeking to make further cuts to the generosity of the social security system but instead is focused on attempting to reduce the disability employment gap. This is in contrast to reforms announced since 2010: the Office for Budget Responsibility (OBR) estimates that these will have the effect of cutting spending on incapacity and disability benefits in 2020–21 by a total of £4.6 billion, relative to the counterfactual of no reforms being announced (comprising £2.5 billion from incapacity benefits and £2.1 billion from disability benefits, noting that some of this will affect those over the state pension age).[7] Note that actual spending is forecast to increase in real terms by £4.5 billion, from £21.3 billion to £25.8 billion (in 2016–17 prices), over the decade from 2010–11.

These reforms have been far from uncontroversial. Of course this is a difficult area of policy. But symptoms of problems are widespread. First, the WCA and (until March 2015) its administration by Atos has been subject to much criticism, not least by the National Audit Office.[8] Second, 8% of those deemed to be fit for work by the WCA over the period from October 2013 to March 2016 (35,000 individuals) went to an appeal tribunal, and in 57% of cases the appeal was upheld.[9] This is arguably suggestive of a system that is not working well. Third, as we describe in Section 6.2, recent reforms have not reduced spending by as much as intended. Fourth, in response to this failure to cut spending as intended, in the March 2016 Budget the government announced it would implement a reform to remove eligibility for PIP from those deemed to have the lowest-cost disabilities in order to reduce spending in 2019–20 by £1.3 billion. The then Secretary of State for Work and Pensions, Iain Duncan Smith, resigned and the Government backtracked on the policy two days after the Budget.

Trends in working-age disability and employment

Over the past 15 years, recorded rates of disability amongst those of working age have increased. The rate of disability among women aged 25–59 and men aged 25–64 rose from 15.9% in the year up to 2001Q1, to 18.5% in the year up to 2003Q2, and then to 19.5% in the year up to 2016Q3.[10] This has been driven in part by higher reported rates of mental

[7] See chart 5 on page 11, of the Office for Budget Responsibility, *Welfare Trends Report: October 2016*, http://budgetresponsibility.org.uk/docs/dlm_uploads/Welfare-Trends-Report.pdf.

[8] See National Audit Office, *Contracted-Out Health and Disability Assessments*, January 2016, https://www.nao.org.uk/report/contracted-out-health-and-disability-assessments/.

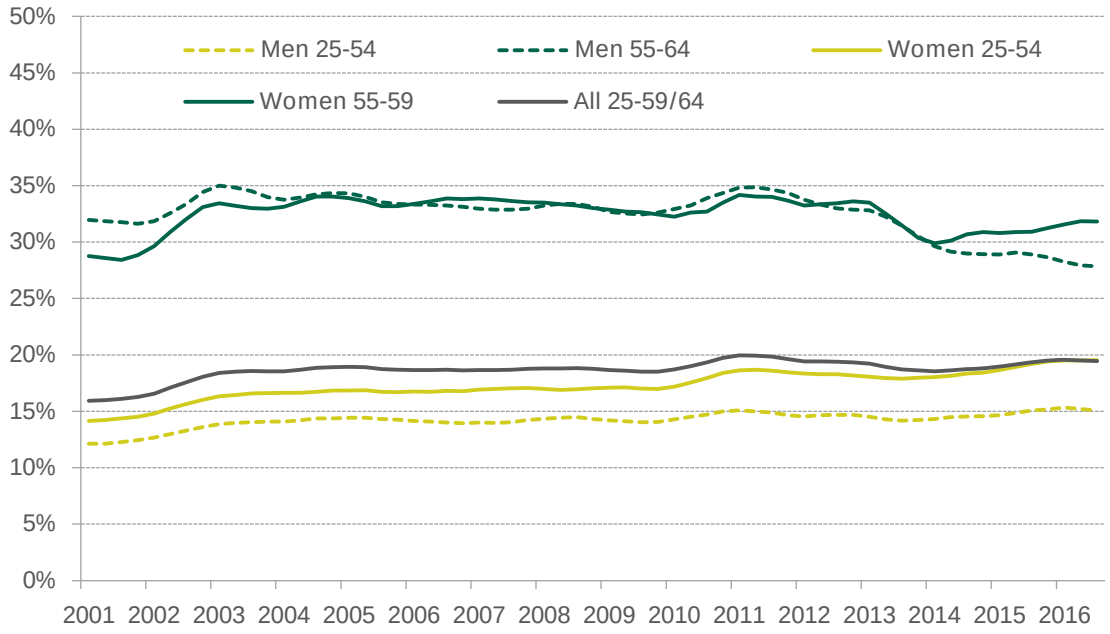
[9] See Department for Work and Pensions, 'ESA: outcomes of work capability assessments including mandatory reconsiderations and appeals', December 2016, https://www.gov.uk/government/statistics/esa-outcomes-of-work-capability-assessments-including-mandatory-reconsiderations-and-appeals-december-2016.

[10] Here we use data from the LFS designed to capture disability according to the Disability Discrimination Act 1995 definition. We do this as data based on the Equalities Act 2010 definition are not available for earlier years.

illness among young people. The extent to which this reflects changes in awareness of, and willingness to seek help for, mental health problems, as opposed to increased prevalence of mental health issues, is unclear.[11] Figure 6.1 shows the four-quarterly rolling average of the disability rate across this period, for different age groups, split by sex. Rates of disability are, unsurprisingly, higher for older individuals than for younger individuals. At younger ages, disability is both more prevalent and growing at a faster rate among women than among men. Looking at those closer to the state pension age, the disability rates of men and women had remained close to each other for the decade from 2004 to 2013. Since then, the disability rate of older males has continued to fall, while that of older women has risen slightly, such that older women are now significantly more likely to be disabled than their male counterparts.

As the government has highlighted, the employment rate of disabled individuals is significantly lower than that of non-disabled individuals. Figure 6.2 shows that this 'disability employment gap' fell over the decade from 2001 to 2010 but has not fallen significantly since then. This is true in aggregate and across age groups and sexes. The latest data show that the gap is currently smallest among younger women, and slightly larger among older men than among older women or younger men.

Figure 6.1. Rates of disability by age and sex (2001 to 2016)

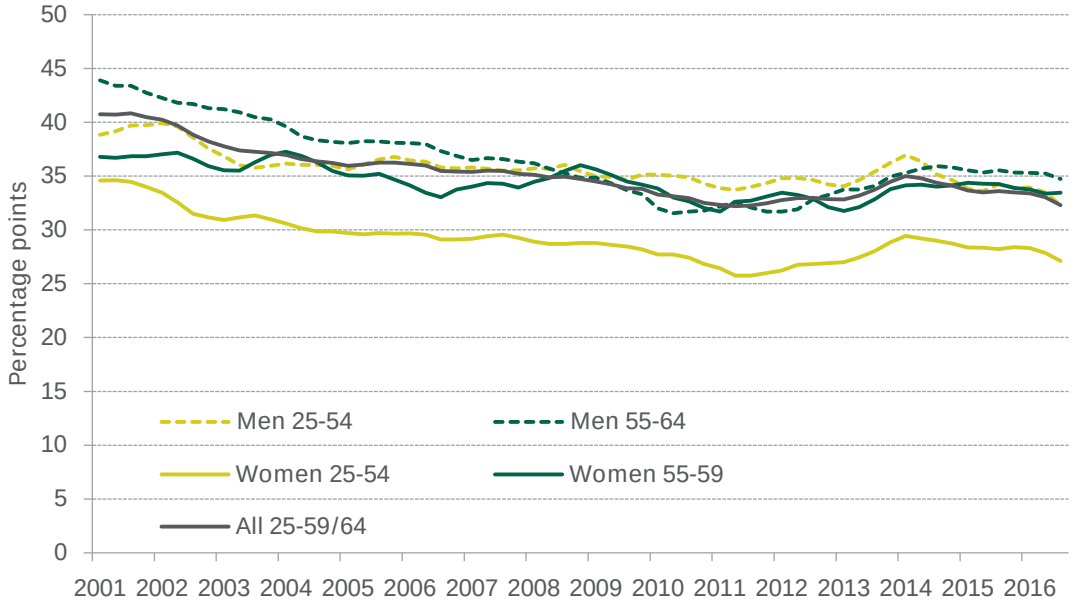


Note: Figure shows four-quarterly moving average of rates of disability. Disability is defined using a series of questions designed to measure the Disability Discrimination Act 1995 definition of disability. While the Equalities Act 2010 supersedes the DDA 1995, LFS data only consistently attempt to measure the latter and trends are comparable.

Source: Authors' calculations using data from the Labour Force Survey.

[11] See *Adult Psychiatric Morbidity Survey 2014*, NatCen Social Research and the Department of Health Sciences, University of Leicester, 2016, http://content.digital.nhs.uk/catalogue/PUB21748/apms-2014-full-rpt.pdf.

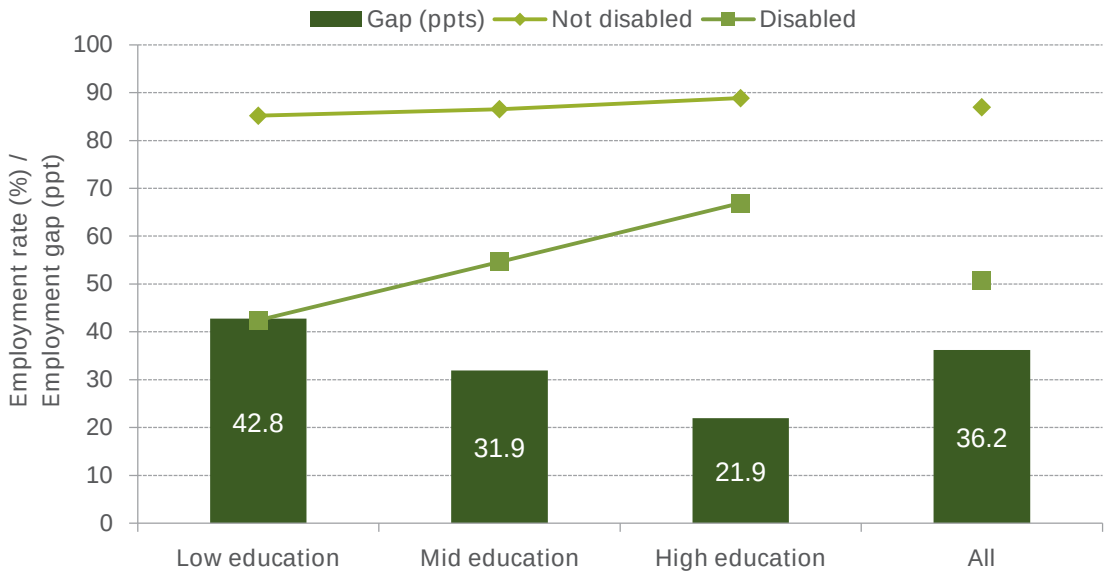
Figure 6.2. Disability employment gap by age and sex (2001 to 2016)



Note: Disability employment gap is the difference between the employment rate of those reporting as disabled and those reporting as not disabled. Figure shows four-quarterly moving average of rates of the disability employment gap.

Source: Authors' calculations using data from the Labour Force Survey.

Figure 6.3. Employment rate, by Equalities Act 2010 status and education, and resulting disability employment rate gap



Note: Data from 2015Q4 to 2016Q3 inclusive.

Source: Authors' calculations using data from the Labour Force Survey.

The disability employment gap also varies significantly across education groups, as illustrated in Figure 6.3.[12] While non-disabled individuals who are highly educated are only slightly more likely to be employed than those with lower levels of education, more highly educated disabled individuals have an employment rate that is over 20 percentage points higher than that of low-educated disabled individuals. This matters not least because 54% of disabled individuals have a low level of education (having left school at the compulsory attendance age, or before), compared with just 36% of the non-disabled population. Whereas one-in-nine of those with high education (having left school after age 18) have a disability, this is true of one-in-four of those with low education. Therefore it looks as if any serious reduction in the disability employment gap is likely to require a significant increase in employment among disabled individuals with relatively low levels of education. Overall, the numbers in Figure 6.3 imply that halving the disability employment gap – as the government intends – would involve cutting the proportion of working-age disabled people who are not in paid work by around one-third (assuming that the target is not met through reductions in employment rates among the non-disabled).

This chapter focuses on the design of the support provided by incapacity benefits and disability benefits which, as already mentioned, are received in some combination by just over half of out-of-work disabled individuals of working age. Section 6.2 looks at some of the broad trends in spending and benefit receipt. Section 6.3 discusses the principles and current practice in the design of incapacity and disability benefits and how this will change as universal credit (UC) is rolled out. Section 6.4 provides more detail on the characteristics of those receiving incapacity benefits and sets them in the context of the Green Paper proposals and the goal to halve the disability employment gap. Section 6.5 concludes.

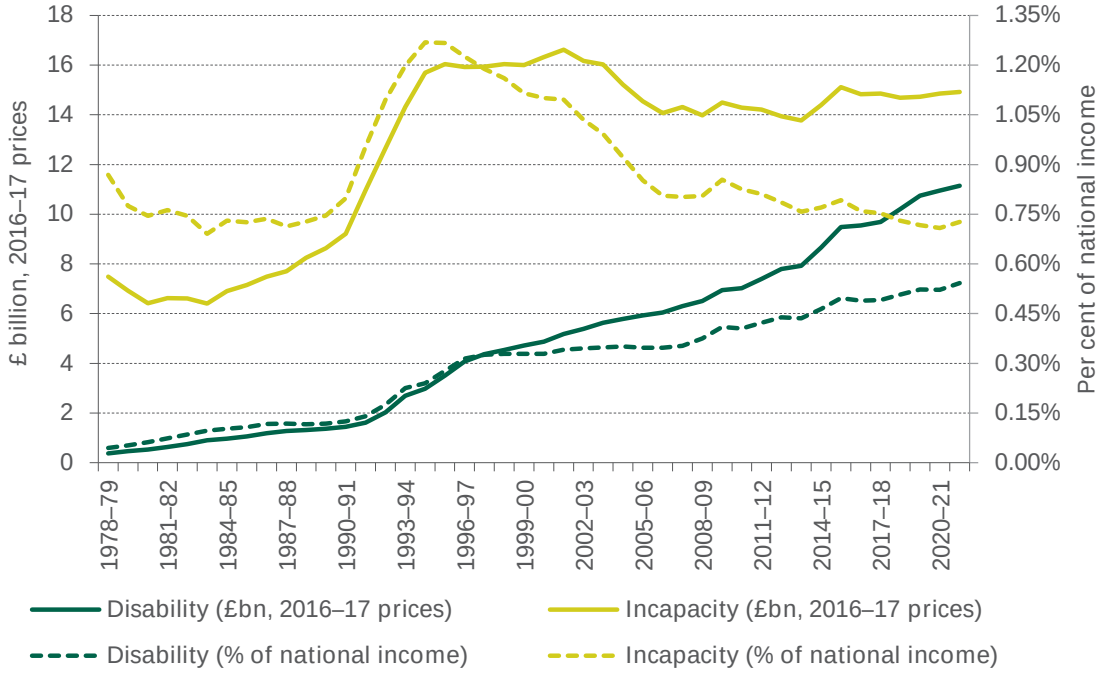
6.2 Patterns of spending on incapacity and disability benefits

In broad terms, we have witnessed a big shift in the mix of spending since the mid 1990s, away from incapacity benefits and towards disability benefits. Spending on working-age incapacity benefits as a percentage of national income is currently at its lowest level since 1989–90 and is forecast to reach its lowest level for over 40 years by the end of this parliament. In real terms, it has changed little in the past decade, is lower than it was 20 years ago, and is forecast to rise by less than 1% in real terms over the next years. By contrast, working-age disability benefits spending has been growing both in real terms and as a percentage of national income. Over the next five years, it is forecast to continue growing in real terms, but to stabilise as a share of national income. These long-run trends in spending on incapacity and disability benefits for those of working-age are shown in Figure 6.4. In 1994–95, spending on incapacity benefits was 5.3 times that on disability benefits for those of working age. This multiple has now fallen to 1.6 and is forecast to continue falling such that by 2021–22 it will be 1.3.[13]

[12] Note that here we use the information in the LFS data which captures the Equalities Act 2010 definition of disability.

[13] One interruption to the recent trends outlined above is the sharp growth in spending on both types of benefits between 2013–14 and 2015–16. In part this was caused by the rate of inflation falling after benefit rates were set, which pushes up average awards in real terms. These two years also saw falling inflation as measured by the Consumer Prices Index (CPI), which, because benefits are typically updated each April with reference to the rate of inflation observed in the previous September, means that benefit levels are higher in real terms when deflated by out-turn CPI. The converse occurs when inflation rises. There was also a sharp

Figure 6.4. Spending on working-age incapacity and disability benefits in Great Britain (1978–79 to 2021–22)



Note: 'Incapacity benefits' include ESA, IB, SDA, invalidity benefit, sickness benefit, and income support on grounds of disability. 'Disability benefits' include DLA, PIP, attendance allowance and mobility allowance.

Source: Authors' calculations using DWP expenditure and caseload tables 2016.

Much of the rapid rise in incapacity benefits spending in the late 1980s and early 1990s was accounted for by the doubling in caseload over this period, from 1.3 million in 1986–87 to 2.6 million in 1996–97.[14] This increase did not result from any explicit reform to the system. But it did eventually trigger a significant reform in April 1995 to try to bring the caseload down, when IB replaced invalidity benefit. The unemployment rate – which in the UK ran at above 5.8% for the whole of the 1980s and 1990s – has been shown to be one determinant of reduced off-flows from these benefits in this period.[15]

Since 2003–04, there has been a gradual decline in the incapacity benefits caseload, to 2.5 million in 2016–17. Meanwhile, average real weekly spending on incapacity benefits per claimant is £116 in 2016–17, compared with £111 per person in 1986–87 (in 2016–17 prices). This is the net result of a rise in the average weekly award to £126 by 1996–97, followed by a fall to £106 by 2010–11, and subsequent rises over the last parliament (as a large – and larger-than-expected – number of ESA claimants moved into the support

increase in the disability benefits caseload and average generosity of payment, coinciding with the roll-out of PIP. This was partly driven by the fact that a greater share of claimants were awarded the higher rate of the daily living component than were awarded the higher rate under DLA (Office for Budget Responsibility, *Welfare Trends Report: October 2016*, http://budgetresponsibility.org.uk/docs/dlm_uploads/Welfare-Trends-Report.pdf).

[14] For a discussion of these trends see, for example, M. Anyadike-Danes and D. McVicar, 'Has the boom in incapacity benefit claimant numbers passed its peak?', *Fiscal Studies*, 2008, 29, 415–34, http://www.ifs.org.uk/publications/4471.

[15] See R. Disney, and S. Webb, 'Why are there so many long term sick in Britain?', *Economic Journal*, 1991, 101, 252–62.

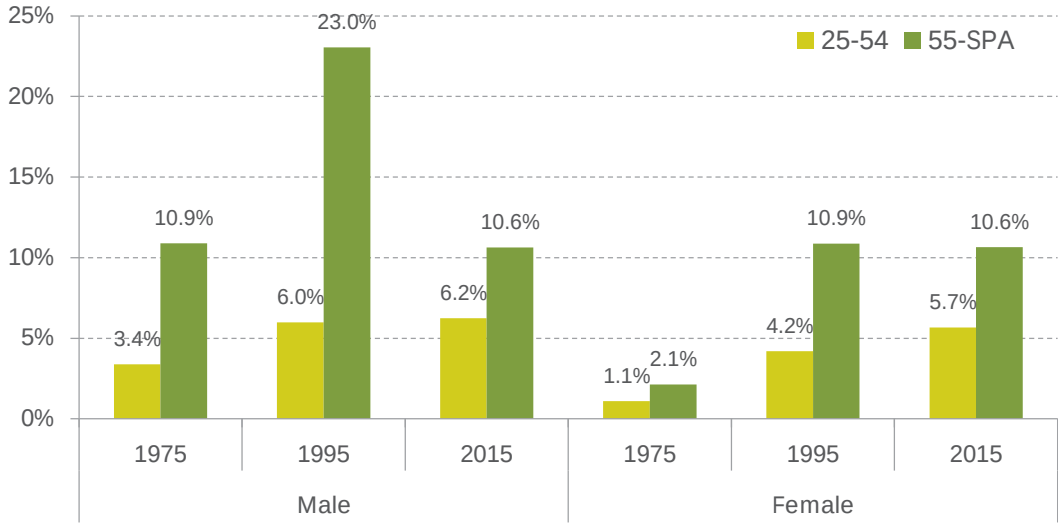
group rather than the WRA group, as discussed later around Figure 6.9). It is worth noting that we are comparing amounts over time after adjusting for CPI inflation, but until 2011 these benefits were typically increased in line with RPI inflation (which is now thought to overstate true inflation) – hence historical changes in awards look more generous in real terms now than they did at the time. As a share of male full-time average earnings, the average award has fallen from 24% in 1986–87 to 19% in 2016–17.

The disability benefits caseload has grown fairly steadily since the introduction of DLA in the early 1990s. Along with a moderate increase in the average real generosity of disability payments, this has driven the consistent rise in disability spending.

Figure 6.5 illustrates the change in incapacity benefits claimant rates for men and women at both younger and older ages. This shows some stark patterns. A large portion of the rise of the incapacity benefits claimant rate between 1975 and 1995 was amongst older men, and this has been almost completely reversed since then. Claimant rates of women have been catching up with those of men (at least in part due to higher employment rates for women meaning that they are subsequently more likely to be able to qualify for contributory incapacity benefits), and have been growing particularly strongly for those aged 25 to 54. As a result, while claim rates are still higher among older individuals than among younger individuals, this is true to a much lesser extent than in the past.

Using the Labour Force Survey rather than administrative data, we can also examine the way that trends in claimant rates vary by levels of education. Figure 6.6 updates previous work by IFS researchers[16] and shows a striking decrease in rates of incapacity benefits

Figure 6.5. Recipient rates for incapacity benefits in 1975, 1995 and 2015 (for age 25 to 54 and 55 to state pension age (SPA), by sex)

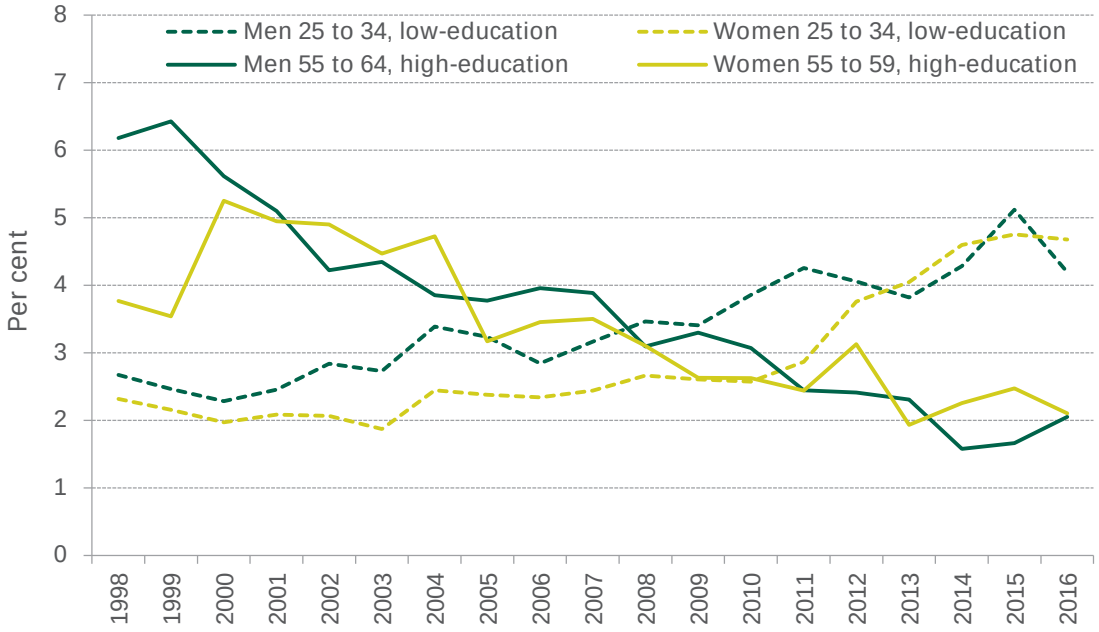


Note: 'Incapacity benefits' are here defined as IB and ESA.

Source: Authors' calculations using data from the DWP benefit caseload tabulation tool, Economic Research Institute of Northern Ireland and ONS population estimates and projections.

[16] See J. Banks, R. Blundell and C. Emmerson, 'Disability benefit receipt and reform: reconciling trends in the United Kingdom', *Journal of Economic Perspectives*, 2015, 29(2), 173–90.

Figure 6.6. Recipient rates for incapacity benefits among selected age, sex and education groups over time (1998 to 2016)



Note: Data run from 1998Q2 to 2016Q3. 'Low education' corresponds to leaving education at or before the compulsory school-leaving age, while 'high education' corresponds to leaving education after age 18. The middle-educated group (and middle age groups) are excluded from the figure.

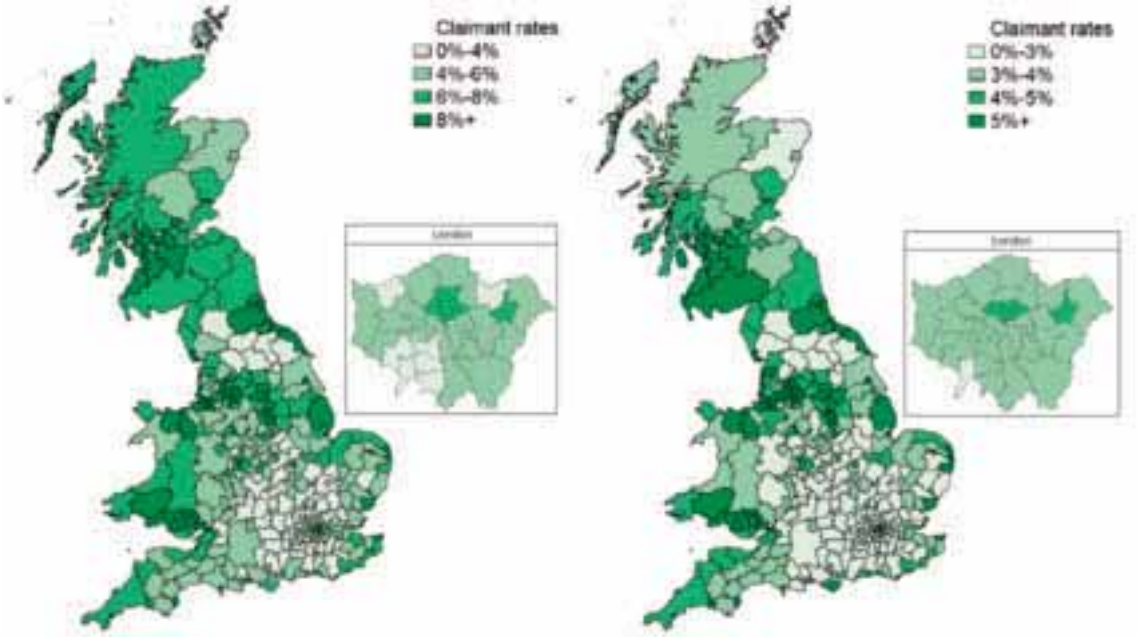
Source: Authors' calculations using data from the Labour Force Survey.

receipt among those who are older and more highly educated, from just over 5% in the early 2000s to around 2% in 2016. Meanwhile, claimant rates among the young and low-educated have approximately doubled. The likelihood of claiming incapacity benefits is now much better predicted by education level, and much less well predicted by age, than used to be the case. It is likely that the declining association with age is related to an increasing prevalence of mental health problems relative to physical health problems (see Section 6.4). But whatever the cause, the result is striking: in 1998, men aged 55–64 with high education were 2.3 times more likely to be in receipt of incapacity benefits than men aged 25–34 with low education; but by 2016, the younger low-education group of men were twice as likely to be receiving incapacity benefits as the older high-education group.

Incapacity and disability benefits policy matters considerably more in some parts of the country than others. Figure 6.7, reproduced from work by the Centre for Regional Economic and Social Research (CRESR) at Sheffield Hallam University,[17] shows that incapacity benefits claimant rates among those of working age vary from 2.2% in the City of London to 13.0% in Blackpool. More broadly, in certain parts of the country – the South West of Scotland, South Wales, the North East of England and Merseyside – claimant rates consistently exceed 8%, whereas in much of the South of England the claimant rate is below 4% (left-hand map). The map on the right shows that a similar geographic pattern

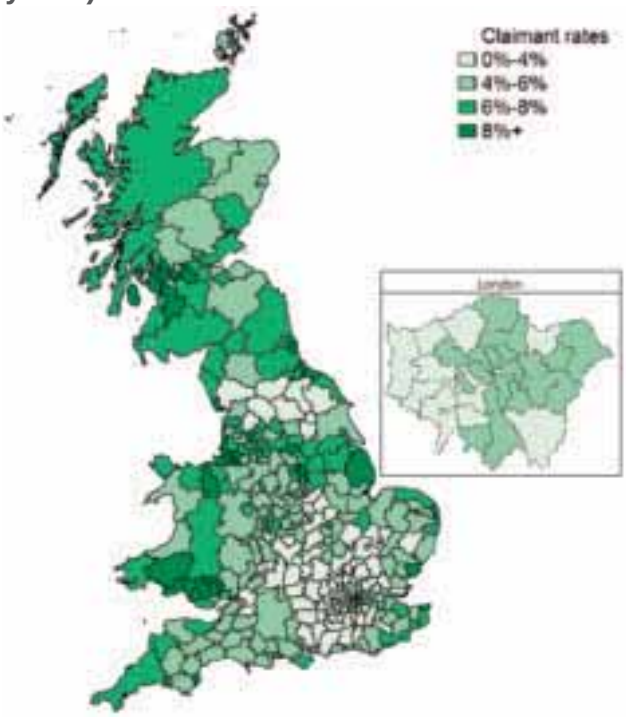
[17] C. Beatty and S. Fothergill, *Jobs, Welfare and Austerity: How the Destruction of Industrial Britain Casts a Shadow over Present-Day Public Finances*, CRESR, Sheffield Hallam University, 2016, http://www4.shu.ac.uk/research/cresr/sites/shu.ac.uk/files/cresr30th-jobs-welfare-austerity.pdf (using DWP and ONS data).

Figure 6.7. Percentage of 16- to 64-year-olds claiming any incapacity benefits (left) and in ESA support group (right), by local authority (February 2016)



Source: The left-hand map is reproduced from C. Beatty and S. Fothergill, *Jobs, Welfare and Austerity: How the Destruction of Industrial Britain Casts a Shadow over Present-Day Public Finances*, CRESR, Sheffield Hallam University, 2016, http://www4.shu.ac.uk/research/cresr/sites/shu.ac.uk/files/cresr30th-jobs-welfare-austerity.pdf (with the permission of the authors). The right-hand map uses data from the Green Paper Technical Annex.

Figure 6.8. Percentage of 16- to 64-year-olds claiming disability benefits, by local authority (February 2016)



Source: Reproduced from C. Beatty and S. Fothergill, *Jobs, Welfare and Austerity: How the Destruction of Industrial Britain Casts a Shadow over Present-Day Public Finances*, CRESR, Sheffield Hallam University, 2016, http://www4.shu.ac.uk/research/cresr/sites/shu.ac.uk/files/cresr30th-jobs-welfare-austerity.pdf (with the permission of the authors).

holds if we look specifically at those claimants in the ESA support group, who will – due to the government's Green Paper – be the subject of much of the discussion in Section 6.4. Figure 6.8, again reproduced from work by CRESR, shows that disability benefits claims among those of working age are concentrated in similar parts of the country.

Recent out-turns relative to forecasts

Over the last parliament, spending on both disability and incapacity benefits consistently exceeded forecasts. In the case of incapacity benefits, this was driven largely by the failure of the caseload to fall as expected. At Autumn Statement 2012, the OBR assumed that, as the roll-out of the replacement of IB with ESA continued, the incapacity benefits caseload would fall by 21% by 2015–16 compared with its level at the start of the parliament.[18] This assumption turned out to be very inaccurate: the caseload actually only fell by 4% over this period. Combined with a 10% increase in average awards (compared with a forecast decline of 8%), this resulted in a total rise in real spending of 6% over the last parliament, compared with the Autumn 2012 forecast fall in spending of 27%. This forecast error in average award for incapacity benefits recipients is partially explained by many more claimants being placed into the support group than was expected. At Autumn Statement 2012, the OBR forecast that by 2015–16, the ESA support group would be one-quarter of the size of the WRA group. In reality, the support group was 3.4 times as large as the WRA group that year, meaning that a much higher proportion of recipients were entitled to the support group premium.

The stubbornness in the incapacity benefits caseload comes in the context of a longer-term failure to meet aspirations to reduce the number of claimants. In 2005, the then Labour government set a target to have 1 million fewer incapacity benefits claimants in 2015 than in 2005, in part as a result of replacing IB with ESA. We now know that the claimant count fell by less than 300,000 over that decade.

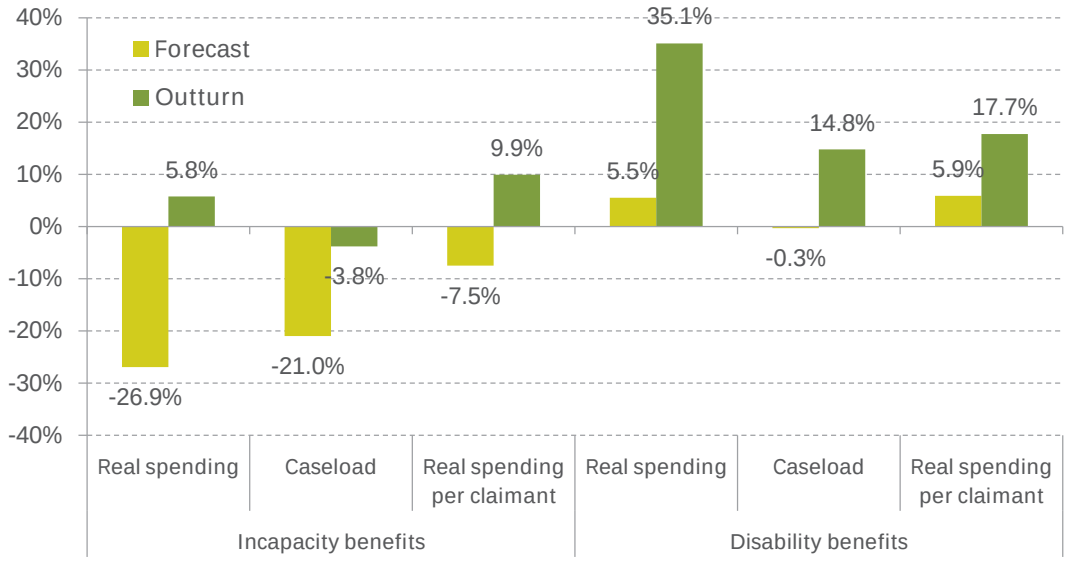
On disability benefits, the Autumn 2012 forecast was for the caseload to fall marginally as DLA began to be replaced by PIP, and for both average spending per claimant and total real spending to increase by 6% over the five years from 2010–11 to 2015–16. In reality, the caseload and average spend per claimant increased by 15% and 18% respectively, leaving real-terms disability spending 35% higher in 2015–16 than in 2010–11. The higher average generosity than forecast was due in part to a greater share of claimants being awarded the higher rate of PIP than had been the case under DLA. These discrepancies between forecasts and out-turns are summarised in Figure 6.9.

In its own analysis of these patterns in the most recent *Welfare Trends Report*, the OBR states that 'the major structural reforms to the incapacity and disability benefits systems have proceeded more slowly than expected and have saved less than initially predicted' and that 'the pattern of revisions to our forecasts for incapacity and disability benefits and to the rollout of universal credit highlight how the impact of these sorts of structural reforms is particularly hard to forecast and prone to optimism bias'.[19] Avoiding such

[18] We use the Autumn 2012 OBR forecast as our baseline for comparison as this was the point at which the government announced the 1% uprating of the assessment phase and WRA component of ESA. Since this point, policy on the rates of disability and incapacity benefits has not changed, so forecasts can be sensibly compared with out-turns.

[19] Office for Budget Responsibility, *Welfare Trends Report: October 2016*, http://budgetresponsibility.org.uk/docs/dlm_uploads/Welfare-Trends-Report.pdf.

Figure 6.9. Autumn Statement 2012 forecasts for working-age incapacity and disability benefits spending growth from 2010–11 to 2015–16, compared with the latest out-turn



Note: 'Incapacity benefits' is the DWP definition (includes IB, ESA and SDA for those of working age). 'Disability benefits' is the DWP definition (includes DLA and PIP for those of working age).

Source: HM Treasury, *Autumn Statement 2012*; DWP expenditure and caseload tables 2016; authors' calculations.

optimism bias, and forming plans of sufficient detail to be reasonably confident that they can deliver roughly what is intended, will be one key challenge for the government when implementing whatever reforms follow the Green Paper.

6.3 The structure of financial support: principles and practice

As outlined in the introduction, there are two main routes through which ill health or disability can have detrimental impacts on the finances of those affected. First, it can directly add to the cost of living by creating needs that have to be paid for (e.g. a mobility scooter). This is recognised in the welfare system through *disability benefits*: in particular DLA and PIP, for those of working age. Second, ill health can limit one's ability to secure income from paid work. *Incapacity benefits* are the benefit system's response to this: in particular ESA, and its counterparts in UC, which is replacing income-related ESA as it is rolled out. Although many health conditions fall into both of the above categories, the overlap is far from perfect: for example, there are people whose disability leads to substantial extra costs of living but who can still earn a decent income from paid work. Hence this may justify the benefits system having two distinct tools to address these two consequences of ill health. Of course, in addition to those tools, the state also provides substantial support to working-age individuals in ill health through the NHS and social care; this is analysed in Chapter 5.

What about how the level of financial support is structured? For disability benefits, one might argue that the answer should be very simple: these benefits are there to cover (some of) the direct costs of disability, and a mobility scooter (for example) costs the same

regardless of income, so the level of support for disability should be invariant to income. This would imply that there should be no form of means-testing (or taxation) of disability benefits. On the other hand, one might argue that higher-income people are better placed to bear the risk of disability themselves (e.g. by saving) or that extra costs simply have less impact on their welfare than an equivalent extra cost for someone on a lower income. In these cases, one might want some element of means-testing or taxation of disability benefits.

How are our disability benefits actually designed? On the face of it, they are neither means-tested nor taxable: given the outcome of a health assessment, the support given through disability benefits is the same regardless of how much income or assets the person has. In practice, however, receipt of disability benefits can entitle claimants of out-of-work benefits to disability premiums. Although these premiums show up as spending on those out-of-work benefits, for the most part they are effectively targeted additional disability benefits focused specifically on the very poorest (in the case of income-related ESA), plus a smaller group of people with some history of paid work whose ability to work is now limited by health but whose family may have other income (in the case of contributory ESA).[20] Hence the additional support provided in light of the extra costs of disability is in effect somewhat means-tested (but, unlike a typical means-tested benefit, people of all income levels can get some support for the costs of disability).

For incapacity benefits that support people whose ability to work is limited by ill health, one approach would be a scheme to compensate for (some portion of) the earnings that those people miss out on. Economically, there is a potential rationale for this because insurance against ill health is the kind of good in which a private market may fail to operate well. The US system of Social Security Disability Insurance is a scheme of this kind. In the UK, though, there is little or no relationship between previous earnings and the level of incapacity benefits entitlement. Contributions-based ESA is available if earnings in the previous two tax years were above a certain level, but beyond that there is no relationship between previous earnings and the level of entitlement (and for the WRA group it is now available for only one year). Meanwhile, income-based ESA, which 80% of ESA recipients are claiming, provides an income floor irrespective of prior earnings. Hence our incapacity benefits are better understood as a part of the welfare safety net than as an earnings-replacement scheme.

ESA currently provides a higher safety net for out-of-work individuals than the safety net provided to people on out-of-work benefits for reasons other than ill health (i.e. people on jobseeker's allowance (JSA) or income support). From April 2017, this will no longer be true for new ESA-WRA recipients, for whom ESA will be cut from £102 to £73 per week so that it is aligned with the JSA rate. To give a sense of scale of the long-run impact of this change, the ESA-WRA currently comprises about 450,000 people, or a fifth of all ESA recipients. The ESA support group, however, who account for two-thirds of ESA recipients, will continue to receive about £52 per week more than JSA recipients: comprising the support group

[20] As of May 2016, 20% of ESA claimants were claiming contributions-based ESA and not income-related ESA. Some of these would qualify for income-based ESA, and hence could have claimed ESA even if they had not met the contribution conditions. Source: DWP tabulation tool (http://tabulation-tool.dwp.gov.uk/100pc/esa/tabtool_esa.html).

element itself, at £37 per week, and an enhanced disability premium of £16 that the group are automatically entitled to.[21]

Given that we have separate disability benefits that recipients of ESA can claim, the fact that a substantial portion of ESA claimants face direct costs of disability not faced by JSA recipients is not in itself a coherent argument for having ESA rates higher than JSA rates. If one believed that DLA/PIP do not adequately cover the costs of disability, the appropriate response could be to increase the level of those benefits. The think tank *Reform* has advocated a package whereby ESA rates are reduced to be in line with JSA rates, and the proceeds used to increase PIP and to increase efforts to move JSA claimants into paid work.[22]

If the government decided to abolish the support group element of ESA, this would take £37 per week away from 1.5 million recipients, reducing annual spending by £2.9 billion in 2017–18. In addition, if the support group were no longer automatically passported to the enhanced disability premium, some portion of them (i.e. those who could not qualify for the premium via other means – primarily DLA/PIP receipt) would lose a further £16 per week.[23] That would be enough to pay for a significant increase in disability benefit rates for the 2.1 million working-age recipients of disability benefits. Of course, a substantial fraction of those who lost from the first reform would be at least partly compensated by the second. There would also be lots of net winners on disability benefits but not in the support group of ESA (which would include pensioners if their rates of disability benefits were also increased). But the group of individuals in the ESA support group who did not receive disability benefits would lose a substantial proportion of their income. Under universal credit, the equivalent of the support group element is substantially larger (see below), so in the long run the gross takeaways and gross giveaways possible from this kind of reform package would be larger too.

There are arguments one could make, however, in support of a differential between JSA and ESA rates, and therefore against a reform in the direction set out above. One potential economic argument relates to efficiency and incentives. People in ill health may be less likely to work regardless of the financial incentives they face. If that is the case, higher out-of-work benefits for this group incur less of a cost on the economy, in terms of reduced labour supply, than higher JSA. This argument may be especially true of the ESA support group. But serious analysis of the incentive costs would be needed before any of this could be confidently asserted.[24] Another argument could be that we want to target

[21] The amounts in pounds per week here are under the April 2017 system. Those in the ESA WRA group can be entitled to the enhanced disability premium too, but only if they receive the highest rate of either the care component of DLA or the daily living component of PIP (discussed below) or the armed forces independence payment. Claimant numbers are for May 2016 and are from the DWP's tabulation tool (http://tabulation-tool.dwp.gov.uk/100pc/esa/tabtool_esa.html). About 13% of ESA recipients are in neither the ESA WRA group nor the ESA support group, because they are still in the 'assessment phase' waiting for the extent of their incapacity to be assessed. The rate for those in the assessment phase is the same as the JSA rate.

[22] C. Pickles, E. Holmes, H. Titley and B. Dobson, *Working Welfare: A Radically New Approach to Sickness and Disability Benefits*, Reform, February 2016, http://www.reform.uk/publication/working-welfare-a-radically-new-approach-to-sickness-and-disability-benefits/.

[23] Of course, one could also simply get rid of all the disability premiums in out-of-work benefits. As discussed above though, this raises a slightly different set of issues. It is in large part a decision about whether or not to effectively means-test disability benefits, rather than a decision about whether incapacity benefits should be more generous than other out-of-work benefits.

[24] There is empirical research on some of these kinds of incentive effects in other countries. One recent paper looked at the impacts of the Disability Insurance (DI) scheme in the US, weighing up the incentive costs of DI

resources at people who have a low income for a prolonged period and/or low lifetime incomes, and being in ill health could be a proxy for this. Finally, one could imagine philosophical (rather than economic) arguments, such as the idea that people prevented from working due to ill health tend to be more 'deserving' than people who are not employed for other reasons.

The government is implicitly making judgements about the merits of these kinds of arguments in setting and changing JSA and ESA rates. It would therefore be helpful for the government to set out its thinking and rationales more explicitly – not least because this would help to highlight what more evidence is needed to make better decisions (e.g. evidence on responsiveness to financial incentives or the persistence of low-income spells for those in ill health).

Universal credit

Income-related ESA is one of six means-tested benefits for working-age families that will be integrated into one under universal credit (alongside income-based JSA, income support, housing benefit, child tax credit and working tax credit). The introduction of UC will have two particular implications for the way that financial support for incapacity is structured, which we briefly discuss below.

First, a notable feature of the current system is that, although we have distinct incapacity and disability benefits, there are actually interactions between them. In particular, ESA claimants can qualify for 'premiums' (extra ESA) that are dependent on claiming the standard or enhanced rates of the daily living component of PIP (or the middle or higher rates of the care component of DLA). But when income-related ESA is rolled into UC, those premiums will be abolished, while the equivalent of the support group component of ESA will be increased.[25] As a result, support group ESA claimants who are on the relevant rates of DLA or PIP will lose £42 per week, while those in the support group who are not in receipt of DLA or PIP will gain £21 per week.[26]

As discussed earlier, these premiums are effectively an element of means-testing in our disability benefits system: if one is deemed to have ill health that leads to additional costs, the disability benefits system will provide extra support regardless of income level; but there is effectively an additional top-up of disability benefits, via the premiums, for those on ESA. Under UC, the government is therefore effectively moving to a purely non-means-tested disability benefits system (by abolishing the disability premiums), whilst increasing the generosity of incapacity benefits for those whose potential to work is deemed most limited by their health (by increasing the equivalent of the support group component of ESA). As discussed above, there are potential pros and cons of both of these decisions, so the government's approach is not obviously unreasonable – though again it would be

against the value of the insurance against ill health that it provides. The research concluded that reductions in DI from its current level would reduce social welfare overall because the reduced value of the insurance would outweigh the improvement in efficiency (i.e. the lowering of the incentive to claim DI rather than work). See H. Low and L. Pistaferri, 'Disability Insurance and the dynamics of the incentive insurance trade-off', *American Economic Review*, 2015, 105, 2986–3029. But all this is far removed from the policy context in the UK.

[25] Under UC, this will be called the 'limited capability for work-related activity' component.

[26] Those in the WRA group will lose £62 per week if they are on the middle rate of the care component of DLA or the standard daily living component of PIP, or £78 per week if they are on the enhanced care component of DLA or daily living component of PIP.

helpful for it to set out its arguments systematically with reference to the kinds of principles discussed above. Note that the overall shift that this effectively entails, away from disability benefits and towards incapacity benefits, is the opposite of the general trend over the past 25 years (see Section 6.2).

Second, the other change that UC will bring about concerns the relationship between benefit entitlement and paid work for those receiving incapacity benefits. On the one hand, this may not seem like the biggest issue relating to the structure of the benefits system. A DWP response to a Freedom of Information (FOI) request suggests that no more than around 2% of ESA claimants take up the option to do the very small amounts of paid work that are currently allowed under 'permitted work' rules (see below).[27] Nevertheless, given the government's own emphasis on increasing employment among disabled people from its current level, the financial incentives for such people to do this are clearly of relevance (and perhaps increasing relevance) for policy. For those on incapacity benefits, one relevant issue here is how the system deals with people whose health and ability to work improve and who can therefore potentially move into significant paid employment.

Under the 'legacy' system that UC will replace, the financial incentives of ESA claimants to do small amounts of paid work are strong, but their financial incentives to go beyond that can be very weak. This is because, under 'permitted work' rules, small amounts of earnings have no impact on benefit entitlement for these claimants;[28] but going beyond a certain limit has a mechanical 'cliff-edge' impact whereby all ESA is removed, and some housing benefit (HB) will often be lost in the process (since ESA acts as a passport to maximum HB).[29] The details differ according to circumstances but, taking someone earning the national living wage, the general pattern is that if they are either in the support group (the majority of ESA claimants) or on HB, then they will have less money if they do 16 hours of work per week than if they worked slightly less. For example for a single person with no children who was in the WRA group and on housing benefit, the loss from moving from just below to just above 16 hours of work per week would be £67 per week.[30]

Under UC, the equivalent to being placed in the WRA group is to be assessed as having 'limited capability for work' (LCW) and the equivalent to being placed in the support group is to be assessed as having 'limited capability for work-related activity' (LCWRA). For someone already assessed as LCW/LCWRA, unlike the legacy system there is no mechanical cliff-edge in support when earnings increase beyond a certain level.[31] This is potentially an important difference. However, it is plausible that a claimant's observed working behaviour would be one of the influences behind a decision over whether

[27] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/553580/foi-48-2011-permitted-work.pdf.

[28] Specifically, they can earn up to the equivalent of 16 hours per week at the national living wage under these rules (£120 per week in 2017–18). For the WRA group, this limit currently only applies for one year, after which a much lower earnings limit would apply. But from April 2017, the one-year restriction will be removed.

[29] The same will often be true of council tax support, though these schemes are now designed by local authorities, who have made varying choices. As a result, we ignore council tax support in what follows.

[30] This accounts for the fact that working tax credit entitlement (including disabled worker's element) would kick in at the same 16-hours point for a disabled worker.

[31] For people making a new UC claim, the 'permitted work' earnings limits inherited from the ESA system do still apply: you cannot be newly granted LCW or LCWRA status if earning more than that limit.

someone with LCW or LCWRA status should have their health reassessed (for the approximately half of these claimants not on DLA/PIP, which will act to protect LCW/LCWRA status under UC[32]). If claimants perceive this possibility, there may still be a significant incentive issue for those not on DLA/PIP and deciding how much paid work to undertake. Like under the legacy system, having LCW/LCWRA status can make a substantial difference to the amount of support you are entitled to. For someone doing paid work, a higher work allowance means that having LCW status can be worth up to £28 per week (or £58 per week if not claiming support for housing costs); and having LCWRA status confers an additional £73, via the equivalent of the support group premium under UC.[33]

Hence, UC will effectively give DWP decision-makers responsibility for managing delicate trade-offs between giving claimants the right financial incentives and fairly assessing health status as it evolves. This is potentially a better approach than the legacy system, which simply has *mechanical* cliff-edges in support: trade-offs can be managed in a way that is tailored to the circumstances of each claimant, including their evolving health. But it is also a complicated task to get right, and the outcomes of this process should be closely monitored. There may be a case for considering 'intermediate' rates of support that could be given to claimants in paid work who have recently lost LCW/LCWRA status, or guaranteeing the additional LCW/LCWRA-based entitlement for some limited period after being passed fit for work, to make the transition somewhat less severe.

6.4 Incapacity benefit reform and the disability employment gap

The government has stated that it is committed to halving the employment gap between the disabled and the non-disabled. This is a significant challenge. The Green Paper consults on a wide range of issues around disability and employment, such as the role of employers, wider societal and attitudinal changes, cooperation between different relevant parts of the public sector, including the NHS, and the design of ESA. This section focuses on the group in receipt of incapacity benefits – and therefore predominantly not in paid work – and presents some new evidence on their characteristics in order to shed light on the potential challenges involved in getting these individuals into employment.

With regards to the design of ESA, the Green Paper proposes breaking the link that exists under the current system between the level of financial support and the kind of interaction that claimants have with their Jobcentre (and specifically their 'work coaches'). Currently, while those placed in the ESA support group can choose to engage in work-related activities with a work coach at Jobcentre Plus, the level of financial support they get is not dependent on them doing so (whereas those in the ESA WRA group can be sanctioned for not doing so). To date, very few in the support group have volunteered for these activities. The Green Paper proposes that the decision on the level of financial

[32] Note that this passporting of LCW/LCWRA status from DLA/PIP receipt means that there is effectively still an element of means-testing of disability benefits under UC, in the sense that those on disability benefits can get additional UC (which is means-tested). The government might argue that this is more an administratively convenient way of passporting some ill people to LCW/LCWRA status without subjecting them to another health test, rather than a principled decision to effectively means-test disability benefits.

[33] There is an LCWRA element within UC of £73 per week, and both LCW and LCWRA status result in an enhanced work allowance (to an extent that depends on whether or not support for housing costs is also being claimed).

support given to an ESA claimant be made separately from decisions about the nature of the work-related activity the claimant would be expected to do.

This would mean that work coaches have discretion over the extent and manner of a claimant's engagement with the support group, allowing them to tailor it to the (potentially evolving) health conditions and disabilities of each individual. The success of such a change would depend in large part upon the abilities of work coaches to understand and engage successfully with the challenges faced by incapacity benefits claimants due to their health conditions and to use any greater discretion effectively.

This would also raise the possibility of those in the support group facing the risk of – and in some cases receiving – sanctions for not sufficiently engaging. Presently among ESA recipients, only those in the WRA group can be sanctioned (with 13,026 recipients sanctioned over the 12 months to June 2016).[34] The Green Paper suggests the possibility of keep-in-touch discussions between those in the support group and work coaches, which would presumably occur on a regular basis, that could be 'a voluntary or mandatory requirement'. If the greater engagement that the government wishes to see is to be achieved, then it will need to consider whether a compulsory approach would work best or whether there might be other ways of boosting engagement without the threat of a benefit sanction. For example, the government could trial a move to presuming that those in the ESA support group should participate in such activities – but allow them to opt out if they wish. This would be analogous to private pensions policy where, rather than compelling employees to save in a private pension – or leaving it up to them to choose to do so – the government is insisting that they are enrolled into a plan automatically but then allows them to leave the plan if they wish.

It is important to remember that, contrary to the original intention, the support group comprises the majority of ESA recipients (1.5 million of the 2.4 million recipients, as of May 2016). This matters first because it means that changes to the requirements placed on these claimants, and/or the interaction they have with Jobcentres, clearly have the potential to have significant impacts – for better or for worse – on a lot of people. It also means that the additional demands on time and resources within Jobcentres are also likely to be significant and they will need to be if any useful change is to be brought about. The support group is 50% larger than the group of ESA-WRA claimants and JSA claimants who are already engaged in work-related activity.

That said, there is also a significant regional dimension to this story, as was highlighted by Figure 6.7 in Section 6.2. The proportion of the working-age population in the ESA support group varies from under 3% in some parts of the South West of England, to over 5% in some parts of the North West of England, the South of Wales, and Clydeside in Scotland. This means first that there will be very differential impacts in terms of the number of people affected across the country by any policy change of this kind; and second that there are likely to be particularly significant extra resources required in Jobcentres concentrated in certain parts of the country. Any policy change should be made bearing in mind the resources required to deliver it effectively, and the geographic dimension to that.

[34] Source: Department for Work and Pensions, 'Jobseeker's allowance and employment and support allowance sanctions: decisions made to June 2016', November 2016, https://www.gov.uk/government/statistics/jobseekers-allowance-and-employment-and-support-allowance-sanctions-decisions-made-to-june-2016.

We now turn attention to the characteristics of the claimants who could be affected by the Green Paper proposals, and what types of challenges these suggest work coaches may face were they afforded more discretion. We look first at survey data on incapacity benefits claimants from the English Longitudinal Study of Ageing (ELSA). ELSA is a large-scale survey of individuals in England aged 50 and over, which has interviewed respondents biennially from 2002–03 onwards and is intended to be representative of English households. ELSA includes information about survey respondents' health conditions, any mobility or capability issues, a range of self-reported health measures, and measures related to depression, as well as a wide range of information on other characteristics. These data only allow us to look at the subset of claimants aged 50 years and over in England and, due to sample size, we do not separately analyse individuals in the ESA support group. But this age group accounts for about half of ESA claimants, and two-thirds of ESA claimants aged 50 and over are in the support group.[35]

Table 6.1. Characteristics of people aged between 50 and the state pension age, by incapacity benefits receipt

	Receiving incapacity benefits (8%)	Not receiving incapacity benefits (92%)	All (100%)
Female	35%	43%	42%
Low educated	63%	40%	42%
Mid educated	32%	38%	37%
High educated	5%	23%	21%
Married or cohabiting	57%	81%	78%
Has working partner (of those with partner)	42%	72%	70%
Health characteristics			
0–2 health problems	29%	88%	83%
3–5 health problems	34%	10%	12%
6 or more health problems	37%	3%	6%
Hearing problems	29%	15%	16%
Eyesight problems	24%	9%	11%
Incontinence	20%	9%	10%
Depressive symptoms	40%	9%	12%
Any mobility problems	89%	37%	41%

Note: Health 'problems' are 12 binary indicators covering mobility, eyesight, hearing, incontinence, stress and depression.

Source: Authors' calculations using ELSA data, waves 1–7. Sample of 28,286 individuals.

[35] Source: figures for May 2016 from the DWP tabulation tool (http://tabulation-tool.dwp.gov.uk/100pc/esa/age/esa_phase/a_carate_r_age_c_esa_phase_may16.html).

We start by looking at differences in general (i.e. non-health) characteristics between incapacity benefits recipients and non-recipients aged 50 and over. Table 6.1 shows that, as we saw for working-age adults as a whole in Section 6.2, incapacity benefits claimants are relatively likely to be male and low educated. This is important: those with low levels of formal education are likely to have lower levels of skills more generally, and this will form another potential barrier to work faced by this group. We also see that claimants are less likely to be married than non-claimants and, of those with a partner, their partner is much more likely to be out of work.

To examine the health status of incapacity benefits claimants in ELSA, we use data on 12 self-reported health conditions relevant to incapacity benefits claimant status, covering mobility, eyesight and hearing problems, incontinence and depressive symptoms.[36] The health panel of Table 6.1 shows that over 70% of incapacity benefits claimants have three or more health conditions on this measure, compared with just 12% of non-claimants. Over one-third of claimants have six or more health conditions. At the other end of the scale, among those not receiving incapacity benefits, 88% report between zero and two health problems, while this is true of 29% of those receiving incapacity benefits.

The prevalence of incapacity benefits claimants with multiple health conditions could strengthen the case for providing work coaches with more discretion as they may be able to take into account the barriers to work that could be caused by the plethora of different combinations of problems. But it might also suggest that significantly reducing the disability employment gap by getting many more of these individuals into paid work will not be a straightforward task.

Unsurprisingly, a higher proportion of claimants of incapacity benefits have health conditions that could inhibit their ability to work than do non-claimants. However, the extent to which health conditions are concentrated among incapacity benefits claimants differs by condition. The concentration is particularly marked for those with depressive symptoms: these conditions are four times more prevalent among incapacity benefits claimants than among non-claimants. The prevalence of mental and behavioural issues more generally is an important issue here, to which we return below.

So far, we have discussed the average characteristics of those receiving incapacity benefits. What may matter more for the objective of getting more of these individuals into paid work is the characteristics of those with the least severe health problems, who we might expect work coaches to engage with more intensely if they are afforded more discretion, as the Green Paper advocates. We are limited by the available data in how we can examine this, but what we can do is to categorise claimants according to the *number* of conditions they have.

Table 6.2 splits incapacity claimants into three roughly equally sized groups, according to their number of reported health conditions. We report the average of various characteristics for each of these groups. The claimants with fewest health conditions (0–2 health conditions), and who may therefore be relatively likely candidates for greater work-coach engagement, are significantly more likely to be male and to be single than those

[36] These are the conditions used to construct the health index in J. Banks, R. Blundell and C. Emmerson, 'Disability benefit receipt and reform: reconciling trends in the United Kingdom', *Journal of Economic Perspectives*, 2015, 29(2), 173–90.

with many health conditions. They are also more highly educated than claimants with more health problems – but still considerably less educated than the population as a whole (55% were not educated beyond compulsory school-leaving age, compared with 41% among all adults between 50 and the state pension age). Hence their potential labour market opportunities, all else equal, may indeed be somewhat better than those of the claimants with more health problems – reinforcing the case for focusing more attention on this group than on other claimants as part of efforts to increase employment. But they are still a relatively low-educated group, so getting a large fraction of them into stable employment will still be difficult.

Education levels aside, the increased prevalence of mental and behavioural conditions is perhaps the most important factor for the government to respond to effectively, if efforts to move more incapacity benefits claimants into work are to be successful. We have seen for those aged 50 to the state pension age that the relative likelihood of such claimants having depressive symptoms is high. Broadening the analysis to all working-age individuals using administrative data, Figure 6.10 shows that half of incapacity benefits claimants now have a mental or behavioural disorder as their primary health condition at the point they start claiming – up from less than one-third at the turn of the century. Among these, the most common problems were depression, stress and anxiety. Previous research has shown that the proportion of claims attributed to mental and behavioural disorders has increased for all age groups and for both men and women, with growth strongest among young men.[37] A mental and behavioural disorder rate of around one-half applies in both the ESA WRA and ESA support groups.[38]

Table 6.2. Average characteristics of incapacity benefits recipients aged 50 to state pension age, by health status

	0–2 health problems	3–5 health problems	6+ health problems	All recipients
Female	28%	36%	41%	35%
Low educated	55%	65%	63%	61%
Mid educated	34%	27%	31%	31%
High educated	8%	5%	3%	5%
Married or cohabiting	52%	58%	59%	57%
Has working partner (of those with partner)	46%	47%	35%	42%

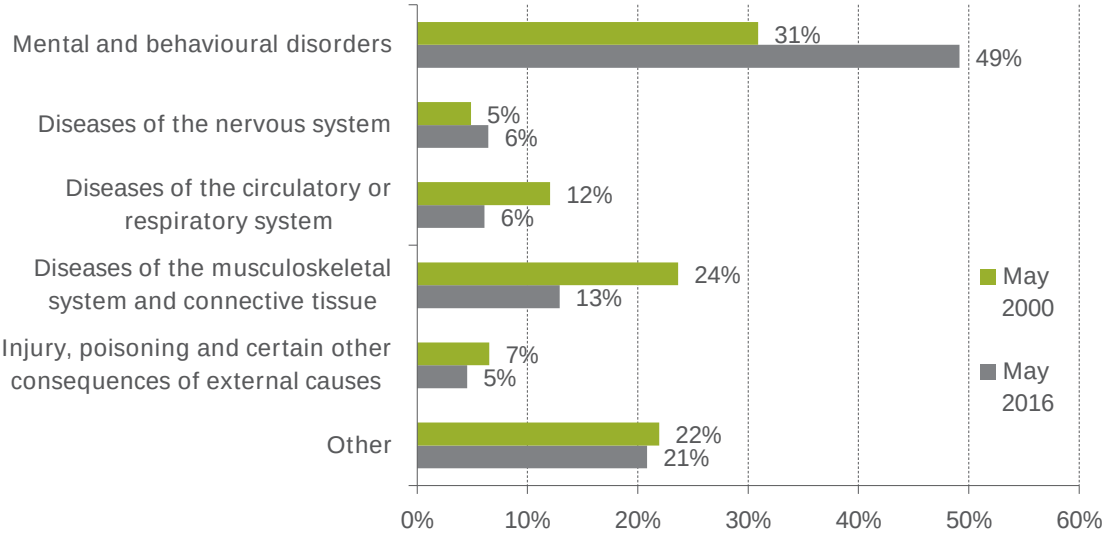
Note: Health ‘problems’ are 12 binary indicators covering mobility, eyesight, hearing, incontinence, stress and depression.

Source: Authors’ calculations using ELSA data, waves 1–7. Sample of 2,333 ESA or IB recipients.

[37] J. Banks, R. Blundell and C. Emmerson, ‘Disability benefit receipt and reform: reconciling trends in the United Kingdom’, *Journal of Economic Perspectives*, 2015, 29(2), 173–90.

[38] http://tabulation-tool.dwp.gov.uk/100pc/esa/icdgpsumm/esa_phase/a_carate_r_icdgpsumm_c_esa_phase_may16.html.

Figure 6.10. Percentage of working-age incapacity benefits claims due to different health conditions



Source: Authors' calculations using Department for Work and Pensions tabulation tool (http://tabulation-tool.dwp.gov.uk/100pc/esa/tabtool_esa.html). Conditions are classified according to the International Classification of Diseases.

The 2014 Adult Psychiatric Morbidity Survey (APMS) found an even higher rate (64%) of mental health conditions among those on ESA.[39] This is compatible with the DWP data in Figure 6.10, as recipients often have multiple health conditions (as shown in Table 6.1) and may develop mental health conditions after they move onto benefits, which could be picked up in the APMS but would not be recorded in the administrative data. In contrast, the APMS found that the rate of mental health conditions was much lower among those in paid work (14.4% among those in full-time employment and 16.5% among those in part-time employment).[40]

The high, and increasing, prevalence of mental and behavioural disorders among those receiving incapacity benefits is not unique to the UK. An OECD report from 2009[41] found that 'Mental and psychological problems represent around one-third of disability benefit inflows on average in OECD countries. This share has shown a massive increase in many countries for which data are available over the past decade. For instance, in Switzerland and Denmark the share of mental problems in disability inflows has grown from 25% to over 40%, and from 15% to 40% in Sweden'.

All this suggests that it is likely to be very important how well equipped work coaches are to deal with the nature of mental and behavioural disorders – including, for example, their tendency to fluctuate and the possibility that, in some cases, an imposition of potentially unwanted regular interactions with the threat of sanctions (perceived or real) could have adverse effects for the claimant's health.

[39] Mental health conditions include depression, postnatal depression, obsessive compulsive disorder, panic attacks, other anxiety conditions and other conditions.

[40] See tables 2.9 and 2.10 in http://content.digital.nhs.uk/catalogue/PUB21748/apms-2014-full-rpt.pdf.

[41] See page 214 – and figure 4.3 on page 217 – in chapter 4 of OECD, *Economic Outlook 2009*, https://www.oecd.org/els/emp/45219540.pdf.

6.5 Conclusion

In 2016–17, the government is forecast to spend £24.4 billion on disability and incapacity benefits that are received by 3.5 million working-age people. In terms of incapacity benefits, some key trends are that:

- spending on working-age incapacity benefits as a percentage of national income is currently at its lowest level since 1989–90 and is forecast to reach its lowest level for over 40 years by the end of this parliament;
- over the last three decades, the generosity of incapacity benefits payments has fallen as a share of average earnings: in 1986–87 the average award was 24% of male full-time average earnings, whereas by 2016–17 this had reached 19%;
- incapacity benefits have increasingly gone to those with low levels of education, and less to older men, and it is now the case that mental and behavioural disorders are the principal cause of half of ESA claims.

This is a difficult area of policy. The government is trying to provide financial support to some of the most vulnerable people in society, whilst ensuring that those who are able to do paid work have sufficient incentives to do so, and that the benefits system sets reasonable expectations (in terms of work-related activity) for those whose health is – or has some prospect of – improving. It is an important area to get right, for the country as a whole as well as for those unfortunate enough to be in ill health: we are spending more than 1% of our national income on incapacity and disability benefits for individuals of working age. It clearly matters whether this money is providing the right financial support to the right set of people, and whether the support is conditional on the right kinds of requirements.

Recent reforms to these benefits have encountered significant difficulties, not least in terms of predicting their effects. Governments have been guilty of repeated over-optimism when predicting how many people will be assessed by new tests as not needing assistance with daily activities or mobility, or as being fit to work, or as being fit to undertake work-related activity. Hence there has been consistent over-optimism about the impacts of reforms on the public finances.

The one confirmed change in the pipeline is a cut to the rate of support for the ESA WRA group, which will be phased in gradually through its application to new claimants from April 2017. As a cut to the rate of support, rather than a change to health assessments, its primary impacts are easier to anticipate. Ultimately, it will mean that about 450,000 people will receive about £30 per week less than they would have done (and will receive the same as JSA claimants).

But in terms of potential further policy measures, the government's focus is now somewhat different from what we have seen in the recent past. It is not directly looking at reducing spending on these benefits, but it wants to reform incapacity benefits in a way that helps to meet its commitment to halve the disability employment gap (though, of course, successful pursuit of this objective would be likely to reduce benefit spending and to boost tax revenues). As part of this approach, the government suggests a renewed focus on the ESA support group, most of whom are not currently doing any work-related

activity and who have (in sharp contrast to the original expectation) ended up as the majority group of ESA claimants.

Providing greater discretion to Jobcentre work coaches to tailor the level and type of engagement with support group claimants to individual circumstances (as the Green Paper proposes) may well be a sensible direction for reform. As ever though, discretion brings with it risks as well as potential upsides.

In the face of diverse and complex health conditions, will work coaches be sufficiently equipped to take on greater flexibility while ensuring consistency and fairness of assessments across claimants, not least across those in different parts of the country? The rapid rise in the prevalence of mental and behavioural health conditions among ESA claimants, and the ability of work coaches to handle people with those potentially fluctuating conditions appropriately, will present a particular challenge.

We have also shown that those receiving incapacity benefits are a relatively low-educated group of people – and that this is true to a much greater extent than in the past. The disability employment gap is largest amongst the low-educated. So making large inroads into that gap will require a substantial increase in the labour market attachment of a low-skilled group.

One thing that seems certain is that, if any substantial change is to be brought about, the sizeable increase in engagement with the 1.5 million individuals in the ESA support group is going to require a significant amount of additional resource. This group is 50% larger than the group of ESA WRA group claimants and JSA claimants who are already engaged in work-related activity.

Given the obvious gaps in our knowledge about how best to engage these kinds of people in work-related activity, and the significant amount of public money that would be needed to increase engagement with them on the scale being considered, this area looks like a strong candidate for the use of some trials to learn more about what works best (both in terms of employment, incomes and public spending and in terms of the claimants' health and general experience). In addition, careful consideration will need to be given to whether greater engagement with work coaches – and, if so, how much engagement – should be made compulsory, with possible sanctions for those who do not comply, or whether there are better ways to bring about the outcomes that the government is seeking. For example, a 'middle way' could involve a presumption that the support group (excluding those with particularly severe or terminal conditions) will partake in some work-related activity, but with a clear opportunity for them to opt out.

7. Tax, legal form and the gig economy

Stuart Adam, Helen Miller and Thomas Pope[1]

Key findings

The labour market is changing in interesting ways, but not fundamentally (yet).	Employees make up the majority (85%) of the workforce. But there has been growth in individuals working for themselves (either through self-employment or as a company owner-manager). Over a quarter (27%) of the workforce are part-time, higher than a decade ago. Roughly the same proportion (3.7%) as 10 years ago have a second job, which is now slightly more likely to be working for themselves.
The 'gig economy' is somewhat new but hard to spot in the data.	Workers in the 'gig economy' are distinct from previous generations of individuals who worked for themselves and 'gigged', largely due to the use of digital platforms. Current data are not designed to capture many features associated with the gig economy.
The self-employed should be distinguished from owner-managers of companies.	The self-employed and company owner-managers, while often considered as one group, differ in interesting and systematic ways. For example, company owner-managers are, on average, better educated, more likely to work full-time and tend to work in different industries. They are also treated very differently by the tax and legal systems.
The tax advantage that comes with self-employment equates to a subsidy of £1,240 per person per year.	The self-employed pay lower National Insurance contributions than employees. This amounts to £1,240 per self-employed person per year. In principle, lower access to social security benefits may justify some tax reduction, but in practice, the differences in benefit entitlements are small.

[1] Thanks to Agnes Norris Keiller for excellent assistance with LFS analysis.

Company owner-managers get the most generous tax deal.	Company owner-managers can pay themselves in (more lightly taxed) dividends, and possibly capital gains, rather than just wages. Along with the self-employed, they also have more opportunities to avoid or evade taxes.
The massive tax advantages that come with working for your own business are not new and not justified.	The tax system has long encouraged people to work for their own business rather than be an employee. Lower tax rates are not justified by differences in employment rights or compliance burdens and are not well targeted at encouraging entrepreneurship.
Differing taxes based on how people work (their legal form) are unfair and inefficient.	Similar individuals can face very different tax burdens. This is unfair and creates economic inefficiency. Some people set up a business when, absent tax, they would be an employee. Much time and effort goes into policing the boundaries between legal forms.
The tax system should be reformed to align taxation of income across legal forms while not discouraging capital investment.	Saving and investment should be deductible from the tax base. Each extra pound of income earned should then be taxed at the same overall rates for employees, the self-employed and company owner-managers. This would simultaneously deal with many problems that plague the tax system.

7.1 Introduction

It has become commonplace to state that the labour market is fundamentally changing and that secure employment positions are being replaced with independent contract relationships that are more flexible but that also come with intermittent and less secure income streams and fewer rights. But to what extent is this true? This chapter sets out how the labour market is changing, discusses why the differential tax treatment of employees, the self-employed and company owner-managers is a growing problem and maps out how the treatment could be made more sensible.

The majority (84.7%) of the UK's workforce is still made up of employees, 93.6% of whom are in permanent positions. But, since 2008, there has been a substantial growth in the number of individuals who are self-employed. There has been even faster growth in the number of individuals owning and managing incorporated businesses. The proportion of the workforce taking on second jobs alongside their employment has changed very little in recent years, although second jobs are now slightly more likely to take the form of individuals working for themselves.

The most visible part of recent changes has come from the 'gig economy'. This is not a well-defined concept. The term, coined in reference to the way that musicians traditionally operate, is used to capture a new type of work. In general, it tends to be used to refer to individuals who are operating as an independent small business (usually through self-employment) rather than through an employment contract, performing work that can be broken down into separate tasks ('gigs') and using a digital platform operated by a large company to match them to customers. The best-known example of this is, perhaps, Uber, a company that provides a platform (an app) that matches taxi drivers to passengers. In Section 7.2, we discuss the extent to which these types of workers are genuinely distinct in any important sense from previous generations of the self-employed – many of whom also undertook comparable 'gigs' and used platforms run by third parties – and set out what can (and cannot) be said about this group using currently available data.

Much of the attention on the gig economy has, understandably, been on two (related) issues regarding individuals' welfare. The first is whether some individuals are actually operating like employees, but have been pushed into self-employment (or company ownership) by large companies that are looking to avoid the legal obligations that come with an employment contract, such as the national minimum wage, statutory sick and holiday pay, fair dismissal and immigration checks. The determination of when an employment status exists is a matter of employment law, and has been at the heart of some recent court cases. The second issue is whether some individuals are choosing self–employment because they lack employment opportunities and that, rather than reflecting the road to freedom and creativity, the growth in self-employment more likely marks the start of a more precarious and stressful way of working. In this case, an important question is why the market favours individuals working for their own business rather than as employees of large companies; large companies exist precisely because it is usually more efficient for individuals to come together as part of a large company than to operate many small businesses with contractual relationships between them (there are economies of scale and scope). Part of the answer may lie in employment laws that effectively make employees more expensive for employers. There is also almost certainly a role for new technologies that make operating an independent business more viable. These issues are being explored by the Matthew Taylor Review into Employment Practices in the Modern Economy.[2]

The rise of individuals working for their own business and the consequences of new forms of working are also intimately linked to the tax system. Employees' income is taxed at a higher rate than the incomes of the self-employed because the former are subject to National Insurance contributions (NICs) at a higher rate and are additionally subject to employer NICs. One argument in favour of preferential treatment is that the self-employed have reduced entitlement to some social security benefits. But the difference in access to benefits is nowhere near enough to account for the NICs difference: HM Revenue and Customs (HMRC) estimates that the effective NICs subsidy to the self-employed relative to the employed exceeds the value of their reduced benefit entitlement by £5.1 billion, or £1,240 per self-employed person, in 2016–17 – particularly striking since the total NICs they do pay is only £3.0 billion. Furthermore, HMRC estimates that the self-employed account for £5 billion of the £7 billion uncollected 'tax gap' for self-assessment income tax, NICs and capital gains tax combined. Company owner-managers can get even lower tax rates than the self-employed because they can choose to take income out of

[2] https://www.gov.uk/government/groups/employment-practices-in-the-modern-economy.

their company in the form of (more lightly taxed) dividends rather than as wages. This means that a person generating £40,000 of income per year can receive £32,294 after tax if they are the owner-manager of a small company or £31,180 if they are self-employed; but an employee whose employer is willing to pay the equivalent £40,000 to hire them will have only £27,738 left after tax (meaning the employee faces a 31% average tax rate, compared with 22% for the self-employed person and 19% for the company owner-manager). In fact, individuals working for their own business can achieve even lower rates if they can retain income in their businesses and later realise that income in the form of capital gains when the business is sold or dissolved. Under entrepreneurs' relief, which many company owner-managers will qualify for, capital gains are taxed at just 10%. In 2014–15, the estimated cost of entrepreneurs' relief was £3.5 billion, which averaged £74,500 per claimant. On top of these tax advantages, the self-employed and company owner-managers also have greater opportunities to (legally) avoid or (illegally) evade taxes than employees. Finally, the VAT system adds one more cherry on this cake. Companies with a turnover below £83,000 are exempt from VAT. This can create a tax difference depending on whether activities are provided by a large company or many small companies (e.g. one taxi firm operating with employees is more likely to be subject to VAT than if the same number of journeys is provided by many independent taxi drivers). Section 7.3 sets out the tax differences between legal forms.

The differential tax treatment of different legal forms means that similar individuals can face very different tax burdens. This is unfair, adds complexity and creates economic inefficiency. Of course, there can also be real differences between employees and individuals working for their own business. Importantly, the income of individuals working for their own business can represent a mix of returns to labour effort and invested capital. The cost of investment should be deductible from the tax base. But, as we set out in Section 7.4, it is difficult to make a case that differential tax rates should be used to reflect other differences (such as whether individuals take risks). Given the problems created, there should be a high bar for allowing differential tax rates across legal forms.

Concerns over the appropriate tax treatment of employees, the self-employed and company owner-managers are not new. But they are now at the forefront of policy discussion. One reason for this sudden interest is that the Office for Budget Responsibility (OBR) has quantified the cost of the ongoing shift towards working through a small company. It forecasts that the rapid expected growth in owner-managed companies will lead revenues to be £3.5 billion lower in 2021–22 than if the small company population and employment grew at the same rate (assuming that the overall change in the size of the workforce remained the same). In his 2016 Autumn Statement speech, Chancellor Philip Hammond highlighted that 'the government will consider how we can ensure that the taxation of different ways of working is fair between different individuals, and sustains the tax-base as the economy undergoes rapid change'.[3]

This area is ripe for reform. What the government could most usefully do is set out a long-term vision for where the tax system is headed, that simultaneously dealt with boundaries between all legal forms and that was mindful of the fact that the taxation of the self-employed and company owner-managers sits at the apex of many parts of the tax system. Because of the latter, one cannot consider their taxation without also considering the taxation of savings and investments more generally, and the taxation of large companies.

[3] http://www.gov.uk/government/speeches/autumn-statement-2016-philip-hammonds-speech.

We make the case for aligning tax rates for employees, the self-employed and company owner-managers while giving full allowances for saving and investment. In Section 7.5, we discuss how this could be achieved. Section 7.6 concludes.

7.2 Changes in work patterns

In this chapter, we consider three legal forms: employees, the self-employed and company owner-managers. These groups each face different tax treatments and are the main ways in which an individual can sell their labour. They do, however, mask some heterogeneity. For example, employment law also defines a 'worker' category that, for the purpose of employment rights, lies between an employee and a self-employed person (see Box 7.1).

Employees are still the bulk of the workforce, but more individuals are working for their own business

Out of a workforce of 31.3 million people in the UK in 2015–16, 26.5 million (84.7%) are employees while 4.6 million (14.7%) are working for their own business.[4] We can divide individuals working for their own business between those who report being sole directors of their own limited company (576,000 or 12.5%) and others (4.0 million, or 87.5%). Broadly, this divides this group between company owner-managers and self-employed individuals (including partnerships), although the split is not perfect. In particular, the group that we will refer to as the self-employed includes a small proportion of owners of companies with multiple directors. We discuss data limitations in Box 7.2. With this caveat in mind, we refer to these groups as company owner-managers and the self-employed, and cite independent data sources to corroborate recent trends.

Changes to the overall composition of the workforce (Figure 7.1) may not seem especially stark, but recent trends have led to a marked increase in individuals working for their own business. The share of the workforce working for their own business (14.7%) is at its highest level since at least 1994 (when it was 13.7%) and has increased from a low point of 11.8% in 2000–01. This growth in the number of individuals working for their own business can be seen in Figure 7.2, which shows that since 2008, 39% of the cumulative increase in the workforce (shown in the black line) has resulted from an increase in the number of individuals working for their own business. Of this 39% cumulative increase, just over one-third (36%) is attributable to an increase in company owner-managers and just under two-thirds (64%) is an increase in self-employment. This translates into a larger proportional increase in the company owner-manager population, which has almost doubled since 2008. The growth in the number of companies, and specifically those with a single director, is corroborated with data on corporate tax records and firm accounts, as shown by the OBR.[5] While it is not the case that recent trends have dramatically altered the composition of the workforce – direct employment remains by far the most common way to work – there has nevertheless been a shift towards individuals running their own businesses over the past six years.

[4] Here we classify employees as those whose main form of work is as an employee (and business owners likewise). Employees may also be self-employed in a second job (see below). Around 199,000 people, 0.6% of the workforce, are classified as 'unpaid family workers' or 'in training'.

[5] See box 4.1 in Office for Budget Responsibility, *Economic and Fiscal Outlook: November 2016*, http://budgetresponsibility.org.uk/efo/economic-and-fiscal-outlook-november-2016/. Since 2007, one-director companies account for all of the increase in the owner-manager population.

Box 7.1. Legal forms

Tax law distinguishes between employees and individuals working for their own unincorporated business (self-employed sole trader or partnership) or incorporated business (a company). Employment law additionally distinguishes 'workers', which, for the purpose of employment rights, lie between employees and self-employed people.[a]

Employee: Employees have an employment contract with an employer that dictates their activities. They are entitled to certain legal rights (sometimes only after a minimum employment period), including the relevant minimum wage, statutory minimum holiday, sick and redundancy pay, protection against unlawful discrimination and unfair dismissal, and statutory maternity/paternity/adoption/shared parental leave and pay.

Worker: Employment law also sets out a broader 'worker' status (all employees are workers, but not vice versa). Workers have rights (including relevant minimum wage and holiday pay) but, in general, they have fewer rights than employees (including no redundancy pay or protection against unlawful dismissal). Individuals engaged in casual or irregular work (e.g. those on zero-hour contracts) are likely to be classified as workers but not employees. A recent court ruling stated that Uber drivers should be considered as workers rather than self-employed. For tax purposes, workers will often be classed as self-employed. There is debate over whether the worker status remains meaningful.[b]

Self-employment (unincorporated business): A self-employed sole trader works for themselves, running their own (unincorporated) business and bearing full personal responsibility for any debt or losses. They can hold business assets and employ others. The business has no separate legal personality. When a self-employed individual interacts with other businesses (say as a contractor performing work), they are protected by health and safety law and, in some cases, against discrimination, but are not covered by employment law. Partnerships are a form of unincorporated business (which, in the chapter, we also refer to as self-employed). General partnerships are similar to self-employed sole traders (with the partners liable to the full extent of the partners' personal assets). Limited liability partnerships (LLPs) are a hybrid form, which combine partnership (i.e. self-employed) tax treatment with a measure of limited liability like companies. They are unincorporated but registered and one partner must have unlimited liability, although that partner may be a limited liability company.

Company (incorporated business): Limited liability companies are legal entities that are capable of enjoying rights and of being subject to duties distinct from those enjoyed or borne by shareholders, even if there is only one shareholder. The shareholders are owners of the shares and not the underlying business assets. Limited liability refers to the shareholder. The company is liable to the full extent of its assets.

[a] https://www.gov.uk/employment-status/overview.

[b] See A. Adams, J. Freedman and J. Prassl, 'Different ways of working', mimeo, forthcoming.

Box 7.2. Data on the self-employed and company owner-managers

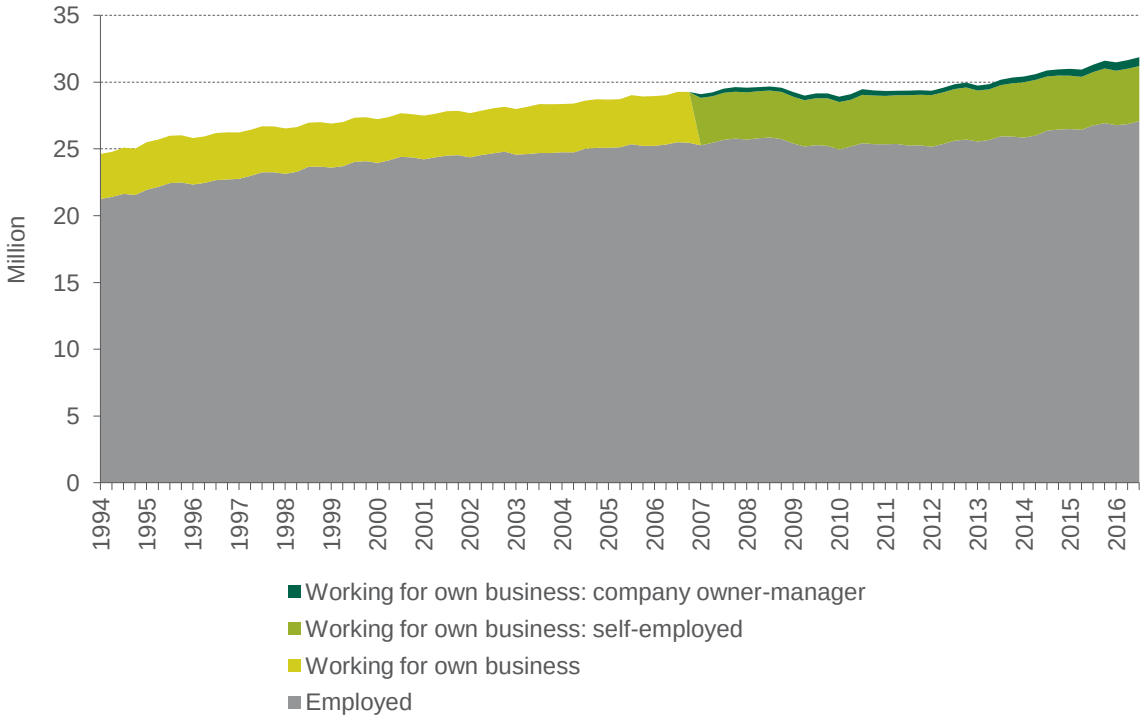
There are no data that allow us to classify individuals accurately according to their employment status and tax status. In addition, the data we do have do not reveal all of the information that may be of interest in relation to the gig economy, although we note that there are new surveys and data sources emerging on these issues.

Analysis in this section uses the Labour Force Survey (LFS), a representative survey of the UK population that asks individuals to report their employment circumstances. Those who report running their own business are additionally asked whether they are the sole director of their own limited company. Those running their own business who do not report that they are incorporated and sole directors can be (i) self-employed (operating either as sole traders or partners) or (ii) one of several directors of their company. The data do not allow the latter group to be separately identified. Commonly in analysis of the LFS, the self-employed and company owner-managers are considered together and jointly referred to as 'the self-employed'. Here, we explicitly choose not to do this because in tax parlance self-employment strictly means something quite different from company owner-management, and we think it interesting to consider trends in each separately, not least because the tax treatments are significantly different.

Four pieces of evidence give us confidence that the split between the self-employed and company owner-managers that we use, while imperfect, captures the broad size of different groups and the changes over time. First, independent data from the Business Register, while not directly comparable to those from the LFS, suggest that the numbers of owner-managed companies we observe are of broadly the correct magnitude.[a] Second, the same data show that the number of unincorporated businesses is substantially higher than the number of small companies, such that we would expect owner-managed companies with multiple directors to be a small fraction of the category that we refer to as the self-employed. Third, we expect that some individuals who are directors of companies with multiple directors actually classify themselves as sole directors (and are therefore in the category we refer to as company owner-managers). As evidence for this, there are non-trivial numbers of individuals in this group prior to 2006, at which point it was a legal requirement that all companies have more than one director. Finally, evidence from the OBR (cited in the main text) uses data from tax records to show that the growth in owner-managed companies since 2007–08 has come entirely from one-director companies (the group that we accurately identify) and not from multiple-director companies. In ongoing work, we are also using tax records to count and analyse the self-employed and company owner-managers.

[a] The LFS reports 664,000 sole directors in 2016, some of whom will employ others. The Business Register records 818,000 companies that employed one worker (assumed to be an owner and director), some of which will have multiple directors. The overlap between these two groups is likely to be large and comprises companies with one director and no other employees.

Figure 7.1. Size and composition of the workforce since 1994



Note: Not seasonally adjusted. Individuals with more than one job are classified according to their main job. The employed category includes individuals classified as 'unpaid family workers' or 'in training'.

Source: Labour Force Survey.

Figure 7.2. Cumulative change in size of workforce since 2008 Q1

Note: Not seasonally adjusted. In each quarter, the cumulative change is calculated as the difference between the number of individuals in the current quarter and the number of individuals in 2008 Q1 in each category. The employed category includes individuals classified as 'unpaid family workers' or 'in training'.

Source: Labour Force Survey.

Double jobbing

The figures mentioned in this section thus far have referred to individuals' main jobs. The vast majority of individuals (over 95% in all legal forms) have just one job. However, as Table 7.1 shows, a small proportion of those in paid work take on more than one job and we can categorise individuals according to whether their second job is as an employee or working for their own business. There are two interesting points to note:

- There have been only very small changes in the proportions of individuals taking on second jobs. For example, more or less the same proportion of employees had second jobs in 2015–16 (3.5%) as in 2007–08 (3.7%). Although note that given that the number of employees is rising overall, this still implies that there are more individuals with second jobs (just not more as a proportion of total employees).

- Across all legal forms, there has been a slight growth in the proportion of individuals who work for their own business as a second occupation. At the same time, the proportion with a second job as an employee has fallen slightly across all legal forms.

To summarise, small changes in the proportion of individuals with second jobs comprise two opposing, but still small, trends – a smaller proportion of those in paid work have second jobs in employment, but more have second jobs being self-employed or as a company owner-manager.

Table 7.1. Activity of those in paid work, 2007–08 and 2015–16

	2007–08	2015–16
Total in paid work	**29.3m**	**31.1m**
Employees	***25.4m***	***26.5m***
One job	96.3%	96.4%
Second job as employee	2.6%	2.3%
Second job working for own business	1.1%	1.2%
Self-employed	***3.5m***	***4.0m***
One job	95.2%	95.0%
Second job as employee	2.4%	2.3%
Second job working for own business	2.4%	2.6%
Company owner-managers	***324,000***	***576,000***
One job	97.0%	96.7%
Second job as employee	1.5%	1.2%
Second job working for own business	1.5%	2.0%

Note: 'Total in paid work' excludes unpaid family workers and those in training. 'Second job working for own business' could be a self-employed second job or a company owner-manager second job. These cannot be distinguished in the data. Percentages may not sum (i) because, for a small proportion of those with second jobs, we do not know what form their second job takes and (ii) because of rounding.

Source: Labour Force Survey.

Characteristics of individuals in different legal forms

There has been a rise in part-time working, which is now more prevalent than it was a decade ago.[6] Indeed, a higher proportion of those in paid work are working part-time than at any point from 1994 to 2010, although the proportion was higher between 2010 and 2014. In 2007–08, 25% of those in paid work, 7.4 million people, were working part-time (figures are shown in Table 7.2). Employees and the self-employed were equally likely to work part-time, while company owner-managers were substantially less likely (just under 12% were part-time). In 2015–16, 27% of those in paid work (8.3 million people) worked part-time. Company owner-managers remained the least likely group to work part-time, though the proportion working part-time had increased rapidly since 2007 (from 12% to 18%). And the self-employed were now more likely than employees to work part-time (31% of the self-employed compared with 26% of employees worked part-time).

These changes have been accompanied by small changes in the extent to which employees are working in permanent positions. The proportion of employees with permanent positions has fallen from 94.1% in 2007–08 (24.0 million people) to 93.6% in 2015–16 (24.8 million people). This partly reflects the fact that more employees are part-time, and part-time workers are less likely to have permanent positions, although full-time employees are also now slightly less likely to be permanent.

Table 7.2 compares some of the main characteristics of individuals according to the legal form of their main work, including how they have changed since 2007–08. Both the self-employed and company owner-managers are disproportionately male and are older on average than employees. Bank of England analysis suggests that an ageing population, combined with the fact that older people are more likely to work for their own business, can explain a substantial proportion of the increase in the number of individuals working for their own business since the recession.[7] Since 2007, the whole workforce, but especially individuals working for their own business, has become older and more likely to be female.

The proportion of individuals with a degree has risen across the board. But the gap between company owner-managers, who were already more likely to hold a degree in 2007–08, and others had widened further by 2015–16. The 2015–16 self-employed group are more educated, on average, than the self-employed have been previously, but remain less educated relative to employees and company owner-managers.

We also examine the main industries in which individuals in different legal forms work. In 2007–08, 24% of the self-employed and 23% of company owner-managers worked in construction, an industry in which being self-employed or a company owner-manager is common practice (over 40% of individuals operating in the construction industry work for their own business). Other prominent industries for the self-employed included retail trade, land transport (e.g. taxi drivers) and legal and accountancy services. Company owner-managers were most prominent in industries such as IT and head office

[6] There has been a particularly sharp rise in the number of low-wage men working part-time. See C. Belfield, R. Blundell, J. Cribb, A. Hood, R. Joyce and A. Norris Keiller, 'Two decades of income inequality in Britain: the role of wages, household earnings and redistribution', IFS report summary, 2017, https://www.ifs.org.uk/publications/8849.

[7] S. Tatomir, 'Self-employment: what can we learn from recent developments?', *Bank of England Quarterly Bulletin*, 2015 Q1, 56–66, http://www.bankofengland.co.uk/publications/Documents/quarterlybulletin/2015/q105.pdf.

Table 7.2. Characteristics of individuals in different legal forms, 2007–08 and 2015–16

	All in paid work		Employees		Self-employed		Company owner-managers	
	07–08	15–16	07–08	15–16	07–08	15–16	07–08	15–16
Part-time workers, %	25.1	26.7	25.2	26.2	25.3	31.2	11.8	17.5
Average age, years	40.3	41.3	39.5	40.3	45.7	47.0	44.8	47.1
% male	54.0	53.3	51.2	50.7	71.7	66.8	82.2	77.3
% with a degree	24.1	33.5	24.2	33.6	22.7	31.1	29.6	42.2

Note: 'All in paid work' excludes unpaid family workers and those in training. Figures refer to financial years. Part-time is defined as working less than 30 hours per week.

Source: Labour Force Survey.

management and consultancy. In 2015–16, construction remained important for both groups (20.1% of the self-employed and 16.5% of company owner-managers). Growth was fastest for the self-employed in building and landscape services, while the company owner-manager population grew most in professional scientific and technical services. Beyond construction, broadly company owner-managers are more likely to be consultants, while the self-employed are more likely to be tradesmen.

In summary, the self-employed and company owner-managers tend to operate in different industries, and company owner-managers are, on average, better educated and more likely to work full-time than the self-employed. Acknowledgement of these differences is lost when these two groups are considered as one (which is how they are presented in aggregate Office for National Statistics (ONS) statistics, for example). It is possible that the rises of these two groups are due to different forces and have different policy implications. As we will emphasise in Section 7.3, the two groups are also subject to very different tax treatments.

What is the 'gig economy', is it new and where is it in the figures?

As highlighted in the introduction, the recent rise in individuals working for their own business, and especially self-employment, is often associated with the growth of the 'gig economy'. There is no clear way to determine which jobs are part of the gig economy, but one of the characteristic features is the use of third-party digital platforms. Effectively, there are companies that provide a platform (usually a web-based tool) that allows individuals selling services to be matched with customers. Prominent examples of this include Uber, Deliveroo, Elance, Etsy and TaskRabbit, which provide platforms for, respectively, taxi drivers, fast-food deliverers, freelance writers, 'makers' and those providing handyman services. In examples such as these, the individuals providing services are not employees of the company and are often self-employed, possibly incorporated, for tax purposes. In some cases, they are deemed to be 'workers' in employment law (see Box 7.1) and there have been court cases to determine employment status. Section 7.4 discusses why the tax system should not be designed to reflect differences in rights across legal forms.

In many respects, the gig economy is not as new as some might imagine. Self-employment is clearly not a new concept. Nor is the idea of a platform that matches consumers to service providers. For example, hairdressing salons often do not employ hairdressers. Instead, in many cases, they provide the platform (the salon) in which the customer is matched to a self-employed hairdresser. But the large-scale digital matching platforms, made possible by technological advances, do reflect a difference between the gig economy and previous forms of working. The platforms increase the ease with which consumers and suppliers can be matched and, at least in principle, provide the latter a greater opportunity to work flexibly and to take on tasks as a second job.

Our traditional sources of data (most notably including the surveys collected by the ONS) are not set up to capture the gig economy or even many of the characteristics of different forms of employment.[8] This section has provided some indicative evidence of the rise of the gig economy: more individuals are moving into working for their own business, including as a second job alongside employment. However, the industries in which growth in self-employment has been most prominent are not those most associated with the gig economy, suggesting that there is a broader-based change in working patterns under way. Small-scale (relative to nationally-representative) surveys are starting to provide some more direct evidence of the gig economy. For example, a McKinsey survey found that 15% of 'independent workers' across Europe and the US have used a digital platform.[9]

7.3 How are different legal forms taxed?

The income of employees is taxed more heavily than that of the self-employed because the latter face lower National Insurance contributions. Company owner-managers can achieve a lower rate than both because they can take income out of their company in the form of dividends rather than wages (the former are taxed less heavily). This section sets out these differences, and discusses the various other ways through which individuals working for their own business can arrange their affairs to reduce tax payments.

Taxation of different income sources

Different sources of income are subject to different taxes and rates of tax (see Table 7.3). Employees' salaries are subject to income tax and (employee and employer) NICs, above certain thresholds.[10] The self-employed also pay income tax and NICs on their earnings, but self-employed NICs are lower than employee NICs and there is no equivalent of employer NICs for the self-employed. We return in Section 7.4 to show that lower NICs cannot be fully accounted for by self-employed individuals' lower benefit entitlements.

Company owner-managers face different tax rates depending on how they choose to take their income. This income can represent a mix of returns to labour effort and invested

[8] The LFS does ask individuals if they are working on 'zero-hour contracts', an issue that has gained attention in the context of changing employment relationships. However, there are a number of problems with the resulting data. For a discussion, see A. Adams, M. Freedland and J. Prassl, 'The "zero-hours contract": regulating casual work, or legitimating precarity?', European Labour Law Network (ELLN), Working Paper 5/2015.

[9] See J. Manyika, S. Lund, J. Bughin, K. Robinson, J. Mischke and D. Mahajan, *Independent Work: Choice, Necessity, and the Gig Economy*, McKinsey Global Institute report, October 2016, http://www.mckinsey.com/global-themes/employment-and-growth/independent-work-choice-necessity-and-the-gig-economy.

[10] Throughout this section, we assume that employees are paid regular wages, and not remunerated in other forms, such as stock options or non-wage benefits, which are taxed differently.

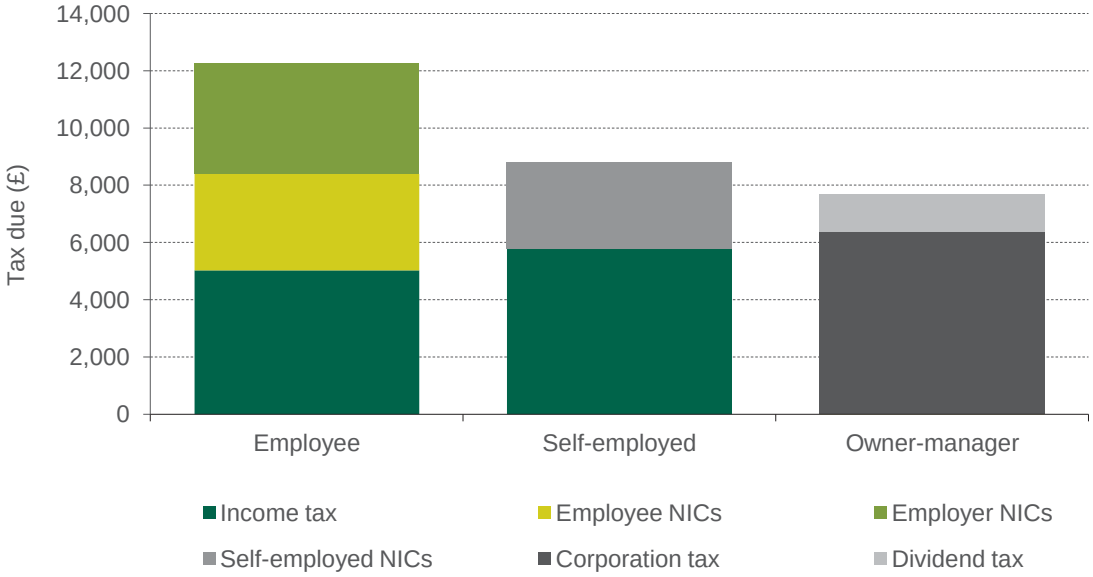
capital. Owner-managers can reduce their tax liability by recharacterising labour returns as (typically, more lightly taxed) capital returns, and pay themselves in either dividends or capital gains. Specifically, as employees of their business, they can take a salary as a normal employee would, thus taking advantage of tax-free allowances in the National Insurance and income tax systems, as well as accruing rights towards the new single-tier state pension. However, they can also pay themselves in dividends. This entails paying corporation tax on business profits (which are net of wages), and then paying income tax (but not NICs) on dividends at the personal level. The first £5,000 per year of dividends above the personal allowance is untaxed, while any remaining dividends are taxed at 7.5% in the basic-rate income tax band (treating dividends as the top slice of income), 32.5% in the higher-rate band and 38.1% in the additional-rate band. These rates, in combination with the corporation tax rate, are lower than the combined rates of income tax and NICs on salary. A company owner-manager looking to withdraw income from their company in a way that minimises their tax liability should pay themselves the NI secondary threshold in salary and take any withdrawal above that in dividends.[11] We return below to discuss how company owner-managers can retain income in the company and take income out as capital gains.

Table 7.3. Differences in tax regime across legal forms

Employee	Self-employed	Company owner-manager
Income tax charged on salary (above personal allowance). Employee NICs charged on salary (above primary threshold). Employer NICs paid by employer at a flat rate on all employees' salaries (above secondary threshold). Employment allowance reduces liability by £3,000 for each employer (assuming they have more than one employee).	Income tax charged on unincorporated business profits (above personal allowance). Self-employed NICs charged on business profits (above lower profits limit) at a rate lower than employee NICs. No equivalent to employer NICs. Capital gains tax (above annual allowance) on the disposal of business assets, at a reduced rate if qualifying for entrepreneurs' relief.	Income tax and employee and employer NICs on salary as for employees, taken out of pre-tax corporate profit. Qualify for employment allowance if more than one employee. Corporation tax on company profits (after salary deducted), including capital gains realised by the company. Income tax on dividends (distributed out of post-corporation-tax profits) above dividend allowance. Capital gains tax (above annual allowance) on sale of shares, at reduced rate if qualifying for entrepreneurs' relief.

[11] Wages up to the NI secondary threshold are within the personal allowance and therefore not taxed, unless an individual earns a high enough income that the personal allowance is withdrawn: the personal allowance is reduced by 50 pence for every pound of income above £100,000, gradually reducing it to zero for those with incomes above £122,000.

Figure 7.3. Tax due on total income of £40,000, 2016–17



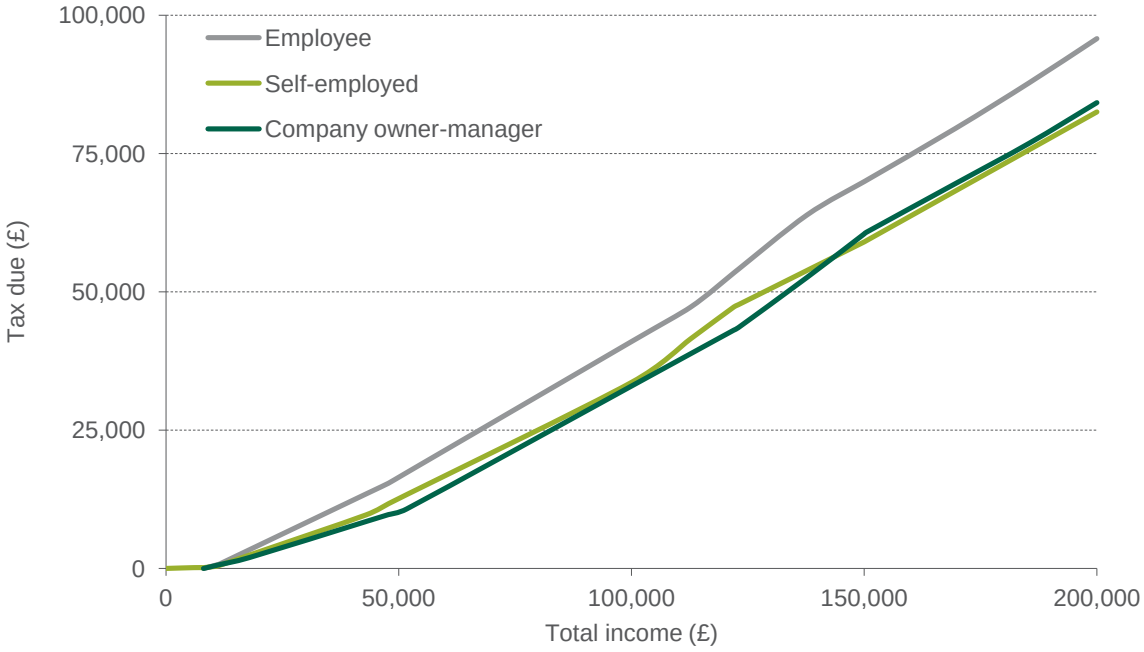
Note: The calculations assume: total income generated and paid out is equal to £40,000 for each legal form; the tax cost for employees includes employer NICs; company owner-managers take a salary equal to the NI secondary threshold and all post-tax profit as dividends. Income tax payments are lower for an employee than for a self-employed person because the employee's taxable earnings are lower as a result of employer NICs.

Figures 7.3 and 7.4 illustrate how the tax treatment of different income sources affects the total tax liability of individuals generating a certain amount of total income (set at £40,000 in Figure 7.3), and paying out that income in the year it is generated, in each of the legal forms for the tax year 2016–17. When calculating the tax payment for an employee, we include employer NICs, which, much like a wage, is a cost incurred by the employer to employ the individual. For company owner-managers, we assume that income is taken out of the company in the most tax-efficient way and (for now) that it is all taken out in the current year. Figure 7.3 shows that on a total income of £40,000, the tax liability is highest for an employee and lowest for a company owner-manager. NICs treatment explains all of the difference between employees and the self-employed and the majority of the difference between both and company owner-managers.

Employees are taxed at a higher level than individuals working for their own business at all levels of income (shown in Figure 7.4). It is this difference that means that the rise in the number of individuals choosing to work for their own business, rather than be employees of others' businesses, has a cost to the exchequer (see Box 7.3). There is some variation in the relative tax advantage of company owner-managers and the self-employed depending on income level. This is because self-employment profits are taxed less heavily than dividends (taking into account corporate and personal taxes) in the higher- and additional-rate bands.

These figures may in fact understate the tax advantages associated with self-employment or company owner-management. For example, the self-employed generally have more scope to deduct work-related expenses from their income than employees do (though

Figure 7.4. Tax due at different income levels, 2016–17



Note: See note to Figure 7.3. Here, the same assumptions hold at each stated income level.

there are exceptions to this).[12] We return below to discuss other ways in which individuals working for their own business can reduce their tax liability further.

Differences in tax regimes over time

The different tax treatment of legal forms has long been a part of the UK tax system, with the relative levels varying over time. The difference in tax burdens between the self-employed and company owner-managers is actually lower, at most income levels, in 2016–17 than it has been since at least the late 1990s, and lower than it is set to be in coming years. Figure 7.5 shows liabilities since 1999 for a particular example income level (chosen as £40,000 in 2016–17 prices and, as in Figure 7.4, assuming company owner-managers take out all income in the year it is earned). Changes over time in the liabilities and in the difference between them reflect changes in the income tax, NICs, dividend tax and corporation tax regimes.[13] The main changes that apply to the example in Figure 7.5 are as follows:

- In 2008–09, the basic rate of income tax was cut from 22% to 20%, and the 10% starting rate was abolished (except for savings income). Since 2011–12, the personal allowance has increased faster than inflation.[14] The effect of these changes varies depending on an individual's income level. For the example in Figure 7.5, they explain the majority of

[12] The core of this difference is that employees' expenses are only deductible if incurred 'wholly, exclusively and necessarily' in the performance of their duties, while self-employment expenses need only be incurred 'wholly and exclusively' for business purposes. But the difference in practical application is bigger than this difference in wording suggests.

[13] From April 2017, self-employed individuals will have an additional £1,000 annual allowance to set against their trading income, but if they choose to claim it they will no longer be able to deduct expenses for tax purposes. This allowance is not included in the figures in this chapter.

[14] Those earning above £122,000 in 2016–17 do not benefit from a higher personal allowance, and indeed have had their personal allowance removed: see footnote 11 for explanation.

the fall in tax liability for employees and the self-employed since 2008–09. They do not affect our example company owner-manager because (i) she is assumed to pay herself a salary below the personal allowance and (ii) before 2016–17, dividends were taxed at the same effective rate (i.e. with no tax at the personal level) below the personal allowance and within the basic-rate band (such that changes in the personal allowance did not lead to changes in tax on dividends).

Box 7.3. The exchequer cost of greater incorporation

The tax advantages for company owner-managers mean that if more individuals choose to work for their own companies rather than as employees of other's companies, there is a considerable cost to the exchequer. The OBR forecasts growth in the number of small companies (which is largely driven by growth in owner-managed companies) to outstrip employment growth substantially between 2015–16 and 2021–22.[a] This is based predominantly on the assumption that the trend for the small company population to grow substantially faster than employment will continue. The small company population has increased at a rate of around 7% a year since 1990. The OBR judges that the increase over the next five years will be slightly below this. But this still implies much faster growth in incorporations than the expected 0.4% growth in employees.

The OBR has quantified the cost of growth in the small company population outstripping employment growth. It forecasts that revenues will be £3.5 billion lower in 2021–22 than if the small company population and employment grew at the same rate (assuming that the overall change in the size of the workforce remained the same). The cost would have been even higher had the tax on dividends not been increased in 2016–17.

Note that this revenue cost does not reflect a judgement that the labour market is changing more quickly than it was before (for reasons related to the rise of the gig economy or otherwise). The OBR is simply quantifying the cost of a long-term trend continuing for another six years. The cost could turn out to be higher if there has been, or is in future, an increase in the underlying propensity of individuals to incorporate rather than work as employees.

There have been changes in methodology that led the OBR to revise up the forecast growth of small companies and therefore the associated revenue cost. Upward revisions in both the March 2016 and the November 2016 Economic and Fiscal Outlook reduced forecast exchequer revenues by £3.2 billion in 2020–21. This means that the majority of the costs to the exchequer from incorporation expected over the next five years have only been reflected in forecasts within the last year or so.

[a] See box 4.1 in Office for Budget Responsibility, *Economic and Fiscal Outlook: November 2016*, http://budgetresponsibility.org.uk/efo/economic-and-fiscal-outlook-november-2016/.

- A ‘starting rate’ of corporation introduced in the early 2000s meant that the first £10,000 of profit was subject to a lower tax rate, set at 10% in 2000–02 and 0% in 2002–06.[15] The liability of company owner-managers fell with the introduction of the starting rate and increased when it was effectively abolished in 2004–05.

- The tax rate paid by small companies (those with profits below £300,000) is, from 2015–16, merged with the main rate of corporation tax. This rate is set to fall – from 20% today to 17% by 2020–21 – reducing company owner-managers’ tax liability.[16]

- From 2016–17, the first £5,000 of dividends above the personal allowance is untaxed regardless of a taxpayer’s marginal rate. Above that, dividends are taxed at 7.5%, 32.5% and 38.1% in the basic-, higher- and additional-rate bands respectively. (Previously, dividends were taxed at effective rates of 0%, 25% and 30.56% in the respective bands.) This represents a tax rise for basic-rate taxpayers taking more than £5,000 of dividends, higher-rate taxpayers taking more than £21,667 in dividends and additional-rate taxpayers taking more than £25,265. This reform has reduced the tax advantage for many company owner-managers.[17] The tax liability of a company owner-manager looking to withdraw £40,000 (as shown in Figure 7.5) is £1,537 higher in 2016–17 than in 2015–16, mostly as a result of the change. For any company owner-manager earning more than £27,000 (in 2016–17 prices), their tax liability is actually higher in 2016–17 than at any time since at least 1999–2000 as a result of dividend tax reform.[18]

- An ‘employment allowance’ was introduced in April 2014 and reduced employers’ NICs liability by up to £2,000.[19] This was a bigger advantage for smaller companies, and as a result benefited mainly employees of small companies (assuming that lower employer NICs are reflected in increased wages) and company owner-managers (assuming they had no or few other employees). As of 2016–17, the allowance has been increased to £3,000, but it does not apply to companies with only one employee, which may exclude many company owner-managers from enjoying this tax break.

[15] In 2004–05 and 2005–06, profits distributed to shareholders were subject to a 19% tax rate (equivalent to the small companies’ rate), which ended this tax advantage for most owner-managers.

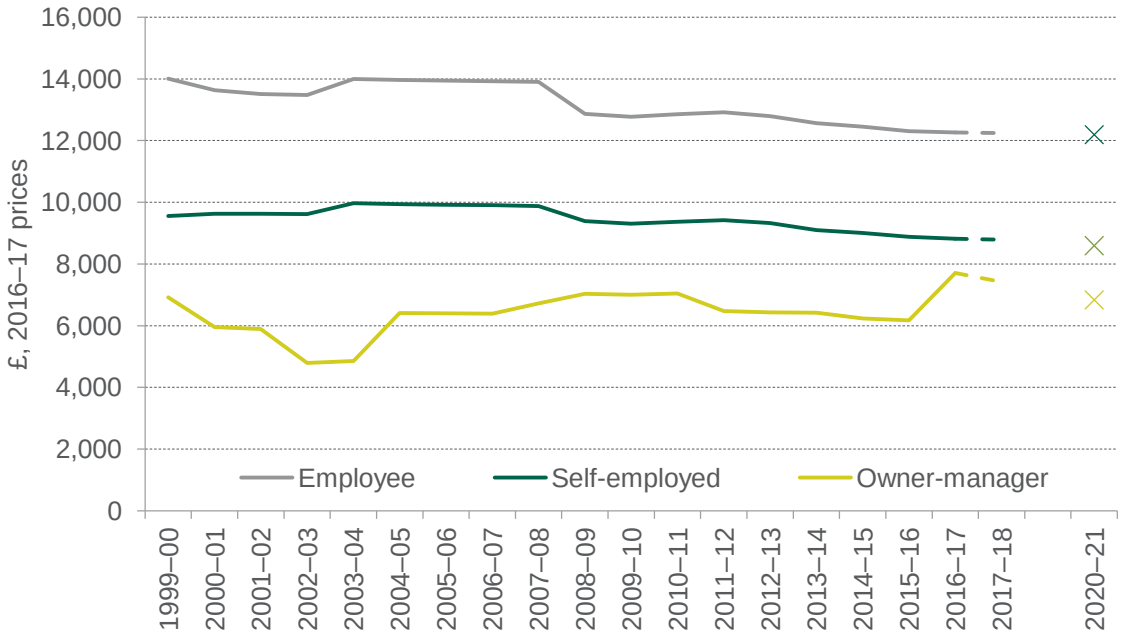
[16] While some owner-managed companies may not have been subject to the small company tax regime, in practice most will have had profits below £300,000. Since 2015–16, the corporation tax rate has been the same for all companies regardless of profit level.

[17] A further significance of the reform to dividends is that, for the first time in recent history, basic-rate tax will be charged on dividend income. Previously, the absence of basic-rate tax on dividends saved many people (generally those owning some shares but with otherwise simple tax affairs, rather than company owner-managers) from having to fill in a tax return. Changing this was seen as a large administrative barrier to the alignment of tax rates across different income sources (an option we consider in Section 7.5). However, the introduction of a 7.5% basic rate of tax on dividends, combined with a large dividend allowance to limit the increase in the number of people paying tax on dividends and therefore needing to fill in a tax return, largely removes this barrier.

[18] For further explanation of these changes, see T. Pope and T. Waters, ‘A survey of the UK tax system’, IFS Briefing Note 9, November 2016, https://www.ifs.org.uk/bns/bn09.pdf.

[19] This encourages owner-managers to take a salary equal to the income tax personal allowance rather than the National Insurance secondary threshold.

Figure 7.5. Tax due on total income of £40,000, over time (2016–17 prices)



Note: Deflated using the Consumer Prices Index (CPI). Takes into account differences in corporation tax, income tax, dividend tax and National Insurance rates and thresholds. Assumes company owner-manager takes a salary equal to the NI secondary threshold and all post-tax profit as dividends, except in 2014–15 and 2015–16 (when the employment allowance applied to company owner-managers), in which years we assume the company owner-manager takes a salary equal to the personal allowance and distributes all post-tax profits as dividends. Assumes company owner-managers are the only employee of their company and that the employee operates in a sufficiently large company that the employment allowance does not meaningfully affect their employer's NICs liability.

Additional tax advantages to incorporation and self-employment

In Figures 7.3–7.5, we assumed that an individual, having generated a certain amount of pre-tax income over a year, accessed the after-tax income in that year. But individuals working for their own business can access the proceeds in various other ways, which may allow them to reduce their tax payments. The following subsections are a (non-exhaustive) set of additional ways in which tax can be reduced.

We also note that there are two features of the system that act in the opposite direction (i.e. are more beneficial for employees). First, if they are willing to tie up the money until age 55, employees (including company owner-managers) get the most favourable tax treatment of all by getting the business to make an employer pension contribution rather than paying them income immediately. Second, the self-employed are treated less generously by the benefits system than employees. See Box 7.4.

Retaining earnings in the company

Company owner-managers can reduce their tax charge by adjusting when they take income out of a company. This is because, unlike profits from self-employment, corporate profits are subject to personal income tax only when they are distributed to shareholders.[20] Imagine an individual who earns an annual income around the higher-rate income tax threshold but in some years earns a little more and in some years a little less.

[20] Corporate profits are subject to corporation tax in the year that the profit is earned.

She can avoid paying higher-rate income tax if, when she earns more than the threshold, she retains earnings in the company and pays them out in a year when she earns less. Company owner-managers also have greater flexibility to change the timing of income withdrawal in response to policy reforms (we return below to show that this happened when the 50% marginal tax rate was introduced in 2010–11). The ability to smooth income (and therefore tax payments) over time and in response to policy change is an additional benefit of incorporation.

Box 7.4. Advantages for employees

Pension contributions: Money paid into a private pension (up to annual and lifetime limits) is not subject to income tax at that point, and crucially, if the pension contribution comes from the firm rather than the employee, there is no (employer or employee) NICs due either. Investments within the pension fund are free of personal tax on the returns; and while money taken out of the pension from age 55 is mostly subject to income tax, the first 25% is free of income tax and all of it is free of NICs. Employer pension contributions are thus a form of remuneration (indeed, the only major form of remuneration) that escapes NICs entirely, an astonishingly generous treatment.

This is not an option available to the self-employed, who must make any pension contributions themselves (there is no employer) out of income that is subject to self-employed NICs. Thus to the extent that people can use pensions in this way, employees are treated as favourably as company owner-managers, and it is self-employment that is relatively penalised – though for higher earners the penalty is only small since the self-employed NICs rate on earnings above the upper profits limit is only 2%.

Employer pension contributions can be thought of as just the most important example of a wider issue where some tax-privileged remuneration may be only (or more readily) available to employees: other examples include provision of certain sports facilities, medical check-ups, childcare vouchers and redundancy payments. To the extent that these are used, they can again favour employment relative to self-employment.

'Contributory' social security benefits: Unlike employees, the self-employed are not entitled to contribution-based jobseeker's allowance or statutory maternity/paternity/adoption/shared parental pay. We discuss this in Section 7.4.

Universal credit: For the purposes of the means test in universal credit – a major new benefit gradually being rolled out to replace six existing means-tested benefits and tax credits for working-age claimants – the self-employed are (after the first 12 months in business) assumed to be earning at least a certain amount in each month, equivalent to the applicable minimum wage times the minimum number of hours the government thinks it reasonable for them to work – even if they are in fact earning less than that amount. In other words, a self-employed individual cannot receive more universal credit in a month than an (otherwise similar) employee earning the minimum wage. This is a disincentive to choose self-employment for people who think that their earnings might be low, either in general or in some months as their income fluctuates.

Tax rates can be reduced further if income is retained within a company and taken as capital gains. Retained earnings effectively boost the value of a company. When a company owner-manager sells or liquidates their company (possibly upon retirement), the retained earnings are taxed as capital gains. That is, retained earnings are first subject to corporation tax at the company level and then capital gains tax at the personal level. If the company owner-manager meets certain conditions (and most will), the disposal of the business will be subject to entrepreneurs' relief.[21] This relief was introduced in 2008–09 (replacing the previous taper relief) and gives a reduced rate of capital gains tax of 10% on the first £10 million of otherwise taxable gains realised over an individual's lifetime (the standard rate on business assets is 10% for basic-rate taxpayers and 20% for higher- or additional-rate taxpayers). (Box 7.5 later summarises the history of capital gains tax.)

Entrepreneurs' relief can confer a large tax advantage to high-earning owner-managers. Both dividends and capital gains are withdrawn from post-corporation tax profits. For an individual in the higher-rate income tax band, dividends attract a further 32.5% tax rate within the income tax system, while capital gains qualifying for entrepreneurs' relief are taxed at just 10%. If individuals are willing to defer withdrawing income until they are able to take capital gains, they can therefore enjoy a substantially lower tax liability. The benefit is partly mitigated by the fact that any increases in the cash value of retained earnings, even those that simply compensate for inflation, will be taxed at both the corporate and personal level. Nonetheless, if high-earning owner-managers have the flexibility to take capital gains rather than withdrawing income as dividends, they can still pay substantially less tax. This is mainly an advantage for higher-income individuals, since the basic rate of tax on dividends (7.5%) is lower than the capital gains tax rate (10%).

Entrepreneurs' relief can also be used by the self-employed, although the opportunities here are more limited since it is more difficult for them to defer income for tax purposes. If the self-employed do amass such assets that are later sold, they will only be subject to capital gains tax (there will have been no corporation tax or income tax paid). Under entrepreneurs' relief, this means gains are taxed at only 10%. In this case, the tax treatment is even more generous than for company owner-managers.

In 2014–15 (the last year for which we have data on the number of claimants), the estimated cost of entrepreneurs' relief was £3.5 billion, or £74,500 per claimant.[22] Note that this tax advantage will typically relate to capital gains built up over many years (it is not the tax saving made each year by a claimant) and is the cost relative to the case in which capital gains are taxed under the main capital gains tax regime rather than entrepreneurs' relief (and not relative to a world in which they are taxed as salary or dividend income).

Even more generous treatment is available to business assets that are bequeathed. Those inheriting assets are deemed to acquire them at their market value at the date of death, so rises in the value of assets prior to death are not subject to capital gains tax. This means that substantial business income may be subject to no personal tax at all if the

[21] Eligible assets: shares owned by employees or directors with at least 5% of the shares and voting rights; unincorporated businesses; business assets sold after the closure of a business; newly issued, unlisted company shares owned for at least three years by external investors.

[22] See HMRC, 'Estimated costs of principal tax reliefs', December 2016, https://www.gov.uk/government/statistics/main-tax-expenditures-and-structural-reliefs and https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/562694/Table_14.4.pdf.

business is bequeathed. Unincorporated businesses and shares in unlisted companies are generally exempt from inheritance tax as well.

Splitting income with family members

Company owner-managers and the self-employed can split business profits among multiple individuals, reducing their overall tax liability since marginal tax rates rise with individual income. In particular, a company owner-manager could shift income to their spouse by paying them a wage and/or making them a shareholder. If the spouse has no other source of income, the amount of tax paid on the £40,000 withdrawal in Figure 7.3 can be reduced by 30% from £7,705 to £5,376.[23] Similarly, a self-employed individual could make their spouse a partner in the unincorporated business, reducing their liability by 32% from £8,820 to £6,040.[24] There are laws that look to prevent this type of behaviour in certain cases ('settlement provisions'),[25] but they do not prevent all forms of income splitting (in many cases, such behaviour is perfectly legal) and, in practice, it is difficult to identify avoidance or evasion.

Opportunities for avoidance and evasion

Relative to employees, the self-employed and company owner-managers often have additional leeway that allows them to (legally) avoid or (illegally) evade taxes. In terms of avoidance, the greater complexity of business activities offers more scope to arrange their affairs in tax-advantaged ways: sharing with spouses and shifting income across years are simple examples. In terms of evasion, the key difference is that employees are subject to third-party reporting: for the most part, the tax on their earnings is deducted by employers through the Pay As You Earn (PAYE) system and the earnings and tax are reported by the employer to the government, so it would require collusion by the employer to under-report earnings (or over-report deductions). A lack of such third-party reporting means that there are more opportunities for the self-employed and company owner-managers not to declare, and therefore not be taxed on, some income.[26] They also have greater scope to declare falsely which tax year income arises (shifting income across years can reduce tax liability) or to claim falsely that personal assets, such as a laptop or phone, are business assets and reduce tax by deducting the cost from profits.

It is not only income that is more difficult to verify for the self-employed and company owner-managers: it is also hours of work. Eligibility for working tax credit requires working a minimum number of hours per week (16, 24 or 30, depending on family circumstances); compared with someone employed by a third party, someone working for themselves could more easily pretend to work more hours than they really do.[27]

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[23] This is achieved by paying both individuals the secondary threshold and distributing the remainder in dividends (where the shareholding is split 50/50).

[24] As partners with equal shares, they would each be taxed on half of the business profits. Due to the progressivity of the tax system, this would reduce the amount of tax paid.

[25] See https://www.gov.uk/government/publications/trusts-and-settlements-income-treated-as-the-settlors-hs270-self-assessment-helpsheet/fasf.

[26] As a way of countering this in the construction industry – the most common industry in which to find people working through their own business, as we saw in Section 7.2 – the government operates the Construction Industry Scheme, whereby contractors must deduct tax on subcontractors' behalf and pass it on to HMRC, thus creating third-party involvement.

[27] This possibility will gradually end as working tax credit is replaced by universal credit, which largely avoids the use of hours-of-work rules to determine entitlement.

Of course, most self-employed individuals and company owner-managers will honestly declare their incomes and hours of work. And the government tries hard to collect the tax it thinks it is owed. Tax evasion is illegal, and there are ever more rules in place to try to prevent tax avoidance (reducing tax in ways that are legal but not within the spirit of the law). However, the risk of getting caught may be relatively small compared with the tax advantage. And even in cases where individuals are audited, it may be difficult for HMRC to prove wrongdoing. Every year HMRC produces estimates of the 'tax gap' – the difference between the amount of revenue that should have been raised and the amount that was actually raised.[28] It estimates that the tax gap for self-assessment income tax, NICs and capital gains tax combined was around £7 billion in 2014–15. Of that amount, £5 billion was judged to have arisen from 'business taxpayers' (the self-employed). Around 30% of self-employed tax returns are estimated to understate the amount of tax due, while this is only true of 12% of the remainder of self-assessment returns (which largely belong to higher- and additional-rate taxpayers).

The effect of tax on choices

The tax system clearly favours certain legal forms over others, and encourages individuals to behave in certain ways once they have chosen a legal form. These are not just theoretical incentives that could, in principle, affect decisions. There is substantial evidence that these incentives do indeed change behaviour.

The UK provides a clear illustration that incorporation responds to incentives. Figure 7.6 shows the number of incorporations over time. Spikes occurred at times when the incentives, or at least the perceived incentives, to incorporate changed.[29] The increase in response to the starting rate of corporation tax in the early 2000s (mentioned above) was predictable and, indeed, predicted.[30] The OBR reports analysis of the likely change in incorporations (based on previous trends) and suggests that the number of incorporations is responsive to changes in the tax system.[31]

There is also good evidence that the incomes of company owner-managers respond more to incentives in the tax system than employees' incomes. If people can readily adjust their incomes in response to tax incentives, we would expect to see many people locating around points such as the higher-rate income tax threshold, where the marginal tax rate increases: people who think it worth earning more when the additional income is taxed at 20% (or 0% in the case of dividends), but not when it is taxed at 40% (or 25% in the case of dividends), will choose to earn up to the higher-rate threshold but no more. Figure 7.7 shows that company owner-managers do indeed 'bunch' around the higher-rate

[28] This includes not just outright evasion but also innocent error and some forms of avoidance or debatable behaviour. See HMRC, *Measuring Tax Gaps 2016 Edition*, October 2016, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/561312/HMRC-measuring-tax-gaps-2016.pdf.

[29] For further discussion, see C. Crawford and J. Freedman, 'Small business taxation', in S. Adam, T. Besley, R. Blundell, S. Bond, R. Chote, M. Gammie, P. Johnson, G. Myles and J. Poterba (eds), *Dimensions of Tax Design: The Mirrlees Review*, Oxford University Press for IFS, Oxford, 2010, https://www.ifs.org.uk/publications/7184.

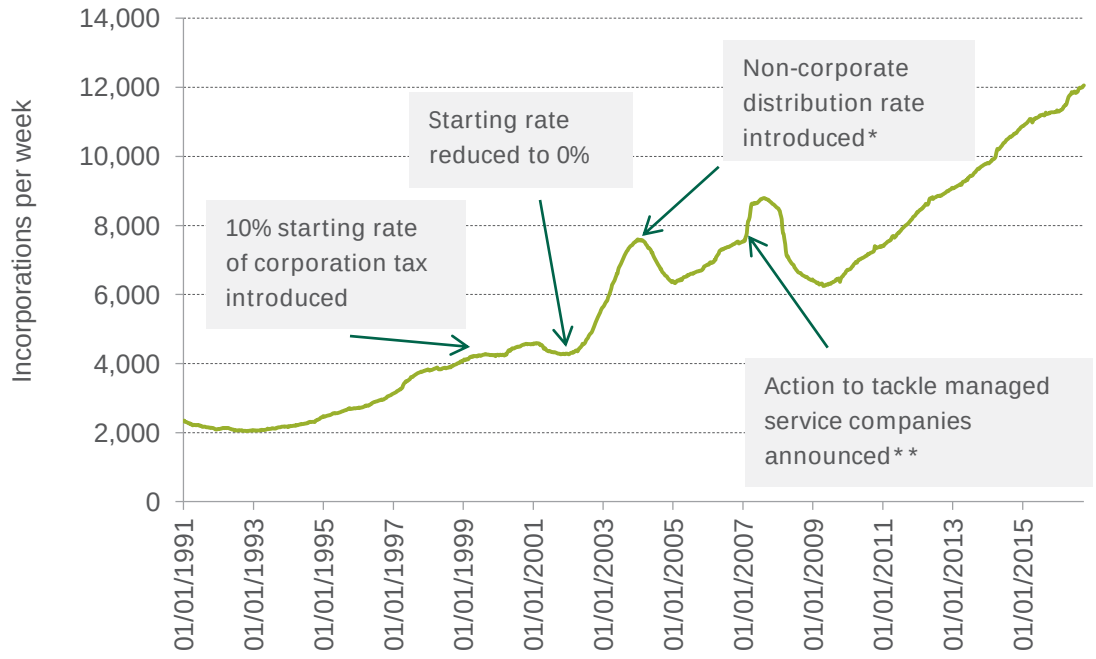
[30] See L. Blow, M. Hawkins, A. Klemm, J. McCrae and H. Simpson, 'Budget 2002: business taxation measures', IFS Briefing Note 24, 2002, https://www.ifs.org.uk/publications/1774.

[31] Box 4.1 in Office for Budget Responsibility, *Economic and Fiscal Outlook: November 2016*, http://budgetresponsibility.org.uk/efo/economic-and-fiscal-outlook-november-2016/.

threshold. This is true to a lesser extent for the self-employed, but there is almost no bunching among employees. The same is true at other such thresholds.[32]

One major reason company owner-managers are more able to respond to tax incentives is their flexibility to choose when to take income out of their company. When the government announced in advance that the income tax rate on incomes above £150,000 was going to increase from 40% to 50% (or from 25% to 30.56% for dividends) in 2010–11, people expecting to have incomes above that level had an incentive to take income before that year. Figure 7.8 shows that there was a sharp jump in dividend income among this high-income group in 2009–10, the year before the tax rise, and then a drop when the tax was increased in 2010–11. In contrast, there is little sign of employment income being brought forward in that way.

Figure 7.6. Incorporations per week since 1991 (52-week moving average)



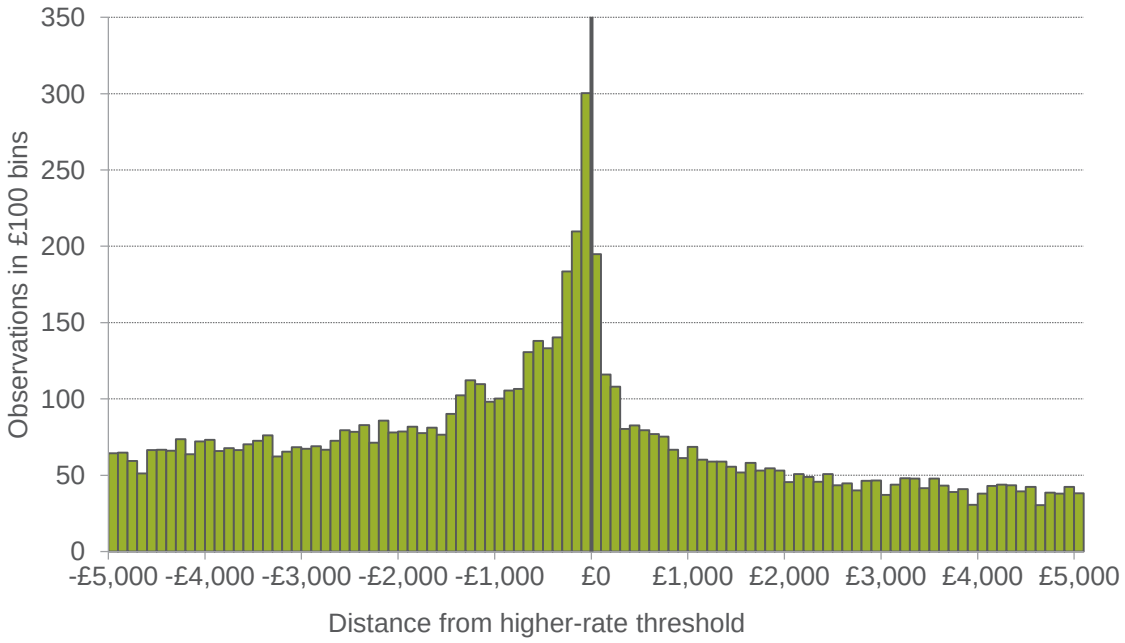
* This effectively marked the end of the tax advantage of the starting rate for most company owner-managers. See footnote 15.

** For more details on the response of incorporations to this measure, see C. Crawford and J. Freedman, 'Small business taxation', in S. Adam, T. Besley, R. Blundell, S. Bond, R. Chote, M. Gammie, P. Johnson, G. Myles and J. Poterba (eds), *Dimensions of Tax Design: The Mirrlees Review*, Oxford University Press for IFS, Oxford, 2010, https://www.ifs.org.uk/publications/7184.

Source: Correspondence with Companies House.

[32] There is also evidence that small companies often reported profits at the £10,000 threshold when the starting rate was in place. See M. Devereux, L. Liu and S. Loretz, 'The elasticity of corporate taxable income: new evidence from UK tax records', *American Economic Journal: Economic Policy*, 2014, 6(2), 19–53. Firms partly achieved this 'bunching' by claiming more capital allowances, including in ways that may represent avoidance or evasion behaviour rather than genuine productive investment. See A. Brockmeyer, 'The investment effect of taxation: evidence from a corporate tax kink', *Fiscal Studies*, 2014, 35, 477–509.

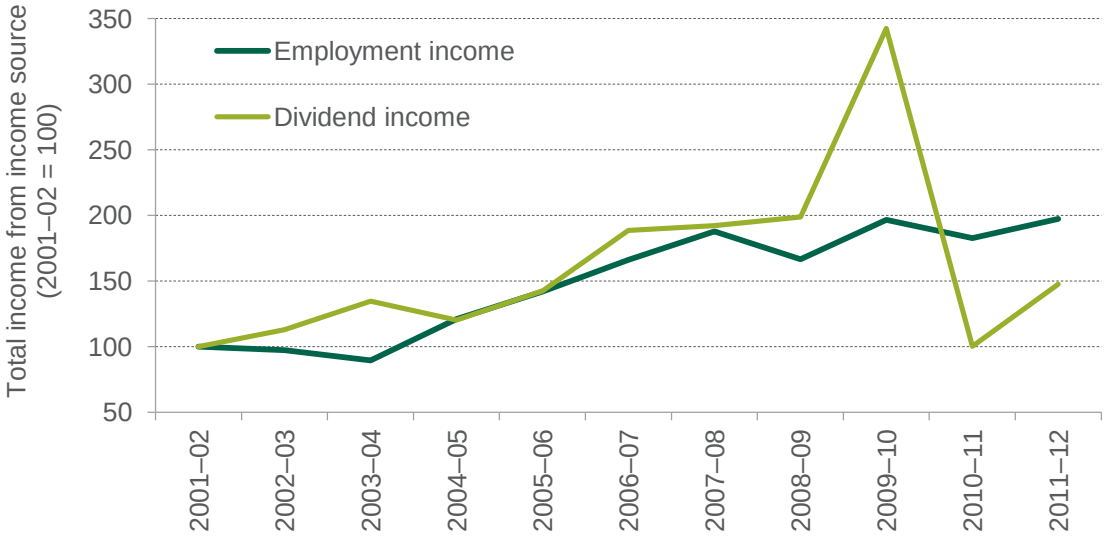
Figure 7.7. Bunching at the income tax higher-rate threshold among company owner-managers, 2003–04 to 2007–08



Note: Distance from higher-rate threshold measured in 2007–08 prices.

Source: S. Adam, J. Browne, D. Phillips and B. Roantree, 'Frictions and the elasticity of taxable income: evidence from bunching at tax thresholds in the UK', mimeo, forthcoming, based on data from the Survey of Personal Incomes (a sample of income tax records).

Figure 7.8. Trends in different income sources for group affected by 50% income tax rate



Note: More individuals had to file tax returns in 2010–11, leading to slightly understated income falls in that year.

Source: J. Browne and D. Phillips, 'Estimating the size and nature of responses to changes in income tax rates on top incomes in the UK: a panel analysis', mimeo, forthcoming, based on SA302 (income tax return) data.

7.4 Should the self-employed and company owner-managers be taxed less heavily than employees?

The fact that similar individuals doing similar work can be taxed very differently according to whether they are an employee, self-employed or running an incorporated company is a problem. So, too, is the fact that company owner-managers can achieve very different tax rates depending on how they take income out of their companies. These distinctions clearly raise issues of fairness. They also distort individuals' choices, which can reduce economic efficiency as some people are induced to run their own businesses when, if incentives were not distorted by the tax system, they would rather be employed by others. The need to devise, administer, comply with and monitor rules to distinguish the different legal forms imposes costs of a different kind, diverting officials, taxpayers, accountants and occasionally the courts from more productive activities. Finally, the distinctions inevitably open up possibilities for avoidance and evasion – further exacerbating these problems of unfairness, inefficiency and diverted resources.

Given these factors, many people would agree that genuinely similar individuals doing genuinely similar work should be taxed in the same way regardless of legal form – though some might argue for using lower tax rates to compensate for other disadvantages that the government itself attaches to different legal forms (such as lower employment rights or reduced state benefit entitlements). A different argument for tax differentiation is that, while in some cases (such as computer programmers or taxi drivers) similar individuals might do similar activities in different legal forms, often people running their own businesses are doing something fundamentally different from employees, including investing, innovating, taking risks and other such entrepreneurial behaviour. These may merit preferential tax treatment. We discuss both of these arguments for different treatment below.

A more pragmatic argument for taxing the self-employed and company owner-managers at lower rates than employees is that the former two groups are more responsive to tax (their taxable incomes are more 'elastic'). The more a tax reduces taxable income, the lower the revenue yield from the tax, and the greater the loss of taxpayer welfare per pound of revenue raised. So it can be efficient to set lower tax rates for more responsive groups. The self-employed and company owner-managers are more responsive to tax in part because they have more ways to manipulate their incomes for tax purposes (rather than simply because of 'real' economic responses such as the amount of effort they put in). The first way to deal with this, therefore, is to reduce the options that the self-employed and company owner-managers have to avoid (or evade) taxes – for example, by taxing capital gains at the same rates as ordinary income. Sensible policy changes would reduce the extent to which the self-employed and company owner-managers had more elastic incomes than employees, though not eliminate the difference entirely. But any potential efficiency gains that remained would have to be weighed against the costs of differentiation. And there are clearly equity concerns over a policy of providing lower tax rates to one group because they can more easily avoid or evade tax.

Should lower taxes be used to offset other disadvantages?

As well as differences in tax rates, different legal forms are treated differentially by many other parts of government policy. Might lower tax rates for the self-employed and company owner-managers be justified as compensating for other ways in which the government disadvantages these forms? In summary, there is an argument for lower

taxes to reflect the fact that the self-employed have reduced entitlement to some social security benefits, but in practice this difference is now relatively small. We argue that the tax system should not be used to offset differences in employment rights or compliance burdens between different legal forms.

Publicly-funded benefits

A common argument in favour of lower NICs rates on the income of the self-employed is that they have reduced entitlement to publicly-funded benefits compared with employees. In principle, that is a reasonable argument: if the benefit system creates a bias in favour of employment over self-employment, there is a case for an offsetting tax rate differential to level the playing field.[33] However, in practice, the difference in entitlements between employees and the self-employed is now relatively small. Unlike employees, the self-employed are not entitled to contribution-based jobseeker's allowance or statutory maternity/paternity/adoption/shared parental pay. But what used to be the biggest difference in entitlements has now been removed. Previously, the self-employed accrued rights to the basic state pension, but not to the earnings-related top-up (state second pension). Employees could choose to build up entitlement to the state second pension or to 'contract out' of it in exchange for a commensurately reduced rate of NICs on their earnings. The new single-tier pension being rolled out from April 2016 will instead apply equally to the self-employed and all employees; but while formerly contracted-out employees must now pay the full rate of NICs in return for this entitlement, the self-employed are seeing their entitlement increase with no such increase in their NICs rate.

The NICs advantage of self-employment over employment was already far bigger than could be justified by any difference in benefit entitlements, and this reform to state pensions has increased the disparity. HMRC estimates that the revenue forgone by applying lower NICs rates to the self-employed exceeded the value of their reduced pension entitlements by £3.2 billion (or £800 per self-employed person) in 2015–16, increasing to £5.1 billion (£1,240 per self-employed person) in 2016–17.[34] To put that into context, total self-employed NICs revenue in 2016–17 is expected to be £3.0 billion.[35] Before allowing for the reduced benefit entitlements that remain, they are paying only 37% of the NICs that would be paid if they were employed. Differential benefit entitlements that remain may justify some difference in tax rates, but not on anything like this scale.

[33] In so far as other tax and benefit policies also have the net effect of favouring one legal form over another, there is a similar case for offsetting it through differential tax rates to level the playing field. This applies, for example, to the rules that allow more generous deductibility of work-related expenses for the self-employed than for employees, and to tax-advantaged forms of remuneration, such as redundancy pay, that are only available to employees. Of course, the prior question is whether some legal forms should be favoured in the first place. As far as possible, it would be better to apply the same benefit entitlement rules, expense deductibility rules, etc. across different legal forms than to offset such differences with differential tax rates.

[34] See HMRC, 'Estimated costs of principal tax reliefs', December 2016, https://www.gov.uk/government/statistics/main-tax-expenditures-and-structural-reliefs. Based on the number of self-employed individuals in 2016 Q3 (see Figure 7.1).

[35] Source: Appendix 4 of Government Actuary's Department, *Report by the Government Actuary on: the Draft Social Security Benefits Up-Rating Order 2016; and the Draft Social Security (Contributions) (Limits and Thresholds Amendments and National Insurance Funds Payments) Regulations 2016*, 2016, https://www.gov.uk/government/publications/report-to-parliament-on-the-2016-re-rating-and-up-rating-orders.

Employment rights

Employment law bestows employees (and 'workers' to a lesser degree) with a set of rights that self-employed people do not have (see Box 7.1 earlier). However, unlike higher state benefit entitlements, these employment rights are not a benefit given by the government to employees, but a benefit that the government requires employers to give to their employees. In so far as these rights make employment more attractive to the employee (relative to self-employment), they also make employment less attractive to the employer (relative to getting the work done by a self-employed contractor). So it is not clear that the existence of these rights biases the economy overall towards more employment and less self-employment. The government is not favouring employment over self-employment overall in a way that might justify an offsetting tax differential; it is merely redistributing between the two parties *within* an employment relationship. Indeed, in a well-functioning labour market, we would expect an employee's greater employment rights to be offset by lower earnings, making them (on average) no more likely to choose employment over self-employment than they would in the absence of these rights.[36]

Compliance burdens

It is sometimes argued that differences in tax rates between different legal forms are justified by a difference in the burden of tax (or regulatory) compliance that the government imposes on them. For example, company owner-managers must fill out corporation tax and income tax returns, deal with capital gains tax and dividend tax, file company accounts, and so on.

Unlike employment rights, this is a government-imposed difference in the *total* burden associated with a particular legal form, not just a transfer of burdens from one party to another *within* one legal form. In that respect, differential compliance costs have something in common with differential state benefits entitlements, discussed above. In addition, however, compliance costs add to total resource costs in the economy – they are not simply a transfer of resources between different people like state benefits are. That is important. If people shift between legal forms because of higher benefit entitlements, their gain in higher benefit entitlements is mirrored by a corresponding loss to the exchequer; there is no net gain to society from such a shift. There is therefore a case for using tax rates to offset the difference in entitlements and avoid the inefficiency of people choosing their legal status to gain preferential treatment rather than for underlying commercial reasons.

In contrast, if people shift between legal forms as a result of compliance costs, their gain in reduced compliance burdens is not offset by a loss to the government. Ideally, of course, there would be no such difference in burdens on different legal forms (and there are many features of the system that are designed to mitigate burdensome obligations on small businesses, including a VAT registration threshold and less onerous accounting requirements). But, if such differences do exist, it is then more efficient for the economy to have less of the burdensome form, just like a sector of the economy facing high costs of any other kind should be smaller. The government should not push the economy back towards having as much of the costly activity as it would if the cost were not there. The same argument applies not just to differences in tax compliance costs, but also more

[36] While this wage adjustment might offset the difference in rights on average, note that it might still be the case that workers who value these protections unusually highly, and firms that find them unusually cheap to provide, will tend to favour employment relationships rather than self-employment, and vice versa.

widely to differences in regulatory burdens and employment rights that raise the net burden on a legal form.

Should lower tax rates be used to increase 'entrepreneurship'?[37]

Employees, the self-employed and company owner-managers often differ in many ways, including in how much risk they take and whether they conduct investment, for example. The first question is whether any such differences merit preferential treatment in principle. Even where they do, we must also ask whether differential tax rates are the best-targeted way to provide it, and whether the benefits outweigh the costs of differentiation described above.

One fundamental difference is that, unlike employees' wages, the income of the self-employed and owner-managers often represents a return to capital invested as well as labour. While it is inevitable that real-world tax systems discourage work to some extent, economic theory suggests that they should not additionally discourage investment. Taxing earnings or expenditure discourages work by reducing the amount of goods and services that working enables someone to buy. Investing (or keeping) money in a business defers consumption from today until tomorrow, and there is little reason to tax future consumption more heavily than today's consumption: it further distorts behaviour and is an inefficient way to raise revenue.[38] Wanting to avoid discouraging investment while taxing labour income provides a prima facie case for applying reduced tax rates to the self-employed and company owner-managers, whose income is a mixture of returns to capital and labour. Crucially, however, we can avoid discouraging investment in a better-targeted way than by applying reduced tax rates on income, by instead adjusting the tax *base* to give an allowance for the money that has been invested in the business. We return to this in Section 7.5. Given this superior alternative, investment in the business does not provide a good argument for lower tax rates for the self-employed or company owner-managers.

Investment aside, preferential rates of tax are often defended as essential to reward difficult and risky entrepreneurial activity. But it is important to recognise that the difficulty and risk associated with entrepreneurship do not in themselves justify favourable tax treatment. If the market does not provide sufficiently high rewards for such activities, they should not be undertaken: it is not a justification for special tax breaks. What is needed (though not necessarily sufficient) to justify preferential tax treatment is a reason why the market will lead to too few 'entrepreneurs' when the tax system is neutral between legal forms. That is, preferential tax treatment may be justified if markets fail to provide the appropriate incentives for entrepreneurship.

In some cases, the tax system itself distorts the market rewards to different choices. Risk-taking is an example of this. A higher tax rate per se does not necessarily discourage risk-taking. If the government taxes high returns, but also fully offsets losses at the same rate, it is sharing in both upside and downside risk. This should not make risky investments any

[37] For a fuller discussion of these arguments, see C. Crawford and J. Freedman, 'Small business taxation', in S. Adam, T. Besley, R. Blundell, S. Bond, R. Chote, M. Gammie, P. Johnson, G. Myles and J. Poterba (eds), *Dimensions of Tax Design: The Mirrlees Review*, Oxford University Press for IFS, Oxford, 2010, https://www.ifs.org.uk/publications/7184.

[38] For a fuller discussion of this argument, and caveats, see chapter 13 of J. Mirrlees, S. Adam, T. Besley, R. Blundell, S. Bond, R. Chote, M. Gammie, P. Johnson, G. Myles and J. Poterba, *Tax by Design: The Mirrlees Review*, Oxford University Press for IFS, Oxford, 2011, https://www.ifs.org.uk/publications/5353.

less attractive relative to safe ones.[39] Yet in practice, tax policy does discourage risk-taking. That is mainly because tax policy does not treat the upside and downside symmetrically. Marginal tax rates that are higher at high incomes, for example, mean that above-average returns are taxed more than below-average returns are cushioned. And the tax system does not currently match taxation of profits with symmetrically generous rebates for losses: losses can only be set against other income (there are no cash refunds), with significant restrictions (which differ between companies and the self-employed) on what income they can be used to offset. Losses carried forward to set against future income get no compensation for the delay and there is a risk that the losses can never be used. Being taxed on positive returns but not symmetrically cushioned from negative returns does discourage risk-taking. It is not clear that the government should actively encourage risk-taking, and in any case lower tax rates for certain legal forms are not an effective way to do so. But nor should it actively discourage risk-taking. A sensible focus would be on reducing the disincentives currently created by asymmetric taxation, and in particular reforming the treatment of losses. We return to this in Section 7.5.

Even where the tax system does not distort behaviour, market failures can arise in relation to entrepreneurship. For example, there may be too few new ideas tried out because innovators do not reap all of the rewards (some 'spill over' to other businesses that can learn from the experiences of the innovator); or some small and/or new firms may find it prohibitively expensive to raise external finance because potential lenders have less information than would-be borrowers about the firm's prospects. Such market failures create a case for government intervention. But blanket reductions in tax rates for all the self-employed and company owner-managers are poorly targeted at such problems. It is better to determine which specific activities justify different tax treatment and design a policy targeted at those activities.[40] It may be difficult to find precisely targeted measures that will encourage the kind of socially beneficial 'entrepreneurship' that is hard to define but nevertheless real. Yet most small businesses are not particularly innovative and do not generate significant spillover benefits to wider society. From newsagents to IT contractors, they consist of people quietly going about the (perfectly honourable) business of making a living by providing valuable goods and services to others – much as most ordinary employees do. There is little evidence that the gains from using across-the-board lower rates to promote those socially beneficial activities that cannot be targeted more directly are big enough to justify scattering tax benefits so widely and creating the problems of boundaries in the tax system highlighted above.

7.5 How should tax policy be changed?

The preceding sections discussed the problems caused by taxing employees, the self-employed and company owner-managers in different ways. The tax system should not favour one legal form over another without good reason for doing so. It is difficult to make a compelling case for the differences in headline tax rates that we currently have.

[39] In effect, the government is providing a form of insurance for the investor, cushioning both the possible upside and the possible downside. Individuals may in fact respond by taking bigger (pre-tax) risks, leaving the after-tax risk and returns they face similar to what they would have been without the tax. The government itself, however, is now making a risky investment in the business, with a boost to tax revenue if the risk pays off but a corresponding downside if it does not.

[40] Examples of more-targeted (though not always well-designed) policies include R&D tax credits that aim to increase innovation and loan guarantees, enhanced investment allowances and venture capital schemes that aim to increase access to finance for small firms.

Any reforms in this area must be mindful that the taxation of employees, the self-employed and company owner-managers sits exactly at the point where many parts of the tax system come together. This is evidenced by the fact that incentives to switch between legal forms depend on the bases and rates of income tax (including the treatment of dividends), NICs, corporation tax and capital gains tax. Changing any one of these has far-reaching effects: tax rates on earnings affect all employees, not just those who might otherwise set up a business; corporation tax affects all businesses, from one-man bands to multinationals; taxation of dividends and capital gains affects portfolio shareholders and buy-to-let landlords as well as business owner-managers. As such, the tax treatment of legal forms should always be seen in the context of the whole tax system.

The comprehensive Mirrlees Review of the UK tax system undertaken for IFS proposes a design for the whole tax system that aligns the taxation of legal forms as just one part of a broader plan.[41] Essentially, it argues that the same overall rate schedule should apply to income from all sources, but with full allowances (at both the personal and corporate tax levels) given for amounts saved and invested to avoid discouraging those activities.

Minimising (or removing) the tax differences across boundaries (e.g. between employees and those running their own business) is the best way to deal with the problems that arise because of boundaries. Many of the concerns highlighted in Section 7.3 – such as labour income being characterised as capital income – would be dealt with directly through alignment of tax rates.

It is tempting to deal with boundary problems by trying to write and police rules that determine what should fall on each side of the boundary (such as 'IR35'[42]) to prevent people exploiting the tax differentials. It is also tempting to try to solve a narrow problem without affecting the rest of the tax system by introducing different tax regimes for (say) a subset of small businesses. But these approaches are the policy equivalent of 'whack-a-mole': one particular problem is fixed, but at the expense of another one popping up elsewhere in the system. If definitions around the boundaries are adjusted, the new definitions will quickly come under pressure. A special regime for 'small businesses' would add another boundary to the tax system (between small and large businesses) that would create problems of its own and not reflect any underlying principle. Such policies are sometimes better than nothing. But they are at best a sticking plaster rather than a solution to the underlying tensions in the tax system, and at worst can create more problems than they solve.

Sometimes the government does even worse than this by increasing the distinctions between legal forms. For example, faced with a boundary between (higher-taxed) labour income and (lower-taxed) returns to capital across the tax system as a whole, in 2008 the government introduced entrepreneurs' relief for owner-managed businesses, exacerbating the problem at precisely the point where it is most acute.

A different approach is needed.

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[41] J. Mirrlees, S. Adam, T. Besley, R. Blundell, S. Bond, R. Chote, M. Gammie, P. Johnson, G. Myles and J. Poterba, *Tax by Design: The Mirrlees Review*, Oxford University Press for IFS, Oxford, 2011, https://www.ifs.org.uk/publications/5353; see especially chapter 19. All documents related to the Mirrlees Review are available at https://www.ifs.org.uk/publications/mirrleesreview/.

[42] IR35 rules try to prevent individuals disguising their employment by operating as an independent contractor (see https://www.gov.uk/guidance/ir35-find-out-if-it-applies).

Long-run goal: align the tax treatment of income across legal forms

Aligning the treatment of different legal forms requires applying the same overall tax rate schedule to income derived from employment, self-employment and companies – bearing in mind that this overall rate schedule currently involves varying combinations of income tax, NICs, capital gains tax and corporation tax, depending on the income source. Broadly, this could be achieved by (i) aligning the NICs paid by self-employed individuals and those paid by employers and employees combined (preferably in the course of integrating NICs with personal income tax) and (ii) taxing dividend income and capital gains at the same rate schedule as earned income (including employee and employer NICs), with reduced tax rates for dividends and capital gains on shares to reflect corporation tax already paid. This process would include removing entrepreneurs' relief, though in many cases the reduced capital gains tax rates for shares would limit the increase in the tax rate that this entails. Note that alignment does not necessarily require an increase in the corporation tax rate, which would raise valid concerns around making the UK less competitive. Instead, overall rate alignment could be achieved at the personal level by adjusting dividend and capital gains tax rates while keeping a relatively low corporation tax rate (set with reference to multinationals). Aligning the treatment of these income sources would also mean reversing the recent trend towards having large separate allowances in each tax, something that now favours incorporation since a company owner-manager, unlike an ordinary employee, can benefit from additional tax-free allowances for dividends and capital gains as well as from the main income tax personal allowance.

The income of the self-employed and company owner-managers generally reflects a mix of rewards for labour and capital. Aligning the treatment of total income would almost certainly lead to higher tax rates on income from self-employment and companies and thus to higher rates on the returns to capital. On its own, therefore, simply aligning tax rates across legal forms would create undesirable disincentives to save and invest. Higher tax rates on profits, dividends and capital gains can make otherwise viable investments unviable. This is undesirable and results in a perceived tension between keeping capital tax rates low so as not to discourage saving and investment, and raising them towards personal income tax rates so as to minimise tax avoidance and avoid distorting choices (as discussed above). The attempts to manage this trade-off have arguably been at the heart of capital tax policy, and especially gains tax reform, for decades (see Box 7.5). However, this trade-off is not as inescapable as it might seem.

In a nutshell, the solution is to tax the returns to capital and labour at the same rate at the margin (thereby removing distortions over how to take income) but to design the tax base so as to avoid disincentives to save and invest. The latter is achieved by giving full allowances (at both personal and corporate tax levels) for amounts saved and invested. There are two ways to go about doing this:[43]

- Cash saved or invested can simply be deductible from taxable income/profits at the point it is saved/invested. This is the approach currently applied to pension contributions by the income tax system, and to business investment in limited cases where 100% first-year allowances are available (as in the case of the annual investment allowance).

[43] These approaches and their properties – including other advantages not discussed here – are explained in J. Mirrlees et al., *Tax by Design: The Mirrlees Review*, Oxford University Press for IFS, Oxford, 2011, https://www.ifs.org.uk/publications/5353. For brevity, we do not discuss here how debt and equity finance should be treated – another thorny area that could be largely resolved as part of a reform like this.

- A deduction could be given each year for an assumed (risk-free) rate of return to capital previously saved/invested. This is the rate-of-return allowance (RRA) treatment of saving and the allowance for corporate equity (ACE) treatment of business investment, neither of which has ever been used in the UK although both are now used in other countries.

Timing aside, these two treatments are equivalent. With stable tax rates, the stream of allowances given each year under the second approach is worth the same as the up-front deduction given under the first approach. Both avoid discouraging saving and investment, since an asset that (in the absence of taxation) yields just enough of a return to be worth the up-front cost will see the taxable income generated exactly offset by the tax deduction for the investment cost. Only returns in excess of that level will yield a net tax liability, and since only a fraction of the excess will be taxed away, assets that yield such high returns will still be worthwhile investments. And in both cases the deduction depends only on the amount saved/invested, irrespective of the actual return it generates; each extra pound of income is taxed in full regardless of the form in which it is taken, so there is no tax incentive to choose one legal form over another or to dress up one form of income as another.

This approach helps to resolve a conundrum that policymakers around the world have struggled with for decades: the tension between preventing tax avoidance on the one hand and minimising disincentives to save and invest on the other. Eager to encourage saving and investment, policymakers have sought to reduce tax rates on capital income; but wary of opening the door to widespread conversion of labour income into capital income, they have also sought to keep tax rates as closely aligned as possible. The result has usually been an awkward compromise, with capital income taxed at reduced rates (and often different forms of capital income taxed at different rates), leaving some disincentive effects and some scope for avoidance. Taxing capital income in full *while giving a full deduction for capital costs* addresses both problems.

As discussed in the previous section, the hurdle for departing from alignment should be high, with measures targeted as precisely as possible on the specific problem to be addressed and assessed against this benchmark. All too often, preferential treatments are bolted onto a flawed existing system with too little regard for how they will interact with policies already in place or what they mean for the system as a whole.

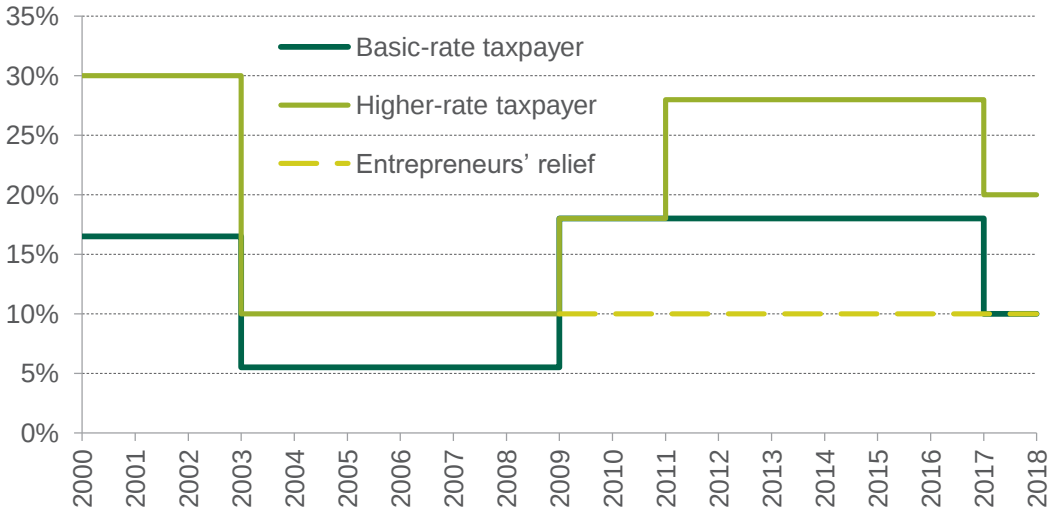
Steps towards the long run

The solution proposed above would require major changes. Ideally, the government would set out a vision for the tax system and a path that moved us towards the end goal. In the short run, it would not necessarily be wise to pick one of the reforms highlighted above and introduce it independently of a wider set of reforms. Changing any subset of taxes in isolation can lead to problems elsewhere. For example, it would be possible to align the treatment of employees and the self-employed by increasing the rate of NICs on the self-employed. But this would also increase the incentive for a self-employed individual to incorporate and take their income in the form of dividends or capital gains. Similarly, aligning the tax on capital gains with marginal income tax rates without any changes to the tax base would reduce the incentive to recharacterise labour income as capital income, but come at the expense of discouraging saving and investment. Policies that deal with only a subset of problems in isolation therefore require careful consideration of any possible costs and benefits.

Box 7.5. The capital gains tax roller coaster

Since its introduction, capital gains tax has been increased and cut, often in different ways for different types of assets or taxpayers, as successive Chancellors battle with the trade-offs between higher and lower capital tax rates described in the main text. This is a potted history of the main changes.[a] Figure 7.9 shows the result for one type of asset.

Figure 7.9. Capital gains tax rates for a business asset held for two years, 2000–01 to 2018–19



Note: Years refer to the start of financial years (e.g. 2000 refers to financial year 2000–01).

Source: IFS Fiscal Facts, https://www.ifs.org.uk/tools_and_resources/fiscal_facts/.

Capital gains tax was introduced in 1965 at a flat rate of 30%. Geoffrey Howe introduced indexation allowances in 1982, ensuring that only gains in excess of inflation were taxed. In 1988, Nigel Lawson aligned capital gains tax rates with individuals' marginal income tax rates. In 1998, Gordon Brown scrapped indexation allowances and introduced taper relief, which reduced capital gains tax by more the longer an asset was held and was more generous for 'business' than 'non-business' assets. Taper relief was subsequently made more generous, but then being scrapped by Alistair Darling in 2008. Mr Darling went back to a single flat rate, set at 18%, but quickly (following a backlash from business lobby groups) introduced entrepreneurs' relief, which applied a 10% rate to the first £1 million (since increased to £10 million) of lifetime gains for some business assets (see Section 7.3). George Osborne raised the rate to 28% for higher-rate taxpayers in 2010, but then cut it (for most assets) to 20% for higher-rate taxpayers and 10% for basic-rate taxpayers in 2016.

It would be better to get off this roller coaster – the main text discusses how to do this – than continue the ride that successive Chancellors are taking us on.

[a] See S. Adam, 'Capital gains tax', in R. Chote, C. Emmerson, D. Miles and J. Shaw (eds), *The IFS Green Budget: January 2008*, http://www.ifs.org.uk/budgets/gb2008/08chap10.pdf.

One approach to moving towards the long run (without overhauling the tax system overnight) is to look for reforms that improve the structure of the tax system and accompany these with changes to rates (or other parts of the system) that offset any new distortions created. Here we provide four potential examples of this approach:

- Section 7.4 explained that the tax system can discourage risk-taking by not providing full loss offsets. Increasing the generosity of loss offsets would reduce this disincentive. There may be good reasons for the government to be wary of giving out tax refunds in cash whenever losses are made, not least concerns about potential tax evasion. But there are various less radical ways in which the generosity of loss offsets could be increased, including allowing losses to be set more easily against profits from other activities, extending the period over which losses can be carried back or allowing losses to be carried forward with an interest markup to compensate for the delay before they can be utilised.[44] However, (absent a wider set of reforms) more generous treatment of losses would increase the incentive to move out of employment and into self-employment or company owner-management, thereby increasing the distortion between legal forms that we would like to reduce. It would also have a revenue cost for the exchequer. One could make a judgement that the benefits outweigh the costs. Another option would be to increase tax rates on business profits, so that there was no change in the average tax burden on businesses or the average incentive to set up a business. Such a package, which would be broadly revenue neutral, could reduce the disincentive to take risks and reduce the incentive to take income as business profits, while leaving the average tax burden on businesses and the average incentive to set up a business unchanged.

- A similar argument could be made with respect to investment costs. The current system discourages investment by not allowing the full cost to be deducted from tax. A short-run option that increased investment incentives for the self-employed and company owner-managers (and for small companies more generally) would be to extend the annual investment allowance to assets other than plant and machinery. This could be accompanied by higher marginal rates on the returns to investment. This would increase incentives to invest (at least for assets that received more generous treatment) while leaving average incentives over legal forms broadly unchanged.

- The government could consider abolishing entrepreneurs' relief. Unlike the two preceding examples, this would reduce the incentives to move from employment to self-employment or company owner-management. It would also: (i) substantially reduce the incentive for individuals to retain profits in a company (or through business assets) when, absent the tax, they would prefer to spend the money sooner or invest it elsewhere; (ii) reduce the unfairness caused by discriminating against individuals who cannot convert the returns to their labour into capital gains; and (iii) simplify the system by no longer requiring a distinction between qualifying and non-qualifying assets or records of disposals in order to enforce the lifetime limit. The cost of doing this reform in isolation is that it would increase tax on investment returns and thereby reduce investment incentives in some cases. Entrepreneurs' relief always lacked a clear rationale (there is little evidence that reduced rates of capital gains tax are well targeted at alleviating any concerns around business start-ups, for example). There is

[44] For the same reason, losses should also have an interest rate adjustment when carried back.

an argument that the benefits of scrapping the relief outweigh the cost. However, the cost of increasing the tax on the return to investment could also be ameliorated by using the revenues raised to reduce the burden of capital gains tax on all assets. For example, one attractive option would be to allow capital gains to be inflation adjusted before being taxed (such that only real gains were taxed), as was the case before 1998. An alternative would be to give more deductions for asset purchase costs via an RRA as described above. Such a package would improve the structure of the system and remove various distortions, while reducing the impact of scrapping entrepreneurs' relief on investment.

- Another option is to move to a single allowance for all income sources. Currently, there are separate tax-free allowances for different income sources, which favours people who are able to diversify their income sources and time their income carefully. Those (particularly company owner-managers) who can take advantage of all of the separate nil-rate bands for interest, dividends and capital gains, as well as their income tax personal allowance, can receive around £28,000 a year free of tax, compared with the £11,000 available to those who can only use their ordinary personal allowance. Moving to a single allowance to set against income from all sources (perhaps retaining much smaller de minimis allowances for individual income sources for administrative reasons) would reduce incentives to be self-employed or a company owner-manager. The revenue raised could be used to make the main allowance larger or reduce taxes elsewhere in the system.

The spirit of these packages is to find a practical way to improve parts of the tax system in the short run, while offsetting any distortions that can arise elsewhere in the system as a result. Two broad points should be noted. First, such an approach does have distributional consequences (there would be winners and losers). Second, such packages do not completely avoid increasing distortions in some areas. As long as investment costs remain in the tax base (such that marginal investments attract tax), any increase in rates can discourage some investment. Packages of reforms can be designed so that the benefits of a reform are sufficiently high to outweigh the costs. But any short-run moves towards the full alignment outlined above will necessarily involve trade-offs that must be managed.

7.6 Conclusion

The overall shape of the labour market has not changed radically, yet. For example, 85% of the workforce are still employees. But in recent years we have seen notable trends, including substantial growth in the number of individuals working for themselves either through self-employment or as company owner-managers. We cannot know to what extent these changes are linked specifically to the 'gig economy' rather than to broader changes in the labour market; we simply lack sufficiently detailed data. It has become slightly more common to see individuals working for their own business (rather than as an employee) as a second job and this fits with some commonly-cited examples of the gig economy (such as individuals driving taxis or delivering fast food to supplement their main income). Although looking at the industries in which individuals are working and how these are changing suggests that the recent trends are much broader than those captured by the fashionable 'gig economy' label.

It is possible that the labour market will continue to change as more individuals take advantage of the benefits of working for their own business or find that they have

reduced employment opportunities. The possibilities afforded by digital platforms may lead to further growth in the gig economy. In all cases, there will be ongoing concerns about the potential costs of more precarious and less secure income streams. Now is a good time to consider the employment rights and benefits of different groups.

However, the policy issue that we discuss in this chapter was important before the rise of the gig economy, is important today, and will be important regardless of how the labour market evolves. The tax system provides preferential treatment to the self-employed and company owner-managers (conversely, it provides a penalty to employees). It does so in ways that cannot be rationalised by either reduced entitlement to social security benefits (there are relatively few differences across legal forms) or differences in employment rights or compliance burdens. It is also very hard to make the case that across-the-board lower rates are well targeted at activities where there is a clear rationale for providing a tax incentive. The different tax treatment of individuals according to their legal form is unfair and creates myriad problems, including avoidance opportunities that require complex legislation and suck in the talents of civil servants and accountants.

The government should set out a plan to align the overall tax rate schedules facing employees, the self-employed and company owner-managers, so that a marginal pound of income is taxed in the same way regardless of how it is earned, while at the same time providing full allowances for money invested in a business so that investment is not discouraged. This is preferable to living with the distortions provided by the current system, or patching it up in ways that simply move boundaries in the tax system or reduce one distortion at the expense of another.

Any major reform creates winners and losers. If done in a revenue-neutral way, the winners from this reform would include employees and those whose business income mainly reflected the money they had put into the business in the past. The losers would include those self-employed individuals and company owner-managers whose income (above the amount invested) was subjected to higher rates. There would need to be careful thought as to how the transition to a better system should be done. But it is right that in the long run there should be some losers. Currently, a large group of taxpayers are receiving substantial benefits at the expense of others, and creating a level playing field entails making some individuals worse off. To retain the current system is to allow the clear inequities it delivers to persist. The growth in self-employment and company owner-management (including in response to tax differences) means that the longer we wait to level the playing field, the more losers there will be. The losers would no doubt be more vociferous than the winners. This should not prevent us from fixing the tax system.

8. Reforms to apprenticeship funding in England

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Key findings

The government is committed to 3 million apprenticeship starts in England in the five years from 2015 to 2020.	Apprenticeships are full-time jobs with an accompanying skills development programme, which includes both on- and off-the-job training. The target of an average of 600,000 new apprentices a year in this parliament represents an increase of 20% on the level in 2014–15.
From April 2017, the government is introducing an 'apprenticeship levy', which is a 0.5% tax on employers' paybill above £3 million per year.	The Office for Budget Responsibility (OBR) estimates that the levy will raise £2.6 billion in 2017–18, rising to £2.8 billion in 2019–20. Most of the increase in revenue will not be used to fund apprenticeships. In England, apprenticeship funding is set to increase by £640 million in cash terms between 2016–17 and 2019–20.
We estimate that at least 60% of employees work for an employer who will pay the levy.	This is despite the fact that, as the government highlights, only 2% of employers will pay the levy (because they have large paybills). We would expect a payroll tax such as the apprenticeship levy to result in lower wages for employees. The OBR estimates that the levy will reduce aggregate wages by 0.3% by 2020–21.
Government will pay over 90% of off-the-job training costs for apprenticeships, up to certain price caps.	This will significantly increase the incentive to employ apprentices – particularly those aged 19 or over, for whom the government subsidy was previously 50% or lower.

The increased subsidies will incentivise employers to relabel existing training schemes as apprenticeships.	This is one form of 'deadweight', with the government funding some training that would have occurred anyway. Such relabelling is made easier by the fact that employers can be funded to provide some training themselves.
Significant expansion of apprenticeships could come at the expense of quality.	The new Institute for Apprenticeships may be under pressure to approve new apprenticeship standards quickly. An expanded role for Ofsted is welcome, but it has already expressed concerns about the quality of some of the apprenticeship schemes created more recently.
The government has set all large public sector bodies legally binding targets for apprenticeship starts each year.	All public sector employers with at least 250 employees in England must employ new apprentices amounting to 2.3% of their headcount each year. This potentially costly policy is largely designed to hit the government's target for 3 million new apprentices, not as a way to increase the quality of public services. It should be removed.
There might be a strong case for expanding apprenticeships but the government has failed to make it.	There has not been the collapse in training by employers that the government claims and the returns to public investment in apprenticeships are not nearly as high as the government suggests. However, young people in England are comparatively low skilled and research has found higher returns to apprenticeships than to other forms of vocational education. There is a good case for expanding apprenticeships, but perhaps more gradually and where we can ensure high-quality provision.

8.1 Introduction

The 2015 Conservative general election manifesto contained a commitment to 'support three million new apprenticeships, so young people acquire the skills to succeed'.[1] To help deliver this pledge, the then Chancellor George Osborne announced a new system of apprenticeship funding in the 2015 Summer Budget, with further proposals detailed in the government's five-year plan for apprenticeships published in December 2015. A desire to

[1] Page 17 of https://www.conservatives.com/manifesto.

expand the system of apprenticeships has been expressed by all major UK political parties and the current government's focus on apprenticeships builds on commitments under the previous coalition and Labour governments.

Apprenticeships have existed in some form or other in the UK since at least the 12th century. They have taken many different forms over time, but have historically been focused on young people learning specific skills whilst working under the supervision of more highly skilled colleagues. The Conservative manifesto commitment (which has now been enacted as part of the Welfare Reform and Work Act 2016) concerns the number of publicly-funded apprenticeships starting in England between May 2015 and March 2020. To receive public funding, an apprenticeship must meet certain conditions. For example, it must involve a well-defined skill development programme agreed by government and employers, apprentices must spend at least 20% of their time attending off-the-job training in addition to on-the-job training, and this must last for at least a year. It is these publicly-funded apprenticeships that are the main focus of this chapter. We focus on apprenticeships in England, because the government's targets are only for England and it is in England where the reforms to policy are most radical.

Under the new system due to start in April 2017, employers across the UK will pay a levy equal to 0.5% of their paybill over £3 million per year. The Office for Budget Responsibility (OBR) estimates this will raise about £2.6 billion in 2017–18, rising to £2.8 billion in 2019–20. In England, the government will use its share of the levy to fund an expanded system of subsidies for employers taking on apprentices, with a subsidy of 90–100% of the direct cost of off-the-job training of apprentices up to a given set of price caps. Government spending on apprenticeships is not set to increase by the amount raised by the apprenticeship levy. According to the Department for Education, the budget for apprenticeships in England will rise from £1.8 billion in 2016–17 to £2.5 billion in 2019–20, representing a significant real-terms (after taking into account economy-wide changes in price levels over time) increase of 28% over three years, though the increase is only a fraction of the amount of tax revenue raised by the levy.[2] Alongside this, the government has created a target for all large public sector employers in England to take on new apprentices. This target is that the number of new apprentices joining an employer each year must be equal to 2.3% of that employer's overall headcount in that year. Apprenticeship funding is a devolved matter and it is the responsibility of the devolved administrations to decide how they allocate their share of the levy revenues.

This new system of apprenticeship funding represents a significant reform to public policy. However, it also represents just the latest instalment of decades of major policy reforms that have attempted to improve the quality of vocational education in the UK. These include the creation of Industrial Training Boards in the 1960s, their abolition in the 1980s, the creation of the Youth Training Scheme in the early 1980s, the creation of National Vocational Qualifications in the late 1980s, the creation of Modern Apprenticeships in the early 1990s and the creation of Train to Gain in the mid 2000s. Despite all these attempts, review after review has concluded that the quality of vocational education and the skills of UK workers need to be improved in order to increase productivity (e.g. the Leitch Review in 2006 and the Wolf Review in 2011). The new system

[2] Department for Education, 'Information on apprenticeship levy: data broken down by size and sector and the total apprenticeship budget', August 2016, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/545145/Apprenticeships_-expected_levy_and_total_spend_-_Aug_2016.pdf.

of apprenticeship funding represents the latest effort by government to deal with the 'skills problem'. The frequent changes to the structure and nature of vocational education stand in contrast to the relative constancy and clarity that have existed for academic routes. The policy of successive governments for the last 30 years has been to expand the proportion of young people going into higher education, which has risen from around one-in-six young people in the 1980s to around one-in-two today.[3]

Given that young people are now legally required to stay in some form of education or training until age 18, 16-year-olds today largely have three options: an academic path consisting of A levels and possibly higher education; studying vocational qualifications at further education or sixth form colleges; or doing an apprenticeship. It is not yet clear whether the new system of apprenticeships is intended to act as a significant alternative for young people who would otherwise have gone down the academic path, or whether it is mostly intended to attract young people who would otherwise have studied vocational qualifications in further education or sixth form colleges after age 16. However, the policy is clearly not just targeted at young people, with most of the expansion of apprenticeships in the last six years accounted for by growth among those aged 25 and over. Moreover, it is this group that is due to experience the largest increase in subsidy for apprenticeship training in the new funding system starting in April 2017.

What matters is how these reforms will affect the levels of and types of training done by employers, workers' wages, skills and productivity, and firms' overall performance. To help answer this important set of questions, this chapter does three things. In Section 8.2, we evaluate the rationale for the proposed expansion of funding for apprenticeships in England. In Section 8.3, we describe the key details of the new policy and set it in a longer-term policy context, including how numbers and types of apprentices have evolved to date. In Section 8.4, we analyse the likely effects of the new system of apprenticeship funding on employers' and individual workers' incentives to invest in training and on employment, skills, productivity and wages, and the impact of new targets for employing apprentices in the public sector. Section 8.5 concludes.

8.2 Evaluating the case for government intervention

The new system of apprenticeship funding in England represents a significant reform. The government will collect a substantial sum of money from employers via the apprenticeship levy, increase government subsidies for the training costs of apprenticeships, and create a new system of regulation in an effort to ensure this training is of high quality.

The government's ultimate aim from this reform is to improve productivity through improving the skills of workers by increasing the quantity and quality of vocational

[3] Figure from 1980s based on D. Finegold, 'The roles of higher education in a knowledge economy', Rutgers University, mimeo, 2006, http://www.heart-resources.org/wp-content/uploads/2015/10/The-Roles-of-Higher-Education-in-a-Knowledge-Economy.pdf?e4e997. Figure for today based on estimate of higher education initial participation rate for 2014–15 (https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/552886/HEIPR_PUBLICATION_2014-15.pdf).

training they receive. In its five-year plan for apprenticeships in England,[4] the government argues that the productivity of workers in the UK is below that in other comparable countries and that the skills of young workers are also comparatively low. It also argues that employers underinvest in the training of workers because employers do not expect to reap all the benefits of such training and that this problem has been getting worse over time. The government cites research saying that the economic returns to apprenticeships are significant (with £26–28 of economic benefit generated for each £1 of investment). This is then used to justify the new system of apprenticeship funding due to come into operation in April 2017.

Before we detail the specific aspects of this reform and its likely effects, this section briefly evaluates the case for expanding public subsidies for apprenticeships.

Levels of skills and education

It is well known that worker productivity in the UK is below that in other major economies. For example, in 2015, output per hour worked was below that in Germany, France and the United States, by 21%, 22% and 23% respectively, although it was 22% higher than in Japan.[5] International surveys have also suggested that young people in England have lower levels of numeracy and literacy skills than those in other countries.[6] Indeed, England is also relatively unusual in the pattern of skills across age groups. Across most countries, younger age groups have higher levels of numeracy than older age groups (and, in some cases, much higher levels of numeracy), potentially reflecting increases in skills across generations. This is not the case in England, where young people aged 16–24 have a similar level of skills to the oldest age group (those aged 55–64) in spite of increased levels of formal education (e.g. more young people leaving school with GCSEs). This evidence is potentially a major cause for concern as, unless it reflects reduced deterioration of skills with age in England compared with elsewhere, it could suggest that skills are not improving across generations, whilst they are elsewhere.

A lack of skills amongst UK workers has long been recognised by policymakers. In 2006, the Leitch Review of Skills recommended a series of objectives for increasing the skills of UK workers.[7] The government at the time subsequently instituted a series of additional subsidies and policies to incentivise employers to invest more in training, particularly in the form of Level 2 vocational qualifications (the equivalent of five GCSEs graded A*–C). This included policies such as Train to Gain, which provided additional free training courses to employees who lacked GCSE-level qualifications and/or basic skills, and offered subsidies to employers to compensate for wage costs of employees when attending courses.

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4 HM Government, *English Apprenticeships: Our 2020 Vision*, December 2015, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/482754/BIS-15-604-english-apprenticeships-our-2020-vision.pdf.

5 These figures are calculated from the OECD productivity statistics, which are compiled on a comparable basis. Of course, the workforce's skills are not the only driver of productivity differences. Other issues – such as the types of capital that labour is combined with, how that capital is allocated and the technology utilised by companies – are all important in determining productivity.

6 http://www.oecd.org/skills/piaac/Country%20note%20-%20United%20Kingdom.pdf.

7 http://webarchive.nationalarchives.gov.uk/+/http:/www.hm-treasury.gov.uk/independent_reviews/leitch_review/review_leitch_index.cfm.

Looking at the level of formal education possessed by young people in the UK compared with other countries, the proportion of young people aged 25–34 who leave education with below upper-secondary-level qualifications (e.g. have not achieved five or more GCSEs or equivalent at A*–C) is similar to that seen in other OECD countries (around 15%[8]). However, a much greater share go on to the equivalent of higher education and a lower share leave with intermediate-level qualifications (e.g. A-level or other Level 3 qualifications.) To be specific, 49% of people aged 25–34 in the UK have completed tertiary-level education compared with 42%, on average, across OECD countries, whilst 36% have completed upper-secondary or post-secondary non-tertiary qualifications in the UK compared with an OECD average of 43%.[9] It is also notable that the UK makes relatively little use of vocational upper-secondary education routes compared with other countries.

More worryingly, the 2011 Wolf Review of Vocational Education concluded that many of the vocational qualifications that are offered are of relatively low quality and have relatively low economic return.[10] The Wolf Review recommended greater focus on apprenticeships (as did the Leitch Review), which were claimed to have higher economic returns. To date, the UK has made relatively little use of apprenticeship training. The government quotes figures showing that, in 2008–09, there were 11 apprentices per thousand employees in England whilst this number was as high as 43 in Switzerland, 40 in Germany and 39 in Australia.[11] As we show in Section 8.3, the UK number has been steadily increasing since the mid 2000s, but is still likely to be well below that seen in many other countries. Such figures do not demonstrate a problem in itself, but do represent a clear difference compared with other countries.

The UK does have a productivity and skills problem compared with other countries, which comes in spite of the high and increasing levels of formal education possessed by UK workers. This has been the focus of policymakers' attention for a long time. One persistent set of concerns amongst policymakers is that vocational education is relatively low quality and that use of apprenticeship training is relatively low compared with other countries. The extent to which lower use of apprenticeship training contributes to a skills problem, however, is far from clear.

Employers' investment in training

One motivation highlighted by the government for reforms and extra public funding for apprenticeships is that employers are likely to underinvest in training. Economists have long recognised that employers have incentives to underinvest in the training and skills of their workers.[12] If employees can switch employers fairly costlessly, it is likely to be

[8] Note that this is much lower than the proportion leaving without the standard benchmark of five or more GCSEs at A*–C *including maths and English*, which was about 43% for state-funded schools in 2015–16 (https://www.gov.uk/government/statistics/gcse-and-equivalent-results-2015-to-2016-provisional).

[9] Authors' calculations using tables A1.2 and A1.3 of OECD, *Education at a Glance 2016*, http://dx.doi.org/10.1787/888933396517.

[10] https://www.gov.uk/government/publications/review-of-vocational-education-the-wolf-report.

[11] Page 7 of HM Government, *English Apprenticeships: Our 2020 Vision*, December 2015, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/482754/BIS-15-604-english-apprenticeships-our-2020-vision.pdf.

[12] A.C. Pigou, *Wealth and Welfare*, Macmillan, London, 1912; G. Becker, *Human Capital*, Columbia University Press, New York, 1964; M. Stevens, 'Human capital theory and UK vocational training policy', *Oxford Review of Economic Policy*, 1999, 15, 16–32; D. Acemoglu and J. Pischke, 'Why do firms train?', *Quarterly Journal of Economics*, 1998, 113, 79–119; E. Leuven, 'The economics of private sector training: a survey of the literature', *Journal of Economic Surveys*, 2005, 19, 91–111.

workers who are the principal beneficiaries of any training, in the form of higher wages, because employers will need to pay them at the level their productivity warrants in order to retain them. This gives employers little incentive to invest in training in the first place. If employees are not able to switch employers as freely, then employers can reap some of the benefit in the form of higher profits by holding employees' wages down below the level that their current productivity would warrant. This would give employers some financial incentive to invest in training for their workers, but probably below the socially optimal level.

And while workers might reap significant rewards from training, they may be unable to finance training, may not fully appreciate the likely rewards, and face considerable uncertainty as to how beneficial the training will actually turn out to be.

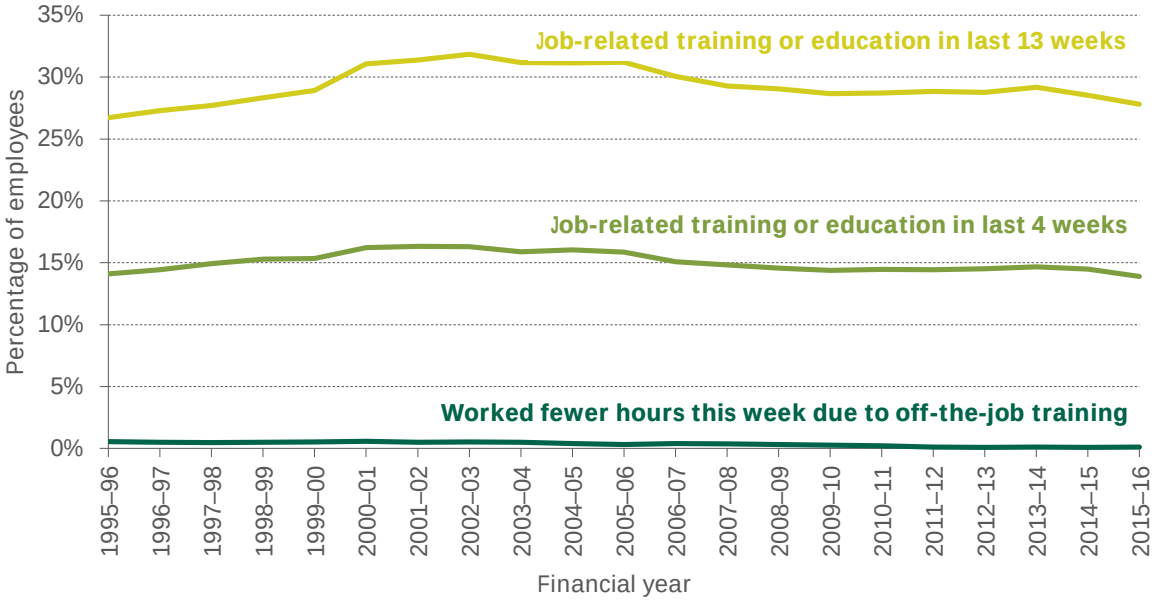
All this means we could easily end up in a situation in which, from society's point of view, employers and workers might be underinvesting in training. This could justify some degree of public subsidy towards training, which we have had in many forms over time (e.g. Train to Gain and existing apprenticeship subsidies).

The government partly justifies additional subsidies for apprenticeship training by claiming that this underinvestment problem has been getting worse over time. In particular, the 2015 Summer Budget and the government's vision for apprenticeships published in December 2015 both quote figures, derived from the Labour Force Survey (LFS), showing a rapid decline in the number of employees attending off-the-job training in the past week, from around 150,000 employees in the mid 1990s to about 20,000 in 2014. This is a fall of more than 80% and certainly looks dramatic. However, it is just one rather peculiar measure, which looks at the number of employees who have worked fewer hours than usual in the past week because they attended off-the-job training. It depends on how people report their hours (in particular whether they regard undertaking training as working fewer hours) and it ignores on-the-job training.

As Figure 8.1 shows, a more useful way of describing this apparently enormous drop is to say that the proportion of employees engaging in this particular form of training fell from 0.5% in the mid 1990s to 0.1% in 2014 – an 80% drop in a very small number, which is a drop of only 0.4 percentage points. This change is barely visible when placed alongside changes in other measures of training taken from the same LFS data: the proportion of employees who report having received any job-related training (i.e. on or off the job) in the past 4 weeks and past 13 weeks. In 2014, 14% of employees reported receiving job-related training in the past 4 weeks, which is slightly down on a figure of 16% in the early 2000s, but similar to the level in the mid 1990s. If we ask about a longer window (the proportion of workers who report receiving some form of education or training in the past 13 weeks), the proportion of workers who report having received training is, of course, higher still, at around a third of all employees, and the trend over time is similar, with a slight rise between the mid 1990s and mid 2000s, followed by a decline afterwards.[13]

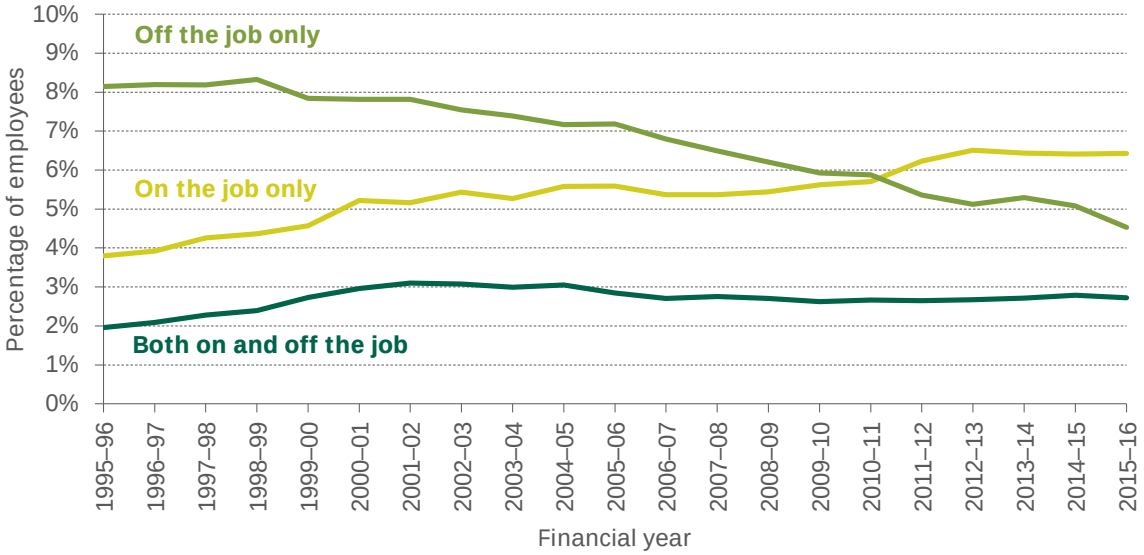
[13] As is shown in Figure 8A.1 in the appendix, job-related training is more prevalent among employees aged 16–39 than it is for employees aged 40–59, although the fall in training has been larger for the younger group than for the older group.

Figure 8.1. Percentage of employees who report receiving job-related training, 1995–96 to 2015–16



Source: Authors' calculations using Quarterly LFS, 1995 to 2015. Restricted to employees aged 16–59.

Figure 8.2. Percentage of employees who report receiving on- and off-the-job training in the last 4 weeks, 1995–96 to 2015–16



Source: Authors' calculations using Quarterly LFS, 1995 to 2015. Restricted to employees aged 16–59.

Figure 8.2 splits the proportion who report having received job-related training in the past 4 weeks (i.e. the middle series shown in Figure 8.1) into those who received it exclusively off the job, those who received it exclusively on the job and those who received a combination of the two. This shows that there has been a clear shift towards more on-the-job training and less off-the-job training. Between the mid 1990s and the mid 2010s, the proportion of employees who report receiving exclusively off-the-job training declines

from about 8% to 4½%, the proportion receiving exclusively on-the-job training increases from 3¾% to 6½% and the proportion receiving a combination rises from 2% to 2¾%.[14]

In using evidence to set out and explain policy, it is incumbent on government to do so in a reasonably full and balanced way. Choosing one particular and very partial measure to suggest that there is a much bigger problem than other more comprehensive data would suggest, risks undermining faith in what might be perfectly sensible policy directions.

Levels of training have declined slightly since the mid 2000s, but there has been no precipitous decline. The proportion of employees receiving some form of training is currently at a similar level to that seen in the mid 1990s. The big change has been in the type of training received, with a shift towards on-the-job training and away from off-the-job training. It is not clear that this change in the mix of training is necessarily a good or bad thing. However, it is important to note it, as the new system of apprenticeship funding will be targeted towards off-the-job training.

In terms of levels of expenditure on training by employers, the Employer Skills Survey estimates that UK employers spent £45.4 billion on job-related training in 2015 (equivalent to around 2.5% of national income or about 6% of total employee wages and salaries in the UK).[15] About half of this figure was spent on off-the-job training, with trainee wage costs accounting for about £7.7 billion and direct training costs accounting for about £15.2 billion in 2015. A further £23 billion was reported to be spent on on-the-job training, with £14 billion on trainee wage costs and £9 billion on trainers' wage costs. Since 2011, employers' reported expenditure on training has fallen by about 2% in real terms (deflating using a measure of economy-wide inflation), which is consistent with the small falls in training for workers we saw in Figures 8.1 and 8.2.

Economic returns to apprenticeships

The new system of apprenticeship funding will increase the public subsidy provided to employers for the costs of training workers, but only if such training is in the form of an apprenticeship and only for off-the-job training costs. The government justifies this approach partly by claiming high economic returns to public funding of apprenticeships. Indeed, the government's five-year plan for the expansion of apprenticeships in England says:[16]

These benefits translate into significant monetary returns for individuals over a working life. These add up to between £48,000 and £74,000 for level 2 apprenticeships; and between £77,000 and £117,000 for level 3 apprenticeships. Those completing an apprenticeship at level 4 or above could earn £150,000 more on average over their lifetime. …These benefits lead to a

[14] Such headline findings are confirmed in other research on levels of training over time (F. Green, A. Felstead, D. Gallie, H. Inanc and N. Jewson, 'What has been happening to the training of workers in Britain?', Centre for Learning and Life Chances in Knowledge Economies and Societies (LLAKES), Research Paper 43, 2013, http://www.llakes.org/wp-content/uploads/2013/12/43.-Green-et-al.pdf. This work also argues that there has been a decline in the intensity of training over time (hours per employee spent on training courses). However, this conclusion is only reached based on data for 1995–98 and 2006–10, as data for other years are not currently available.

[15] https://www.gov.uk/government/publications/ukces-employer-skills-survey-2015-uk-report; ONS series NQAU, https://www.ons.gov.uk/economy/grossdomesticproductgdp/timeseries/nqau/bb; ONS series, ABMI, https://www.ons.gov.uk/economy/grossdomesticproductgdp/timeseries/abmi/ukea.

[16] Page 3 of HM Government, *English Apprenticeships: Our 2020 Vision*, December 2015, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/482754/BIS-15-604-english-apprenticeships-our-2020-vision.pdf.

significant return for the taxpayer too: the amount of return is between £26 and £28 for every £1 of government investment in apprenticeships at level 2 and level 3 respectively.

Are the returns to apprenticeship funding likely to be as high as this and, more generally, is there a well-founded argument for skewing public funding more towards apprenticeships than is the case at present?

A ratio of benefits to costs equal to 26 or 28 to 1 would be extremely high for any area of public policy. In this case, it would imply that increasing government funding of apprenticeships by £1 billion would generate additional economic activity of more than £26 billion, or around 1.4% of current national income. If this were true, then the logical response would be to aim for a huge expansion of apprenticeships. Furthermore, the same research finds that the benefits to public funding of standard Level 2 vocational qualifications (equivalent to five GCSEs at Grade C or above) are around 21 to 1.[17]

Numbers like this look, and indeed are, too good to be true. They are based on a number of highly questionable assumptions[18] – very low 'deadweight' (i.e. the vast majority of those receiving a subsidy would have done no training in the absence of the subsidy), that there are very big spillover effects (i.e. those with whom apprentices work get an uplift in their salary equal to the uplift enjoyed by those who actually get the qualifications) and that the best way of measuring returns is to compare the wages of those who complete qualifications with those who attempt, but drop out of, the same courses.

Put these together and you end up with a wildly overstated case. Again this cavalier use of evidence risks undermining what might in fact be a perfectly good case for policy action.

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[17] *Measuring the Net Present Value of Further Education in England*, BIS Research Paper 229, 2015, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/435166/bis_15_323_Measuring_the_Net_Present_Value_of_Further_Education_in_England.pdf.

[18] For example, the model used to generate the quoted set of figures assumes no deadweight. Alternative estimates assuming deadweight of 30% are published (i.e. 70% of current apprentices would not have taken this qualification and would only have completed the next-lowest qualification), which give estimated benefit-to-cost ratios of 18–20 to 1. However, even this figure of 30% is optimistic. Other research has found that the deadweight associated with training subsidies can be 90–100% (e.g. E. Leuven and H. Oosterbeek, 'Evaluating the effect of tax deductions on training', *Journal of Labor Economics*, 2004, 22, 461–88; L. Abramovsky, E. Battistin, E. Fitzsimons, A. Goodman and H. Simpson, 'Providing employers with incentives to train low-skilled workers: evidence from the UK Employer Training Pilots', *Journal of Labor Economics*, 2011, 29, 153–93).

The model also assumes spillover effects on other workers' wages (through higher productivity) equal to 100% of the increase in wages for those who take apprenticeships (based on findings in L. Dearden, H. Reed and J. Van Reenen, 'The impact of training on productivity and wages: evidence from British panel data', *Oxford Bulletin of Economics and Statistics*, 2006, 68, 397–421). Other work has found similarly large spillovers on overall productivity (J. Konings and C. Vanormelingen, 'The impact of training on productivity and wages: firm-level evidence', *Review of Economics and Statistics*, 2015, 97, 485–97). However, others find that spillover effects are relatively small, e.g. around 5% (A. De Grip and J. Sauermann, 'The effects of training on own and co-worker productivity: evidence from a field experiment', *Economic Journal*, 2012, 122, 376–99).

Lastly, the figures are based on estimated returns to qualifications that use people who started, but failed to achieve, a qualification as a control group (D. Bibby, F. Buscha, A. Cerqua, D. Thomson and P. Urwin, *Estimation of the Labour Market Returns to Qualifications Gained in English Further Education*, BIS Research Paper 195, 2014, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/383646/Estimation_of_the_labour_market_returns_to_qualifications_gained_in_English_Further_Education_-_Final_-_November_2014.pdf). This is a highly questionable comparison to make given that those who fail to complete a qualification are likely to be different from those who succeeded in unobserved ways that are likely to affect earnings in the labour market – e.g. lower motivation or suffering a negative health shock – and lead to an upward bias in the estimated returns.

For none of this means that there is not still a good economic case for skewing public subsidies more towards apprenticeships. Indeed, the government is right to argue that the qualitative finding of higher wage returns for apprenticeships versus other vocational qualifications is well established in the literature to date, even if the absolute levels of returns are contested.[19] Furthermore, there are already large public subsidies for qualifications taken in further education, many of which are found to have low economic returns, and in higher education (either as grants to educational institutions or as subsidies for student loans), which might be skewing educational choices towards these formal education routes away from apprenticeships. Providing greater public subsidies to apprenticeships could be seen as reducing such a distortion, moving us towards a more level playing field.

That said, however, there is no guarantee that the new apprenticeships will generate similar economic returns to those that have been delivered to date. Apprenticeships are being developed in a whole series of new occupations and industries where they have been rarely used before. The likely economic returns to such a shift will depend heavily on the quality of regulation that the government puts in place and what individuals would be doing if they did not do an apprenticeship. Ensuring the system of regulation is effective is much easier said than done, however, and will involve a series of detailed policy questions. Which forms of training will be accredited as apprenticeships? What content will go into individual apprenticeships? How much subsidy will be provided to different forms and levels of apprenticeships? Which training providers will be authorised to provide training courses and how will the quality of the courses they offer be monitored? How will different apprenticeships be evaluated? The institutions and rules put in place to deal with these questions will have a major bearing on the quality of the new apprenticeships. Indeed, the 2011 Wolf Review argued that it was the system of regulation and incentives in the funding system for further education that could explain why so many young people at the time were taking vocational courses with relatively low economic returns.

Summary

The government's stated case for expanding subsidies for apprenticeships is weak. There has been no collapse in training by employers (though there has been a shift from off-the-job towards on-the-job training) and the returns to public investments are not nearly as high as 26 to 1. However, there may still be a good case for expanding public subsidies for apprenticeships. Young people in England are relatively low skilled compared with their peers in other countries; what vocational education does exist in the UK is perceived to be of low quality; research has found higher returns to apprenticeships than to other forms of vocational education; and there are already significant public subsidies for formal further or higher education. There are a number of important issues of policy detail that will determine the success of expanded apprenticeship funding. In the next section, we detail the evolution and plans for policy on apprenticeship funding in England, before then addressing the likely impact of the new regime in Section 8.4.

[19] L. Dearden, L. McGranahan and B. Sianesi, 'An in-depth analysis of the returns to National Vocational Qualifications obtained at Level 2', Centre for the Economics of Education (CEE), Discussion Paper 46, 2004; A. Jenkins, C. Greenwood and A. Vignoles, 'The returns to qualifications in England: updating the evidence base on Level 2 and Level 3 vocational qualifications', Centre for the Economics of Education (CEE), Discussion Paper 89, 2007; Bibby et al., 2014 (see footnote 18); S. McIntosh, and D. Morris, 'Labour market returns to vocational qualifications in the Labour Force Survey', Centre for Vocational Education Research (CVER), Discussion Paper 2, 2016, http://cver.lse.ac.uk/textonly/cver/pubs/cverdp002.pdf.

8.3 Apprenticeships policy: past, present and future

Apprenticeships have been the focus of policymakers' attention for well over a decade now, with an increase in apprenticeships following the Leitch Review in the mid 2000s and an increase in the number of apprenticeships under the coalition government to meet a target of 2 million new apprenticeships. The Conservative party 2015 general election manifesto included a further commitment for 3 million apprenticeship starts in England between 2015 and 2020, which is now a legally binding target.

In this section, we set out what an apprenticeship is and provide some simple background information on apprenticeships. We discuss how government currently subsidises apprenticeships and how that is changing in light of the new apprenticeship levy.

What is an apprenticeship?

The history of apprenticeships in the UK dates back to the 12th century, when craftsmen began to take on minors who were bound to them for five to nine years for training and apprenticeships were often administered by local craft guilds. Government first took steps to regulate training through apprenticeships in 1563 but this legislation was relaxed during the Industrial Revolution. However, the Industrial Revolution also created a host of newer industries where the apprenticeship system was adopted, and growth in apprentice numbers continued until around 35% of boys were leaving school to become apprentices by the 1960s.[20]

In the 1960s, Industrial Training Boards were set up by the government, each with the responsibility for determining training needs within its sector. These boards were given statutory powers to publish course outlines for apprenticeships, determine standards to be reached and impose a training levy on employers to fund training (which bears a striking resemblance to the new system). However, the boards were abolished in 1982 in a return to a more voluntarist reliance on sector-based organisations without such powers. A combination of a decline in skilled manual jobs and the rise in post-16 education meant that the number of apprentices dropped from a high of 243,700 in 1966 to just 53,000 by 1990.[21]

In 1994, the Conservative government launched 'Modern Apprenticeships'. Modern Apprentices would receive a wage as employees and were required to work towards a National Qualifications Framework (NQF) Level 3 qualification (equivalent to two A levels). This forms the basis of the current set-up, albeit with numerous reforms and adjustments having been made over the past 20 years. Foundation Modern Apprenticeships at Level 2 were set up in 2000, and higher-level apprenticeships became available from 2004. The upper age limit of 25 for apprentices was abolished in 2003.

The Skills Funding Agency, responsible for overseeing funding for skills training for further education in England, now defines an apprenticeship to be 'a job with an accompanying

[20] For details on the history of apprenticeships, see M. Harris, *Modern Apprenticeships: An Assessment of the Government's Flagship Training Programme*, Policy Paper, Institute of Directors, 2003.

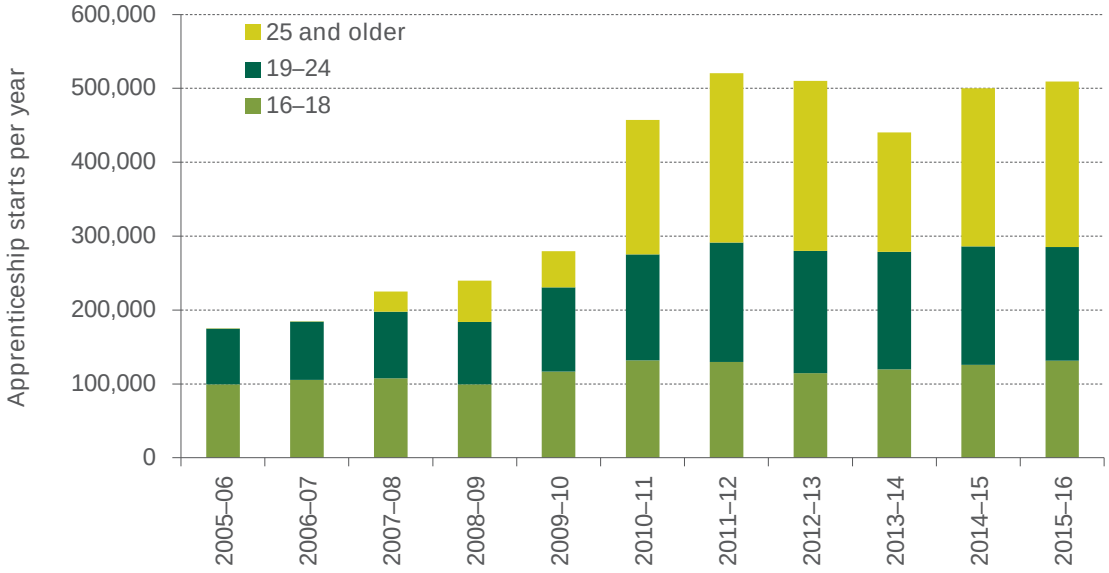
[21] Page 37 of H. Gospel, 'The decline of apprenticeship training in Britain', *Industrial Relations Journal*, 1995, 26, 32–44. These figures are from the Department of Employment and are based on employer reporting – Gospel writes that they 'probably tended to underestimate the number of apprentices because of the failure of smaller employers to report enrolments'.

skills development programme designed by employers in the sector'.[22] In order to be eligible for government funding (and apprenticeships thus defined are the scope of this chapter),[23] an apprenticeship must be a full-time paid job (of at least 30 hours a week), lasting at least 12 months, which incorporates both on- and off-the-job training. A fifth of the apprentice's time must be composed of off-the-job training. In addition, each apprenticeship must fulfil the criteria under a government-approved 'framework' or 'standard', which specifies the qualifications and skills that need to be gained as part of the apprenticeship. In general, government funding is only provided to apprenticeships that are at NQF levels above that which an individual already holds. Therefore, while individuals with undergraduate university degrees can be apprentices, the government will only provide public funding if the apprenticeship is equivalent to a postgraduate qualification (level 7 or above).[24]

Recent trends in apprenticeships

Figure 8.3 shows recent trends in the number of apprenticeships since the mid 2000s, when the numbers began to expand. In particular, it shows the number of apprenticeships that commenced in each financial year from 2005–06 to 2015–16 and splits the number of 'apprenticeship starts' into those undertaken by 16- to 18-year-olds,

Figure 8.3. Number of apprenticeships commenced in each year in England, by age group, 2005–06 to 2015–16



Note: Each year in the data runs from the beginning of August to the end of July in the following calendar year.

Source: Department for Education, 'FE data library: apprenticeships', https://www.gov.uk/government/statistical-data-sets/fe-data-library-apprenticeships.

[22] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/393819/Statement-on-Apprenticeship-QualityV1.pdf.

[23] Employers are able to offer, and many do, their own internal, privately-funded apprenticeships. These are not recorded as apprenticeships in the numbers presented in this chapter on apprenticeship starts in England, and similarly do not count towards the government's target.

[24] See page 11 of https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/510198/Apprenticeship_standards_funding_rules_2016_to_2017_v2_FINAL.pdf.

19- to 24-year-olds and people aged 25 and over. Since 2010–11, between roughly 400,000 and 500,000 apprenticeships have commenced in each year, with 509,000 starting in 2015–16. This level is significantly higher than that between 2005–06 and 2009–10. Of the 509,000 starts in 2015–16, 26% were by 16- to 18-year-olds, 30% by 19- to 24-year-olds and the largest number, 44%, by those aged 25 and over. This is a remarkable change in the age profile of apprentices: 10 years ago, virtually all apprentices were under 25. The growth in the number of apprenticeships for those aged 25 and over has driven almost all of the increase in the number of apprenticeships since 2009–10.

Importantly, it is not clear that the increase in the number of apprenticeships reflects an increase in training. The increase between 2009–10 and 2010–11 for those aged 25 and over is likely to reflect, at least partly, the reduction of funding for the Train to Gain programme – which subsidised employer training of (primarily) those aged 25 and over – and the diverting of that funding towards apprenticeships. This implies that a lot of the increase is in fact 'relabelling' of training as apprenticeships.[25]

In order to meet the commitment to deliver 3 million apprenticeship starts in England between 2015 and 2020, the number of new apprenticeships would need to average 600,000 a year over that period, 20% higher than their level in 2014–15.[26] Larger increases have happened before (e.g. in 2010, when government funds were diverted from the Train to Gain programme). However, numbers have been relatively steady at around 500,000 per year for much of the past five years, implying that a large increase may not be easy to produce. Moreover, the number of 18-year-olds in England in mid 2015 was 661,000. This implies that, unless a significant number of individuals undertake multiple apprenticeships in the course of their career, a long-run target of 600,000 apprenticeships per year is unsustainable, as it would mean about 90% of young people in England taking an apprenticeship at some point. Of course, in the short term, it might be possible to introduce more apprenticeships by training older employees who did not previously undertake one. But as a long-term goal, a 600,000 target is likely to be far too high to be sensible unless it is advisable for large numbers of people to do multiple apprenticeships.

There are four levels of apprenticeships:

- *intermediate apprenticeships* – equivalent to National Qualifications Framework Level 2 (itself equivalent to five A*–C grades at GCSE);
- *advanced apprenticeships* – equivalent to NQF Level 3 or two A–E grades at A level;
- *higher apprenticeships* – equivalent to at least a Level 4 qualification (such as a Higher National Certificate);
- *degree-level apprenticeship* – equivalent to an undergraduate degree.

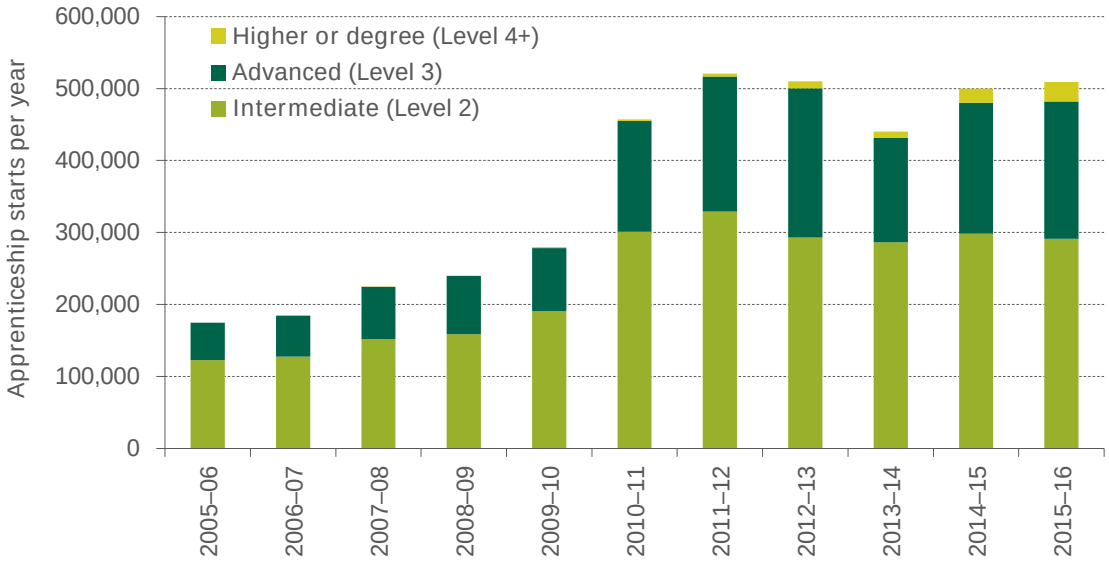
Figure 8.4 shows the number of apprenticeships started in each year by the type of apprenticeship, with higher and degree-level apprenticeships aggregated together. In

[25] For more details, see BIS, 'Funding letter to Skills Funding Agency: 2010–11', https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/31996/10-1013-sfa-funding-letter-2010-11.pdf and R. Lupton, L. Unwin and S. Thomson, 'The coalition's record on further and higher education and skills: policy, spending and outcomes 2010–2015', Social Policy in a Cold Climate, Working Paper 14, http://sticerd.lse.ac.uk/dps/case/spcc/wp14.pdf.

[26] Given that there were 509,000 apprenticeship starts in England in 2015–16, this means that between 2016–17 and 2019–20 there must be 2,491,000 apprenticeship starts in England to meet the target – i.e. an average of 623,000 apprentice starts per year.

2015–16, the majority of apprenticeships were at the intermediate level (291,000, equivalent to 57% of starts), while most of the rest were advanced level (191,000 or 37%). A very small fraction were higher or degree-level (27,000 or 5%). Although the largest proportional growth has been in 'higher' apprenticeships, most of the increase in apprenticeship numbers since 2008–09 has come from intermediate and advanced qualifications.

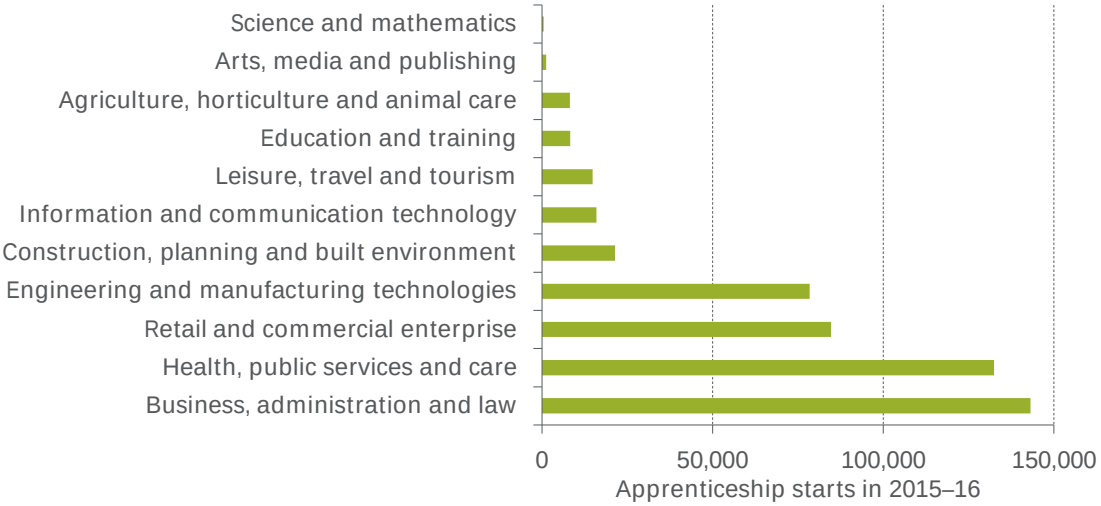
Figure 8.4. Number of apprenticeships commenced in each year in England, by apprenticeship level, 2005–06 to 2015–16



Note: Each year in the data runs from the beginning of August to the end of July in the following calendar year.

Source: Department for Education, 'FE data library: apprenticeships', https://www.gov.uk/government/statistical-data-sets/fe-data-library-apprenticeships.

Figure 8.5. Number of apprenticeships commenced in England, by subject area, 2015–16



Note: 2015–16 in the data runs from the beginning of August 2015 to the end of July 2016.

Source: Department for Education, 'FE data library: apprenticeships', https://www.gov.uk/government/statistical-data-sets/fe-data-library-apprenticeships.

Figure 8.5 shows the number of apprenticeships started in the academic year 2015–16, broken down by the subject area of the apprenticeship. Four categories – business, administration and law; health, public services and care; retail and commercial enterprise; and engineering and manufacturing technologies – account for 86% of all apprenticeship starts. As the overall number of apprenticeship starts has remained fairly constant since 2011–12, so has the balance of apprenticeships between different subject areas.

Existing apprenticeship policy

To date, apprenticeships in England have been subsidised by government depending on the age of the apprentice. The government would only contribute towards the 'training costs' – which means the direct cost of the off-the-job training that is carried out – not the wages of the apprentices or of those who supervise and manage them. The subsidy provided to date is as follows:

- 100% of training costs for 16- to 18-year-olds;
- 50% of training costs for 19- to 23-year-olds;
- 40% of training costs for those aged 24 and over (although this rate can vary).[27]

This system of funding is being phased out and replaced with a new system, set out below, which is to be introduced in May 2017.

There are two other important policies related to apprenticeships that are currently in place and – unlike the set of subsidies outlined above – are set to remain in place from 2017–18 onwards.

First, there is a lower national minimum wage rate for certain apprentices. The minimum wage rate for apprentices was introduced in October 2010, set at £2.50 per hour (compared with the then £5.93 for the main rate). Prior to this, apprentices were exempt from the minimum wage.[28] By April 2017, the minimum wage for apprentices will reach £3.50, compared with the national living wage (for those aged 25 and over) of £7.50 and the national minimum wage (for those aged 21–24) of £7.05. The apprenticeship minimum wage is applied to apprentices aged 16–18, and to apprentices aged 19 and over who are in the first year of their apprenticeship. After their first year, apprentices aged 19 and over are entitled to the minimum wage rate commensurate with non-apprentices of their age.

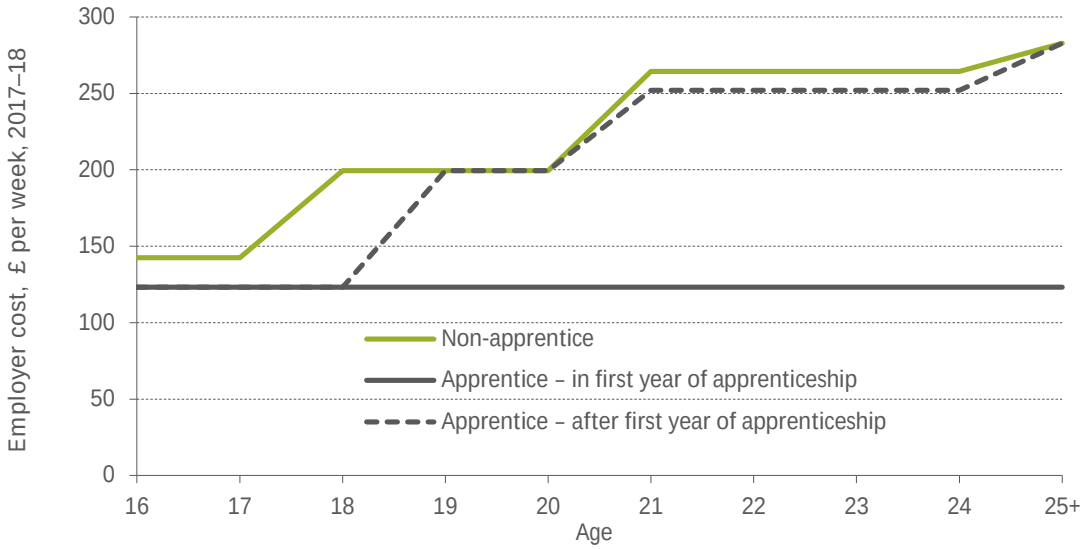
Second, since April 2016, employers do not have to pay employer National Insurance contributions (NICs) on the earnings of apprentices aged under 25, for earnings up to the upper earnings limit (£866 per week in 2017–18). The employer NICs rate is 13.8% of earnings above £157 per week (in 2017–18), implying substantial savings for employers that employ apprentices who earn significantly above that threshold.[29] However, since

[27] For apprenticeships commencing before August 2017, there is also a payment known as the 'apprenticeship grant for employers of 16 to 24 year olds' (AGE 16–24). This is a payment of £1,500 to small businesses that first hire apprentices aged 16–24. The payment is made if the employer has fewer than 50 employees, has not had an employee start an apprenticeship in the last 12 months and has not already claimed five of the grants. For more details on the subsidies of training costs of apprentices prior to May 2017, see J. Mirza-Davies, 'Apprenticeships policy in England', House of Commons Library, Briefing Paper 03052, November 2016, http://researchbriefings.files.parliament.uk/documents/SN03052/SN03052.pdf.

[28] See http://www.employment-studies.co.uk/news/development-apprentice-wages-and-impact-new-apprentice-rate-national-minimum-wage.

[29] Thirty-five hours' work at the national living wage leads to gross earnings of £262.50 per week, although 35 hours' work at the apprenticeship minimum wage is only £122.50 per week.

Figure 8.6. Employer cost of employing example individuals at the applicable national minimum/living wage for 35 hours a week, excluding training costs, in 2017–18



Note: Employer cost includes earnings, employer NICs, minimum employer contribution to workplace pensions (at long-run minimum of 3% of qualifying earnings) and the apprenticeship levy.

April 2015, the government has also waived employer NICs on all employees aged under 21, whether or not they are an apprentice. Therefore the employer NICs exemption for apprentices only reduces employer NICs payments for apprentices aged 21–24.

Combined, these two policies mean that hiring an apprentice (at least in terms of their weekly pay, including taxes and levies paid on it) can be considerably cheaper than employing a non-apprentice. The difference in employer cost for 35 hours' work between apprentices and non-apprentices at their relevant minimum wage is summarised in Figure 8.6. Employing an apprentice in their first year can be considerably cheaper than hiring a non-apprentice. In particular, for workers aged 21 and over, the cost at the applicable minimum wage can be under half that for a non-apprentice. For 16- to 18-year-olds, the difference in minimum employer cost is considerably smaller, but it remains after the first year of the apprenticeship. Of course, the full cost of employing an apprentice will also include any training cost (that is not paid for by the government), and in addition they will be able to spend fewer hours working directly for their employer each week as they undertake off-the-job training.

The apprenticeship levy and the new funding system

The apprenticeship levy is being introduced in April 2017. It requires all employers with a paybill in excess of £3 million per year to pay a levy equal to 0.5% of the amount by which their paybill is in excess of this amount.[30] The £3 million threshold means that only 2% of employers will pay the levy, but, as we show in Section 8.4, these employers employ a

[30] The actual mechanics of this are that any employer with a paybill of over £3 million per year will pay a levy of 0.5% of the total value of their paybill, but will receive an allowance of £15,000 a year to offset against their levy payment.

significant portion of the UK workforce.[31] The apprenticeship levy is a payroll tax similar to employer NICs, although the amount that is levied is a function of the total payroll of employees within an organisation, rather than a function of each individual's earnings. The OBR forecasts that the apprenticeship levy will raise £2.6 billion in 2017–18, rising to £2.8 billion in 2019–20.[32]

All employers in England who pay the levy, including public sector employers, will have their levy payments put into a 'digital account', which they can then use to spend on the costs of off-the-job training of apprentices. This amount will be topped up a further 10% by the government. These funds will expire after 24 months if unspent, but barring this detail the 'digital account' essentially amounts to levy-paying employers being offered full government subsidy for apprenticeship training costs up to the value of 110% of each employer's levy amount.[33] Levy-paying employers who want to spend more on apprenticeship training than the amount in their digital account will have to pay 10% of costs above that amount themselves and the government will fund the remaining 90%. For all apprenticeships, there are maximum amounts above which the government will not make any contribution, as set out below.

Employers who do not pay the levy – i.e. those with a paybill of less than £3 million per year – will receive a 90% subsidy towards the training costs of apprentices. An exception is for employers with fewer than 50 employees employing apprentices aged 16–18: for them, the government will fund 100% of training costs (up to the limit specified below).

Government funding is restricted to a limit per apprentice. Each apprenticeship framework or standard will be assigned to one of 15 funding bands decided upon by the Skills Funding Agency, each with an upper limit of between £1,500 and £27,000 to cover the full duration of the apprenticeship. Allocation to a particular band is supposed to reflect the expected costs of training for each apprenticeship. For example, the band limit for an aerospace engineer (a Level 6 course, equivalent to an undergraduate degree) is £27,000, whilst that for an adult care worker (a Level 2 course, equivalent to five GCSEs graded A*–C) is £3,000.[34] The government will not pay any subsidy on training costs in excess of the relevant band limit.[35] In addition to the subsidy of the off-the-job training costs as specified above, the government will give both employer and training provider a £1,000 grant for employing an apprentice aged 16–18.[36] The government will only fund the training costs for apprentices who are training at a higher qualification level than they currently possess. This means that, while graduates holding an undergraduate degree can be apprentices who receive public funding, they must be undertaking a Level 6 (equivalent to a masters degree) apprenticeship or higher.

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[31] It is not clear to what (if anything) this allowance is indexed. If it is fixed in nominal terms, or indexed to prices rather than earnings, all else equal, we would expect gradually greater numbers of employers paying the levy over time.

[32] Table 4.6 of Office for Budget Responsibility, *Economic and Fiscal Outlook: November 2016*, http://budgetresponsibility.org.uk/efo/economic-and-fiscal-outlook-november-2016/.

[33] Department for Education, *Apprenticeship Funding in England from May 2017*, October 2016, https://www.gov.uk/government/publications/apprenticeship-funding-from-may-2017.

[34] https://www.gov.uk/government/publications/apprenticeship-funding-bands.

[35] If an apprentice needs training in Level 2 English and/or maths, the government will pay £471 per qualification, in addition to the other training costs associated with the apprenticeship. These payments will not reduce the amount in an employer's digital account.

[36] It will also pay the grant for apprentices aged 19–24 if they have previously been in care.

This system renders the degree of hypothecation between apprenticeship levy payments and public subsidy towards apprenticeships relatively weak. Employers who do not pay the levy at all will still be eligible for a subsidy of 90% of the upper funding limit, while employers who do pay the levy will be subsidised either 100% or 90%, with the levy amount only providing the threshold for the slight drop in subsidy rate. As a result, the upper limits set by the Skills Funding Agency are of far greater importance for determining likely public subsidies for apprenticeships than the amounts raised by the levy.

Although the apprenticeship levy applies across the UK, the new system of apprenticeship funding is being introduced only in England. The amounts that the three devolved administrations will each receive from the apprenticeship levy have been set for the next three years by applying population shares to the OBR's March 2016 forecast of the amount raised by the apprenticeship levy (and these amounts are fixed irrespective of any difference between the levy forecast and actual levy revenues).[37] However, since skills policy is devolved, this funding is not ring-fenced for apprenticeships and the devolved administrations will simply receive this funding as part of their block grant.

None of the devolved administrations has plans to introduce a voucher system like the digital account system that will be instituted in England. The Scottish Government is the only one of the three that has proposed any changes to apprenticeship policy to accompany the introduction of the levy, and these changes are small. The most significant is that public sector employers in Scotland will become eligible for apprenticeship funding in the same way as private sector employers.[38]

Regulatory framework

Given the near-zero marginal cost to employers of providing off-the-job training for apprentices under the new funding system, regulation of the quality of this training is particularly important. The government has therefore set out a whole new regulatory system to be overseen by the Skills Funding Agency and the newly-created Institute for Apprenticeships. The pathway of a new apprenticeship through the new regulatory framework, from development to end assessment, is as follows:

1. Any group of 10 or more employers can work to develop an apprenticeship 'standard' – the set of skills an apprentice is expected to possess by the end. They must also develop an accompanying plan for an end-point assessment of these skills.
2. The Institute for Apprenticeships (IfA) will have responsibility for either approving or rejecting this new standard and the accompanying end-point assessment plan.[39]

[37] Announced by HM Treasury on 14 November 2016 (https://www.gov.uk/government/news/uk-government-agrees-apprenticeship-levy-funding-deal-with-devolved-administrations).

[38] Announced by the Scottish Government on 15 December 2016 (https://consult.scotland.gov.uk/employability-and-training/apprenticeship-levy/results/scottish-government-response-to-the-uk-government-apprenticeship-levy----.pdf).

[39] Each new standard will be peer reviewed by a small number of experts. The IfA will itself have responsibility for setting the criteria by which it takes this decision. Further details on these criteria and on the Institute for Apprenticeships can be found at https://consult.education.gov.uk/apprenticeships/government-s-draft-strategic-guidance-to-the-insti/supporting_documents/Governments%20Draft%20Strategic%20Guidance%20to%20the%20Institute%20for%20Apprenticeships%20%20201718.pdf.

It will also be responsible for ensuring all end-point assessments are quality assured.

3. Once the standard and the assessment plan have been approved, the Skills Funding Agency (SFA) will confirm the funding band for the standard.[40]
4. Employers will then be able to start taking on apprentices on this standard.
5. In order to be eligible for the subsidy, they will need to choose a provider from the Register of Apprenticeship Training Providers (RoATP), which will be maintained by the SFA using the following criteria:
   - As before, training providers will have to submit to future inspections by the Office for Standards in Education, Children's Services and Skills (Ofsted). Any receiving a Grade 4 (inadequate) will be removed from the Register (which must be re-applied to annually). They will also have to provide additional evidence of financial fitness, capability and quality.
   - Employers can apply to join the Register as training providers and thus use government subsidy to pay themselves for providing training.
6. Employers will negotiate the price of training directly with training providers.[41]
7. Employers will choose an end-point assessor from the Register of Apprenticeship Assessment Organisations, the responsibility of the SFA. Employers cannot assess their own apprenticeships.

This new system creates a number of checks designed to ensure the quality of apprenticeships in the new system. The IfA is effectively responsible for the curriculum and assessment of apprenticeships, the SFA decides on the funding band and the registers of providers/assessors, and Ofsted will continue its role in assessing the quality of providers to help the SFA. However, it is far from clear whether this will be enough to ensure quality in the context of the intended rapid expansion of apprenticeships.

Although the IfA will use peer review by a small panel of experts to assess proposals for new standards, it is easy to see how it will be under considerable pressure to expand quickly the number of standards available, especially given that the government plans for all apprenticeship starts to be on standards by the end of the current parliament, 'with as much of this [migration] to take place by 2017/18 as possible'.[42]

The government has said that register reforms introduce 'higher quality requirements for providers'.[43] However, although all training providers will continue to be subject to Ofsted

[40] The SFA has published its methodology for allocating standards to funding bands, and the IfA will advise on any future changes to this. The methodology can be found in annex 1 of Department for Education, *Apprenticeship Funding in England from May 2017*, October 2016, https://www.gov.uk/government/publications/apprenticeship-funding-from-may-2017.

[41] Where they are themselves registered as training providers, they will have to submit evidence of the actual cost of the training they are providing, and that will be the amount subsidised (to the extent it is below the relevant band maximum).

[42] Paragraph 5.9 of HM Government, *English Apprenticeships: Our 2020 Vision*, December 2015, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/482754/BIS-15-604-english-apprenticeships-our-2020-vision.pdf.

[43] Skills Funding Agency, 'Supporting quality and employer choice through a new Register of Apprenticeship Training Providers', https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/562465/Provider_register_policy_doc.pdf.

inspections, it is difficult to see how this regulation is significantly more stringent than before. Nevertheless, removing training providers who receive a Grade 4 (inadequate) from the Register is important, particularly in light of the possibility for employers to become training providers. The numbers of training providers involved may present a barrier to how frequent and effective Ofsted inspections will be – there are currently 3,878 approved training organisations on the Register of Training Organisations.[44] Not necessarily all of these will apply to the RoATP, but this is indicative of the scale of the task.

Apprenticeship targets for public sector bodies

In addition to the new system, the government has set an apprenticeship target for every public sector body with at least 250 employees in England (in the Enterprise Act 2016). This target requires that the number of apprenticeship starts each year in these organisations be equal to 2.3% of their total headcount in England. The target has been calculated by planning for the public sector to deliver a share of the 3 million apprenticeship starts proportionate to the current share of public workers in the total workforce in England (16.2%) and is equivalent to 97,000 public sector starts annually.[45] Employers that do not meet the target must set out why it has not been met and how the employer proposes to meet it in the future, although no provision has been made for action to be taken if an employer continually fails to meet its target. Nevertheless, the public sector is essentially obligated to employ a large number of apprentices.

This will cover a very large proportion of the public sector in England. The government has published a list of 1,010 public sector employers in England that it considers, as of December 2015, are in scope for this target.[46] The list includes essentially all NHS trusts, central government departments, police forces, fire and rescue services, armed forces and almost all local government employers (district and county councils and unitary authorities) in England. It also includes a large number of non-departmental public bodies (including institutions as varied as the Environment Agency and the British Museum), and academy trusts which run schools.

This one-size-fits-all approach to all large public sector employers in England is clearly not a sensible way to encourage more apprenticeships or to help deliver efficient public services. We discuss the implications of these targets in more detail in the next section.

Summary

The new apprenticeship levy and more generous set of subsidies for apprenticeships in England are aimed at increasing the number of apprenticeships and meeting a Conservative commitment at the last general election to deliver 3 million new apprenticeship starts between 2015 and 2020. In addition, the government has laid out a new regulatory framework to ensure the quality of new apprenticeships and set targets for public sector employers to help achieve the 3 million commitment.

[44] https://www.gov.uk/government/publications/register-of-training-organisations.

[45] BIS and Department for Education, *Apprenticeship Targets for Public Sector Bodies: Consultation*, January 2016, https://www.gov.uk/government/consultations/public-sector-apprenticeship-targets.

[46] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/494498/public-sector-apprenticeship-targets-list-of-bodies.xlsx.

8.4 Likely effects of the new system of apprenticeship funding

Having set out the key changes to the apprenticeship system in the previous section, we now analyse the potential effects and the merits of the changes in England. We first analyse the potential impact of the apprenticeship levy itself. Second, we analyse the incentives produced by, and the potential effects of, the expanded subsidies for apprenticeship training. Finally, we discuss the appropriateness of the targets for hiring apprentices for public sector employers.

Effects of introducing an apprenticeship levy

The apprenticeship levy, set at 0.5% of an employer's annual paybill above £3 million, is a tax paid by employers on the earnings they pay their employees and is forecast by the OBR to raise £2.6 billion in 2017–18. However, standard economic theory suggests that whoever is legally obliged to pay the tax (on whom the 'statutory' burden falls) does not necessarily face the economic burden of the tax.[47] Therefore, the effects of this tax may not simply be to reduce firms' profits. At least in the long run, we would expect the burden of the tax – at least partially – to fall on employees, because the imposition of the tax lowers employers' demand for workers and therefore wages fall. Indeed, upon the announcement of the introduction of the apprenticeship levy, the OBR assumed that the 'majority of the incidence ... [would] fall on wages ... [implying] a cumulative reduction in average earnings of around 0.3 per cent by 2020–21'.[48] In addition, the apprenticeship levy increases the difference in the cost to the employer of providing remuneration in the form of wages or salaries, compared with employer pension contributions (which are exempt from employer NICs and the apprenticeship levy). This could lead to employers decreasing employees' wages and increasing employer pension contributions in exchange, as it is increasingly tax efficient to do so.

By increasing the cost of employing a worker, at the margin, the apprenticeship levy also disincentivises employing an additional worker, which could lead to reduced employment (hence the term 'jobs tax' used by the Conservative party to describe an economically similar proposed increase in employer NICs in the run-up to the 2010 general election).[49] To the extent that the immediate burden falls on firms by reducing their profits, the apprenticeship levy may also lead to reduced investment in either physical capital or the human capital of their workers (particularly if the funding for these investments is from retained profits in the organisation), which would again be likely to lead to lower wages – and possibly employment – in the long run.

What about the magnitude of these effects? In the 2015 Autumn Statement, the government stated that, based on HMRC analysis, 'less than 2% of employers will pay [the apprenticeship levy]'.[50] This makes the levy sound relatively insignificant, but of course these 2% of employers are by definition the largest employers: the 2% includes Tesco and

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47 See, for example, chapter 19 of J. Gruber, *Public Finance and Public Policy*, 5th edition, Macmillan, London, 2016.

48 Page 47 of Office for Budget Responsibility, *Economic and Fiscal Outlook: November 2015*, http://budgetresponsibility.org.uk/efo/economic-and-fiscal-outlook-november-2015/.

49 Because it is only levied on employees' payroll and not on payments to self-employed individuals, this also slightly increases the incentive for firms to contract work out to small employers and self-employed individuals, rather than employ workers directly. For more discussion of these incentives, see Chapter 7.

50 Page 45 of HM Treasury, *Spending Review and Autumn Statement 2015*, https://www.gov.uk/government/publications/spending-review-and-autumn-statement-2015-documents.

Table 8.1. Percentage of employees working for employers of different sizes, 2015

	<50 employees	50–249 employees	250+ employees	% of employees with given characteristic
Sector				
Private	29.3	16.6	54.1	76.8
Public	1.1	6.7	92.2	23.2
Age				
16–24	28.9	13.7	57.4	10.5
25–39	21.8	14.9	63.3	36.7
40–54	20.8	13.9	65.3	36.3
55+	25.2	14.3	60.6	16.5
Sex				
Female	21.4	13.0	65.7	49.9
Male	24.1	15.6	60.3	50.2
Wage level				
Lowest wage quartile	31.4	14.5	54.1	25.0
2nd wage quartile	25.6	14.6	59.8	25.0
3rd wage quartile	20.3	13.8	65.9	25.0
Top wage quartile	13.5	14.4	72.1	25.0
All	22.7	14.3	63.0	100.0

Source: Authors' calculations using the Annual Survey of Hours and Earnings 2015. Wage quartiles are calculated using hourly wages including overtime.

the 98% includes small plumbing businesses with a few employees. To get a sense of the scale of the economic effects, we need to account for this.

Unfortunately, it is difficult for analysts outside of government to exactly calculate what fraction of employees work for employers who will pay the apprenticeship levy. Instead, the analysis in Table 8.1 uses the Annual Survey of Hours and Earnings to describe the characteristics of people who are likely to work for employers who are affected by the apprenticeship levy. Although we cannot perfectly observe those individuals who work for affected employers, we have split the data into three groups based on employer size to generate a realistic proxy for whether their employers are affected: fewer than 50 employees (unlikely to pay the levy), 50–249 employees (might pay the levy) and at least 250 employees (very likely to pay the levy).[51]

[51] Almost all employees working for employers with 250 or more employees will be affected by the apprenticeship levy, as, in order for the employer to not pay the levy, the employees would have a mean salary of less than £12,000 per year. In contrast, employers with fewer than 50 employees are almost certainly

Table 8.1 shows that, overall, 63% of employees work for large employers with 250 or more employees who are very likely to be subject to the apprenticeship levy, while only 23% of employees work for small employers who are unlikely to be affected. There is great heterogeneity by different types of workers. Over 90% of public sector workers work for large employers, compared with 54% of private sector employees. A slightly higher proportion of female employees work for large organisations than do men, although this likely reflects the fact that women are more likely to work in the public sector. Moreover, although 72% of employees in the highest quartile (25%) of hourly wages work for large organisations, even for the lowest quarter of wage-earners the proportion is 54%. If the OBR is correct that the apprenticeship levy will reduce earnings growth, this shows that it is likely to affect a large number of relatively low-paid workers, as well as higher-paid workers. Unsurprisingly, it also affects workers of all ages, although slightly more likely to affect middle-aged workers than younger or older workers.

Table 8A.1 in the appendix shows how the apprenticeship levy will affect different industries because of differences in the size of employers in each industry. Apart from the chiefly public sector industries (education, health, and public administration & defence) the most affected industries are electricity, gas & waste (81% of employees work for large employers) and finance & insurance (79%). In comparison, only 30% of employees in construction and 27% in agriculture & mining work for large employers. The two largest private sector industries (retail & wholesale and manufacturing) have 63% and 50% of employees working for large organisations respectively.

This analysis shows that the majority of employees work for employers who will have to pay the apprenticeship levy. It will particularly affect the public sector, because most people working for the public sector work for large organisations. But it will also affect the employers of more than half of employees with relatively low wages and the employers of almost 60% of 16- to 24-year-olds.

The fact that the apprenticeship levy affects large employers and does not affect small employers means its introduction provides an incentive for organisations to split such that they do not have to pay the apprenticeship levy (or pay less in total). The 'employment allowance' introduced in 2014, which reduces employers' employer NICs bill by £3,000 per employer, also incentivises firms to split.[52] Note also that, because the main rate of corporation tax has been reduced, from 28% in 2010–11 to 20% since 2015–16, the tax regime is being made more favourable, in relative terms, to firms with large profits but low paybills (and vice versa).

Effect of the new system for funding apprenticeship training

As was set out in Section 8.3, the system for subsidising the training costs of apprentices in England is changing in 2017–18. As a result, the Department for Education's budget on

unaffected by the levy, as, to be affected, the employees would need a mean salary of over £60,000 per year, which is also unlikely in many firms. The middle group (those working for employers with 50–249 employees) are potentially affected, but it is less certain.

[52] In November 2016, the *Guardian* newspaper published its findings that temporary recruitment agencies were transferring workers' contracts from one to many different small companies to take advantage of this. The government announced measures in the 2016 Autumn Statement (page 41) to try to restrict this form of tax avoidance. See https://www.theguardian.com/uk-news/2016/nov/15/revealed-temp-agencies-avoidance-scheme-costs-taxpayers-hundreds-of-millions.

English apprenticeships is increasing by only £640 million in cash terms between 2016–17 and 2019–20. However, this increase is equivalent to just 23% of the revenue that it is expecting to raise from the apprenticeship levy in 2019–20.[53]

In this subsection, we analyse the incentives provided by the new system of subsidies that is being introduced. Given that employers have no choice over the amount of levy they pay (conditional on paybill), the incentives provided by the system can be analysed independently of how it is funded. We examine the potential effects of the new system on incentives for employers to provide training, on the prices of apprenticeship training and on skills and productivity.

Effect on incentives for employers to provide training

A key effect of increasing subsidies for the training of apprentices is that they reduce the marginal cost of providing off-the-job training as part of an apprenticeship, and thus make employing apprentices a more attractive proposition for employers. This effect will be particularly pronounced for employers and industries that already have established apprenticeship schemes, as they will not have to pay fixed start-up costs of organising apprenticeship training.

However, the changes in incentives to train more apprentices are not uniform. Under the current funding system, broadly speaking, 100% of training costs are subsidised for apprentices aged 16–18 and this will, for the most part, remain unchanged.[54] Thus we might not expect to see a significant increase in apprenticeship starts among this age group. However, the subsidies for those aged 19 and over will change quite drastically, rising from paying 40–50% of training costs to 90% or 100%. Thus the incentives for employers to hire apprentices aged 19 and over will increase quite substantially and we would expect to see more apprenticeship starts among this age group. It should be noted that this increased subsidy applies not only to those under 25 but also to those who are significantly older.

To the extent that employers do not increase the number of apprentices they employ, the increased subsidy represents simply a transfer to employers employing apprentices.[55] This is known as ‘deadweight’ and is something to be concerned about, since previous subsidies for employer-provided training in the UK – for example, Employer Training Pilots (forerunner to Train to Gain) – have been shown to be ineffective at increasing take-up of training.[56]

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[53] Department for Education, ‘Information on apprenticeship levy: data broken down by size and sector and the total apprenticeship budget’, August 2016, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/545145/Apprenticeships_-expected_levy_and_total_spend_-_Aug_2016.pdf; table 4.6 of Office for Budget Responsibility, *Economic and Fiscal Outlook: November 2016*, http://budgetresponsibility.org.uk/efo/economic-and-fiscal-outlook-november-2016/.

[54] The two exceptions to this are that for employers with more than 50 employees who do not pay the apprenticeship levy (i.e. with a paybill below £3 million) and for employers who pay the apprenticeship levy but have already used all the funds in their digital account, the training subsidy will be 90%.

[55] Assessing the combined effect of the increased subsidy rates and the introduction of the apprenticeship levy, employers with a relatively low paybill, but who hire large numbers of apprentices, are likely to see a net transfer from the government, while employers with a large paybill and few apprentices will make a net transfer to the exchequer.

[56] L. Abramovsky, E. Battistin, E. Fitzsimons, A. Goodman and H. Simpson, ‘Providing employers with incentives to train low-skilled workers: evidence from the UK Employer Training Pilots’, *Journal of Labor Economics*, 2011, 29, 153–93.

However, it is likely that some of the increase in apprenticeship starts will not represent an increase in the training workers are receiving but instead a substitution of apprenticeship training for other types of training. There are three main ways that this might happen.

First, we may see some relabelling by employers of training schemes that already exist. Employers may decide to relabel existing training schemes that include off-the-job training as apprenticeships in order to benefit from the increased subsidies. There are some regulatory restrictions in place to limit this, but in practice if an employer is already providing off-the-job training similar to that specified by the requirements of an apprenticeship, then the costs associated with this relabelling are unlikely to be onerous. Relabelling is further facilitated by the provision for employers to become approved apprenticeship training providers. Previous research[57] suggests that there could be a significant amount of relabelling, which will result in government funds being used to subsidise some training that would have been provided anyway.

Second, the increased generosity of government subsidisation of off-the-job apprenticeship training will also prompt some employers to change how they train their workers – in particular, moving from unsubsidised on-the-job training to heavily-subsidised off-the-job training offered by apprenticeships. This could be damaging if there may be some practical skills that are best learned on the job but, because off-the-job training is so heavily subsidised, employers may choose to switch away from this on-the-job training.

Third, we may see some individuals switching from academic education to pursuing an apprenticeship. Greater government subsidies for training will allow employers to offer higher apprenticeship wages, and this may attract some individuals who would previously have opted for an academic route. Whether or not this should be seen as a positive change depends on whether the current balance between the number of apprenticeships being started and the numbers going into academic education is seen as the right one.

Effect on the price of apprenticeship training

The new apprenticeship funding system will also have an effect on how apprenticeship training is priced. Due to the near complete subsidisation of training costs below the maximum of each band, there will be little scope for providers to compete on price – the price of training has little effect on the cost to the employer. Thus there will be little incentive for providers to price below a given band's maximum. On the other hand, employers will have to pay the full amount of costs above the band's maximum, so if providers can profitably operate at the band maximum it is likely that price competition will prevent them from charging much above that threshold. Thus we would expect to see a strong tendency for providers to price training courses at or close to the level of the relevant band maximum. This could be reinforced by the fear of training providers that pricing below the maximum would signal that a course is of lower quality. One related side effect of this likely bunching of providers at the band maxima is that it will make it difficult for employers to use price signals as a guide to quality.

There is one further dimension to pricing issues resulting from the new funding system. As employers will themselves be able to become approved training providers and thus

[57] E. Leuven and H. Oosterbeek, 'Evaluating the effect of tax deductions on training', *Journal of Labor Economics*, 2004, 22, 461–88.

receive the government training subsidy, they will have little incentive to reduce the quoted 'price' for the training they provide. Whilst the regulation requires employer-providers to report to the Skills Funding Agency the full cost of training and assessment, including evidence on how costs are calculated, there is no (or very little) incentive for employer-providers to keep these costs below the relevant band maximum.

Effect on skills and productivity of the workforce

Ultimately, the increased subsidies should lead to higher numbers of apprenticeships, and probably higher levels of workforce training. If the training is of high quality, this should lead to increases in workers' skills and productivity. More productive workers should be able to command higher wages, leading to higher earnings and incomes for these workers. To the extent that employers may be able to capture some of the gains in their workers' productivity, it could potentially lead to higher profits for firms, at least in the short run.

There are two key questions to understanding the effectiveness of the increased subsidies: 'What would individuals have done instead?' and 'What is the quality of the new training?'. Considering alternative options, if apprentices would have otherwise undertaken another similar training programme that the employer organised, the benefit of instead doing an apprenticeship may be very small or non-existent. If instead they would have done existing vocational qualifications in further education or sixth form colleges (e.g. Level 2 BTEC or NVQ qualifications – equivalent to GCSEs) – which have been found to have very low returns[58] – or undertaken no other training or education at all, then the gains from taking an apprenticeship may be high.

The second fundamental question is how and whether the government will ensure that the new apprenticeships and associated training courses are of sufficiently high quality that they are a useful investment. As argued in Section 8.3, the new regulatory regime has a lot of sensible features. However, expanding the number of apprenticeships at a rapid pace and into industries where they have rarely been used in the past is likely to pose significant challenges. The 3 million target is likely to create significant pressure on the new Institute for Apprenticeships to approve as many new standards as quickly as possible and the inspection of training providers is likely to represent a significant expansion in Ofsted's responsibilities with regards to training providers.

Targets for apprentices employed by public sector employers

While the government will be incentivising private sector employers to employ apprentices by heavily subsidising their training costs, in the public sector there will be centrally-set targets for every public sector employer with at least 250 employees in England. There are a number of reasons to question the wisdom of these targets.

First, it is unclear that apprenticeships are the right option for increasing skills in the public sector. Apprenticeships are, in general, undertaken by individuals who have not already completed post-secondary education. In 2015–16, according to the Labour Force Survey, only 11% of apprentices had previously completed a degree or other higher education qualification. However, the public sector workforce is dominated by highly-educated employees: 63% of public sector workers had completed post-secondary education in 2015–16, compared with 38% in the private sector. The government set the

[58] See references in footnote 19.

public sector apprentice targets on the basis that 16.2% of workers are in the public sector – but only 10.4% of workers without post-secondary education are in that sector. If the government wanted to focus apprenticeship provision entirely on the group who have not completed higher education, then the target for the public sector apprentices would be lowered to 62,000 apprenticeship starts per year rather than 97,000.

As it stands, the current target implies a huge increase in the number of apprentices in the public sector. According to the LFS, only 0.6% of public sector workers report being an apprentice, implying that the public sector is being asked to approximately quadruple the number of apprentices it is employing. The scale of the target is also large when compared with the number of new hires by public sector employers each year. Only 11.7% of the public sector workforce has worked for the employer for less than a year. The target of apprenticeship starts equalling 2.3% of the workforce each year would, if these were to come entirely from new employees, imply that one-in-five new hires in the public sector must be an apprentice. If only newly-hired non-graduates were to start apprenticeships, then 62% of new non-graduate public sector employees would need to start one in order to meet the 2.3% target. In the short term, one alternative for public sector employers trying to meet this target would be for them to place existing employees on apprenticeship programmes. This would mean that fewer new hires would need to be apprentices to make the target. However, it is even less clear that apprenticeships are appropriate for experienced workers in the public sector.

In addition, so far we have discussed the public sector as though it were a single entity. In fact, public sector employers are varied in their size, the turnover of their staff and their ability to employ apprentices in a way that is useful to employer and individual. The great variation across public sector employers means that while some may not find it hard to employ enough apprentices to comply with the target, others will find it very hard indeed. Parts of the public sector that might particularly struggle are the ones that currently hire many staff who have already trained professionally (such as schools), whereas large organisations with lower-skilled intakes may find it easier (such as parts of public administration).

Given the scale of the target, meeting it will probably necessitate a large restructuring of employment for some public sector organisations. There is already emerging evidence of this occurring. The College of Policing has announced that, beyond 2020, entry to the police force will now be either through a ‘police constable apprenticeship’, a policing degree or a policing programme for graduates.[59] The Armed Forces have had an apprenticeship standard approved for the training of service personnel.[60] If public sector employers do indeed have to substantially reorganise the employment routes or training of their employees in response to the obligation, there are a number of significant negative implications of doing so. There will be significant administrative costs of restructuring training. In addition, many more individuals will have to undertake off-the-job training, which may or may not be less productive in developing their skills than the time they could have used learning on the job.

[59] http://www.college.police.uk/News/College-news/Pages/PEQF_media_launch_blog.aspx.

[60] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/487589/HM_ARMED_FORCES_-_HM_Forces_Serviceperson__Public_Services_.pdf.

The target is not being implemented in order to improve the efficiency of the public sector or the quality of public services or even because it has been determined that this is the best way for public sector workers to develop their professional skills. Instead, the government is imposing a burdensome obligation on public sector employers with little or no justification for how this will benefit public services or the public sector workforce. Therefore, this policy risks creating a lot of pointless, and costly, relabelling of existing activities or – even worse – shifting structures towards less efficient ways of working.

8.5 Conclusion

Training matters. In some important respects, the UK workforce has lower levels of skills than is the case in a number of comparable countries. Encouraging widespread, high-quality apprenticeships is likely to form an important element of any training policy. The question this chapter has sought to answer is whether the new apprenticeship levy, the new system of subsidies for apprentices' training and the government's targets are the best way of achieving the desired outcome.

The levy itself will raise far more money than the additional resource planned to go into apprenticeship training. Most of the expected £2.8 billion revenue (in 2019–20) is not being used to increase spending on apprenticeships. As a payroll tax, it is likely to feed through into lower earnings.

The structure of the system creates some concerns. In particular, the fact that apprenticeship training will be free, or close to free, for employers creates risks for public money. There will be little or no incentive to keep costs below the maxima of centrally-imposed caps. There will be clear incentives to relabel training that is already happening as apprenticeship training. The government has created a substantial new regulatory regime to try to manage these risks, but the incentives are a fundamental part of the system.

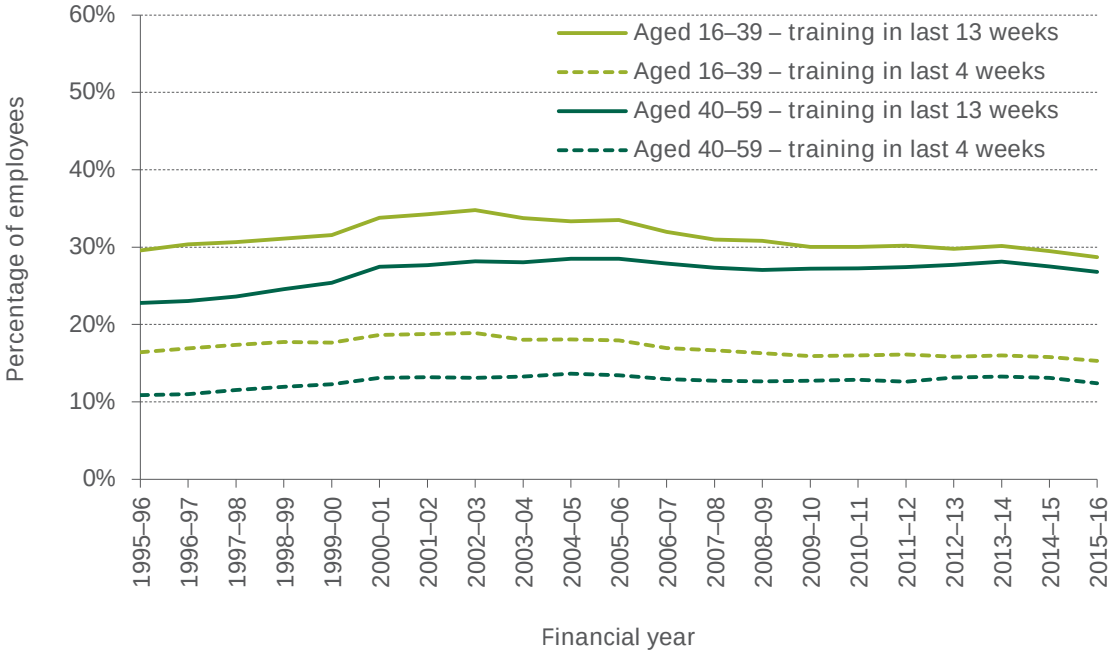
Additional concerns are created by a focus on achieving an arbitrary, and supposedly legally binding, target of achieving 3 million new apprenticeship starts from 2015 to 2020. Combining these targets with the system's incentives exacerbates the risks described above. The additional blanket target for all public sector employers with at least 250 staff in England to have 2.3% of their employees as apprentices makes little sense. It risks all sorts of inefficient behaviour.

Finally, it is frustrating that the strong arguments for increasing the number and quality of apprenticeships risk being undermined by the government's cavalier use of evidence in support of the policy. It is not the case that provision of training at work has collapsed in recent years, as implied by some government documents. It is also not the case that each £1 of government spending in this area will produce £26 of economic return as is claimed off the back of some flawed analysis. The case for intervention is strong enough without overstating it in this way.

We need to move away from arbitrary targets and across-the-board 100% funding to a more gradual expansion, a stronger focus on quality, and a policy designed to maximise impact rather than numbers.

Appendix

Figure 8A.1. Percentage of employees undertaking job-related training or education, by age, 1995–96 to 2015–16



Source: Authors' calculations using Quarterly LFS, 1995 to 2015.

Table 8A.1. Percentage of employees working for employers of different sizes, by industry, 2015

Industry	Percentage of employees working with employer of each size			% of employees in each industry
	<50 employees	50–249 employees	250+ employees	
Agriculture & mining	55.0	18.1	27.0	0.7
Manufacturing	24.4	25.5	50.2	9.7
Electricity, gas & waste	10.4	8.6	81.1	1.2
Construction	52.6	17.2	30.2	3.6
Retail & wholesale	25.3	11.3	63.4	15.4
Transport & storage	15.8	11.0	73.3	4.3
Accommodation & food services	38.1	14.5	47.4	5.3
Information & communications	28.7	15.3	56.0	3.8
Finance & insurance	11.6	9.3	79.1	3.5
Real estate	33.8	17.1	49.1	1.4
Professional, scientific & technical	40.6	21.2	38.3	6.4
Administrative & support	22.2	15.5	62.4	7.0
Public administration & defence	1.6	1.6	96.9	4.5
Education	5.0	14.9	80.1	14.4
Health	17.7	11.0	71.3	15.0
Other	47.2	14.7	38.1	4.0

Source: Authors' calculations using the Annual Survey of Hours and Earnings 2015.

9. ICAEW: debt

Ross Campbell (ICAEW) and Martin Wheatcroft (on behalf of ICAEW)

Key findings

The government continues to rely on external finance to provide the funds it needs to pay for spending, for investment, and to repay existing debts as they fall due.	The government needs to raise £646 billion from external investors over the next five years. This is £11 billion more than the amount it raised over the last five years, with greater refinancing, higher government lending and lower asset sales more than offsetting a £293 billion reduction in fiscal deficits.
The government should update its treasury management objectives and strategy to ensure they are fit for purpose.	The government's most recently published treasury strategy is embodied in a 1995 treasury management review that predates Bank of England independence, the global financial crisis, quantitative easing and the UK's decision to leave the EU.
By purchasing gilts, the Bank of England has significantly altered the risk profile of the government's debt portfolio.	Gilt maturities have increased to an average of more than 18 years, much greater than for other countries. This should reduce exposure to changes in short-term interest rates, but the Bank of England's gilt holdings have the effect of swapping a significant proportion of this exposure back again.
Higher inflation and interest rates could significantly increase interest charges, potentially putting back the government's objective of eliminating the fiscal deficit.	Higher inflation, and potentially higher interest rates too, would have a significant impact on interest charges. A 1 percentage point increase in inflation and a 1 percentage point increase in short-term interest rates would increase interest charges by around £10 billion a year.

Scenario planning, including 'country-level stress tests', should be undertaken to assess the resilience of the UK to potential adverse developments in credit markets and to develop contingency plans accordingly.

Market sentiment in UK sovereign debt remains strong and the risk of investors withdrawing from credit markets appears to be very low. However, the high level of fundraising planned by the exchequer over the next five years means the UK is more exposed to adverse credit market events were they to occur.

9.1 Introduction

The UK government relies on external investors to provide it with the funding it needs. Cash to pay for spending not covered by taxes or other income, cash to invest in infrastructure and other assets, cash to lend to students and business, and cash to settle previously-incurred liabilities, including repaying existing debts as they fall due.

Over the last five years, the government has raised £635 billion from external investors, substantially greater than the levels of funding required prior to the financial crisis. Despite reduced fiscal deficits, it needs to raise even more over the next five years.

The job of issuing new debt falls to the Debt Management Office (DMO), the executive agency responsible for central government debt and cash management. It operates within an annual remit from HM Treasury, in line with a strategy established by a review into treasury management conducted in 1995. The remit sets out total gilt sales planned and the split between index-linked and conventional gilts and between short-, medium- and long-dated gilts.

The funds raised come at a price – investors require a return on the funds they provide and the cost of servicing debt is estimated to amount to £40 billion for 2016–17. Fortunately, low interest rates and low inflation have kept the government's debt interest bill down at the same time as the total amount of debt has increased significantly.

The DMO seeks to balance the risks associated with debt with its overall objective of minimising its overall cost. However, the Bank of England's purchases of gilts have altered that risk profile, significantly increasing the government's exposure to changes in short-term interest rates.

Section 9.2 provides an analysis of the government's current external debt position and how this has increased over recent years. It also looks at the cost of financing that debt and how that has changed over time.

This is followed by Section 9.3, which analyses the DMO's plan to raise fresh funds over the next five years and how that is driven by a need to refinance existing debts. It also

explains how gilt auctions are conducted and how debt is expected to start to fall in comparison with the size of the economy.

Section 9.4 looks at risks, including exposures to changes in inflation and interest rates. It considers external perception of the risks associated with investing in UK government debt, as well as discussing the need for a robust treasury management strategy in the light of global uncertainties.

Section 9.5 concludes.

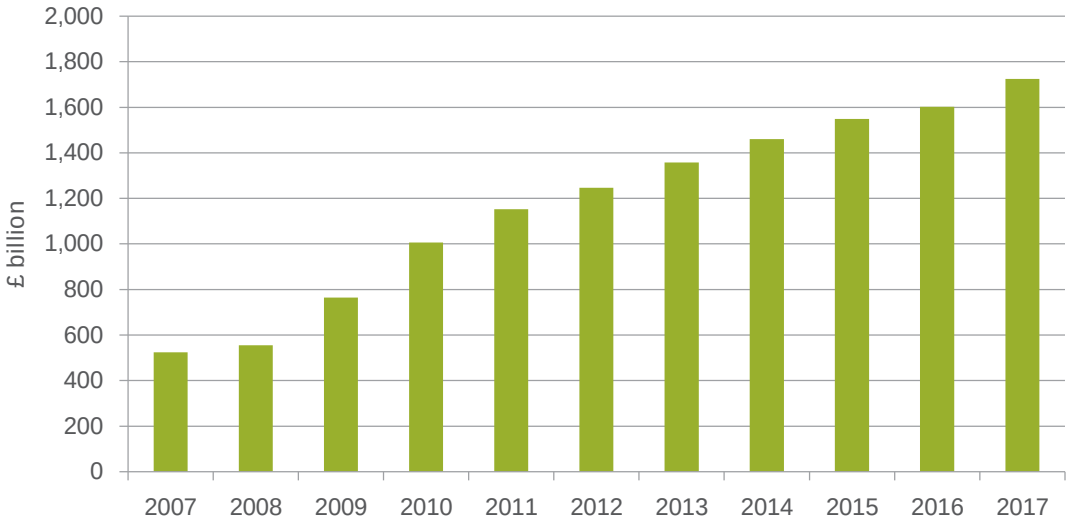
9.2 Debt

Public sector net debt excluding banks (PSNDex) is the government's preferred measure of indebtedness. It is used throughout this chapter in analysing the government's debt position, even though it nets off some, but not all, financial assets against most, but not all, financial liabilities.[1]

By definition, PSNDex does not incorporate the financial liabilities or assets of the Royal Bank of Scotland. It also excludes other liabilities as discussed in Chapter 4.

Financial liabilities have increased significantly over the last decade as government spending has exceeded its income each year since the financial crisis. Figure 9.1 illustrates how net debt has increased from £524 billion a decade ago to an expected £1,725 billion at 31 March 2017.

Figure 9.1. Public sector net debt excluding banks, March 2007 to March 2017



Note: Public sector net debt excluding banks. 2017 based on forecasts in the 2016 Autumn Statement.

Source: Office for National Statistics, Debt Management Office, Bank of England, Office for Budget Responsibility.

[1] The government has recently started to report a new measure in the National Accounts – 'public sector net financial liabilities'. This captures more liabilities than are included in public sector net debt, but then nets off a wider range of assets. At 31 December 2016, public sector net financial liabilities were estimated to be £1,520 billion compared with public sector net debt excluding banks of £1,698 billion at the same date.

Table 9.1. Public sector net debt at 31 December 2016

	£ billion
Government securities	1,038
Bank of England	502
National Savings & Investments	141
Loans and other debt	92
External debt	**1,773**
Less: cash and other liquid financial assets	(75)
Public sector net debt (PSNDex)	**1,698**

Note: Government securities are shown net of both central government and Bank of England gilt holdings.

Source: Office for National Statistics, 'Public sector finances December 2016'; Debt Management Office, Bank of England.

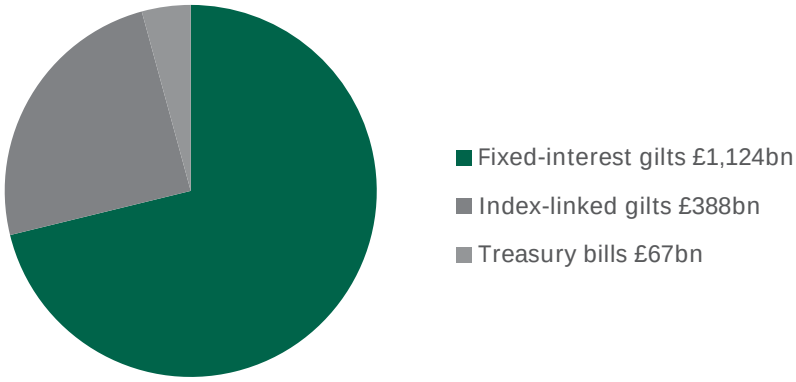
Table 9.1 analyses public sector net debt excluding banks at 31 December 2016.

Government securities

The primary method of financing for the government is through the issue of interest-paying bonds. Known as 'gilts' or 'Treasury bills', depending on their length, they are traded on the London Stock Exchange, with financial institutions and institutional investors being the principal investors.

At 31 December 2016, there were £1,579 billion of government securities in issue, as illustrated by Figure 9.2.

Figure 9.2. Government securities at 31 December 2016



Note: Government bonds in issue, i.e. before eliminating central government and Bank of England holdings.

Source: Debt Management Office.

Table 9.2. Government securities at 31 December 2016

Nominal value by maturity date	Gilts in issue (£bn)	Central government (£bn)	Bank of England (£bn)	External investors (£bn)
Treasury bills	67	0	0	67
2016–17 last quarter	29	(5)	(11)	13
2017–18 to 2021–22	467	(36)	(142)	289
2022–23 to 2026–27	244	(11)	(49)	184
2027–28 to 2031–32	128	(16)	(107)	5
2032–33 to 2036–37	148	(17)	(24)	107
2037–38 to 2041–42	110	(9)	(26)	75
2042–43 to 2046–47	149	(12)	(27)	110
2047–48 to 2051–52	71	(3)	(16)	52
2052–53 to 2056–57	66	(7)	(10)	49
2057–58 onwards	100	(2)	(11)	87
Total	**1,579**	**(118)**	**(423)**	**1,038**

Note: Nominal amounts include inflation uplifts on index-linked gilts. Numbers in parentheses relate to cross-holdings of government debt that are eliminated in arriving at the gilts owned by external investors.

Source: Debt Management Office and Bank of England.

Table 9.2 summarises the government securities in issue at 31 December 2016 by maturity (redemption) date. They are reported at their nominal values, which are based on how much will be repaid when they mature. In the case of index-linked gilts, this includes inflation-linked uplifts accrued up until 31 December 2016.

These amounts differ from the amounts actually paid by investors to the government on issue or the amounts for which they will change hands in the market subsequently.

At 31 December 2016, there were £118 billion of government bonds owned by central government itself. These include gilts that have been issued by the DMO but have yet to be sold to investors, as well as gilts used by the DMO for operational reasons – for example, to support the Treasury in managing central government cash resources, or to support the efficient operation of gilt markets by providing additional liquidity when required.

Box 9.1. Types of government securities

Conventional fixed-interest gilts are bonds issued for a variety of periods: short-term if they are due to be repaid within seven years of the date of issue, medium-term between seven and 15 years, and long-term if longer than 15 years. They pay interest (known as a coupon) twice a year until they mature, when the principal amount is repaid.

An example of a long-term fixed-interest gilt is the **1.75% Treasury Gilt 2037** issued by the DMO on 6 January 2017. Investors purchased these in units of £100, entitling them to coupon payments of 87.5p twice a year over the next 20 years, followed by a final payment of £100 in 2037.

These gilts were sold at an average price of £96.27, equivalent to an effective annual interest rate of 1.97% on the funds raised.

Index-linked gilts are generally issued in medium- or long-term lengths and also pay a fixed coupon twice a year between their issue and their maturity date. The principal payable when they mature is not fixed and is instead linked to the change in the Retail Prices Index (RPI) over that time.

An example of an index-linked gilt is the **0.125% Index-Linked Treasury Gilt 2046** first issued by the DMO on 13 January 2016. Each £100 gilt pays a coupon of 6.25p twice a year over its 30-year term, followed by a payment of principal equal to £100 uplifted by the increase in the RPI between 2015 and 2045.

These gilts were first sold at an average price of £128.48, equivalent to a real interest rate of –0.72%.

Treasury bills are usually issued for periods of one, three or six months. They do not pay any coupons; investors in effect receive interest in the form of the difference between the discounted price at which they are issued and the repayment on maturity.

An example is a six-month Treasury bill issued in January 2017 and due to mature on 17 July 2017. £100 Treasury bills were issued at an average discounted price of £99.91, providing a yield to investors equivalent to an annual rate of interest of 0.18%.

Bank of England

The Bank of England also provides finance to the government, principally in the form of deposits owed to banks and other financial institutions – in effect, electronic money. The Bank of England pays base rate (currently 0.25%) on these deposits and so these balances currently represent a relatively cheap form of financing.

At 31 December 2016, the net amount owed to external parties by the Bank of England was £502 billion. This has increased significantly since the financial crisis as a consequence of quantitative easing, as described in Box 9.2.

Box 9.2. The Bank of England, quantitative easing and printing money

In January 2009, the Bank of England set up an asset purchase facility to buy high-quality assets financed by the issuance of Treasury bills with the aim of improving liquidity in credit markets. At the same time, the government also authorised the Bank of England's Monetary Policy Committee (MPC) to support monetary policy by purchasing financial assets in exchange for creating new deposits in the Bank of England.

The latter process is known as quantitative easing and has become a key part of the MPC's response to the financial crisis. Its aim is to increase private sector spending in the economy and help return inflation to target.

Decisions about quantitative easing are made by the independent MPC. With continued low inflation and weak economic growth, the MPC has on several occasions increased the target for gilt purchases, with the latest being to reach £435 billion in gilt holdings by 31 March 2017.

The MPC has also extended quantitative easing beyond the purchase of gilts, with a £10 billion corporate bond purchase scheme and a 'Term Funding Scheme' of up to £100 billion, the aim of which is to encourage lending by providing low-cost finance for up to four years to UK banks and building societies for onward lending to businesses.

The issue of new bank deposits by the Bank of England is sometimes described as 'printing money', even though it still gives rise to financial liabilities on which the Bank of England has to pay interest at the bank base rate, currently 0.25%.

By purchasing gilts in this way, the Bank of England has changed the external profile of the government's debt, reducing the amount owed to external investors in gilts in exchange for a higher level of Bank of England deposits. As the overall interest rate payable on gilts is higher than the current base rate, this has the effect of saving the government money on its interest bill – in 2016–17, by approximately £13 billion. However, this has the consequence of significantly increasing the government's exposure to movements in short-term interest rates, as discussed in Section 9.4.

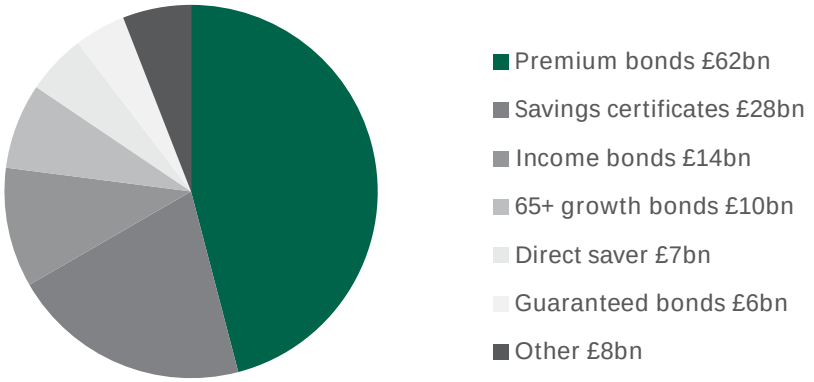
At 31 December 2016, quantitative easing asset purchases amounted to £449 billion, comprising £423 billion used to fund the purchase of gilts, £5 billion used to fund the purchase of corporate bonds and £21 billion used to fund loans under the Term Funding Scheme.

Other sources of finance

The government also raises funds from private investors in the UK through National Savings & Investments, a state-run savings institution. At 31 December 2016, there was £141 billion due to investors in the form of tax-free deposit accounts, savings certificates and premium bonds.

These can be analysed as shown in Figure 9.3, which shows the position at 31 March 2016 when balances totalled £135 billion.

Figure 9.3. National Savings & Investments at 31 March 2016



Source: National Savings & Investments, *Product Accounts 2015–16*.

Loans and other debt of £92 billion at 31 December 2016 comprise the external debts of local authorities, public corporations and other public bodies. In total, these bodies had debts amounting to £175 billion, but £83 billion of these were owed to central government and so are eliminated in arriving at the total for external debt.

Local authorities owed £21 billion to external investors and £71 billion to central government. The majority of central government lending to local government (approximately £65 billion) is for loans provided by the Public Works Loan Board to support infrastructure projects.

Public corporations, which include Network Rail and housing associations, had debts of £83 billion at 31 December 2016, of which £12 billion was due to central government. Amounts owed to external parties included corporate bonds as well as bank loans and other forms of finance.

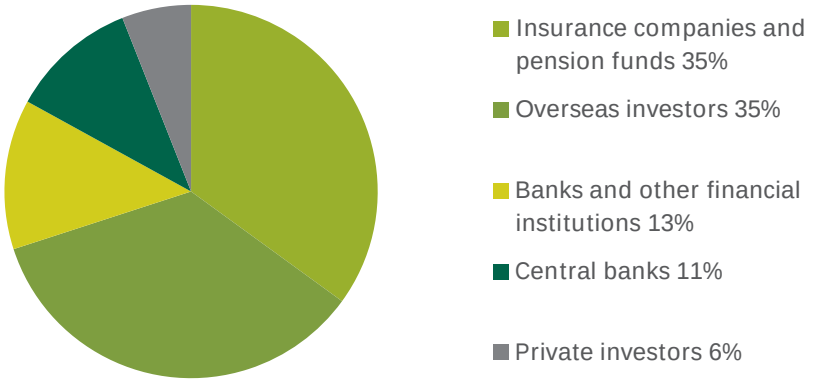
Investors

The primary investors in gilts are domestic institutional investors, as shown in Figure 9.4. Overseas investors account for a little more than a third of the total.

Insurance companies and pension funds are major investors in government securities, particularly in index-linked gilts. The benefit of owning index-linked gilts is the protection they provide against inflation, which can be matched against liabilities that are also linked to inflation, such as pension obligations.

There is high demand for index-linked gilts as, with the exception of index-linked corporate bonds issued by price-regulated utilities, there are only a small number of alternative investments available with similar characteristics. This high level of demand is likely to continue for the near to medium term as defined benefit pension schemes in particular continue to seek to hedge their exposures to inflation. However, changes in the pension arrangements for younger generations mean that demand for index-linked gilts in future decades may reduce.

Figure 9.4. Gilt investor composition at 30 June 2016



Source: Debt Management Office, *Quarterly Report September 2016*, adjusted to exclude Bank of England gilt holdings.

Interest on debt

The rate of interest actually paid by the government depends on market rates at the date bonds are issued, and also on the length of time for which money is borrowed. This is because investors will generally want to be paid a higher rate of interest to tie up their money for longer, while borrowers will be prepared to pay more to secure longer-term funding.

Table 9.3 provides details of recent interest rates available to investors in government securities or in Bank of England deposits.

It is important to understand that the effective interest rate actually paid by the government reflects interest rates prevailing at the time government securities were originally issued. For a Treasury bill that might be only a month or two ago, but for older long-term gilts the interest rate being paid today would have been set more than a decade ago.

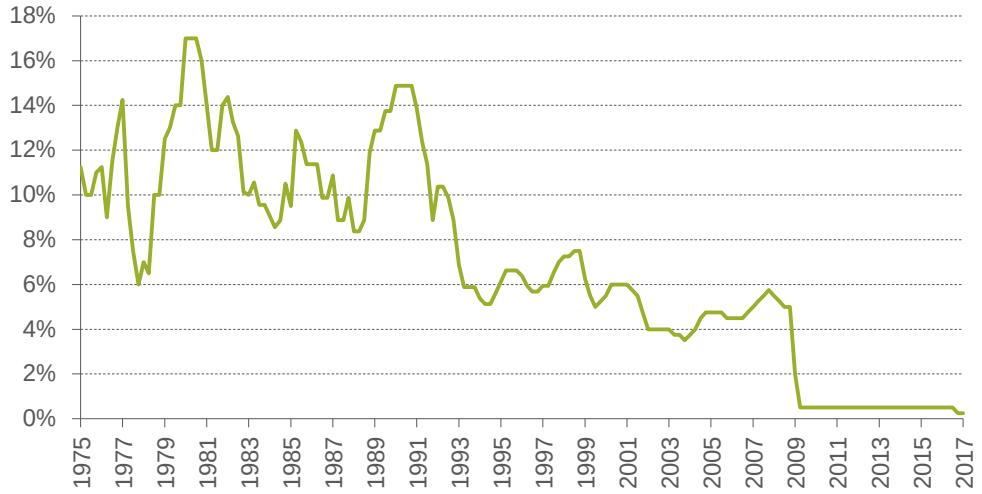
Yields on index-linked gilts are currently negative in real terms, with one 30-year index-linked gilt recently priced at the equivalent of a real interest rate of –1.5%.

Table 9.3. Market yields at 20 January 2017

	Annualised rate (%)		Annualised rate (%)
1-month Treasury bills	0.14%	2-year fixed-interest gilts	0.18%
3-month Treasury bills	0.24%	5-year fixed-interest gilts	0.61%
6-month Treasury bills	0.28%	10-year fixed-interest gilts	1.41%
Base rate	0.25%	30-year fixed-interest gilts	2.05%

Source: Bloomberg.

Figure 9.5. Bank base rates since 1975



Source: Bank of England, 'Statistical Interactive Database – official Bank Rate history'.

Figure 9.5 shows how interest rates were much higher in recent decades than they are today. As a consequence, the effective interest rate on government debt is a mixture of higher rates on gilts that were issued before 2009 and the much lower rates that have been experienced since then.

During 2014–15, interest charges on financial liabilities reported in the Whole of Government Accounts (WGA) amounted to £29 billion, equivalent to an effective annual interest rate of approximately 1.7% when compared with average financial liabilities of £1.7 trillion.

This is lower than the effective interest rates reported in the National Accounts, estimated to be around 2.1% for the same period.

The difference is primarily because the National Accounts exclude premiums and discounts paid or deducted by investors on the issue of gilts from the interest charges and debt balances reported. By excluding these initial cash flows, the calculation of the overall effective interest rate payable on gilts is distorted.

With continued low interest rates persisting into the current year, the average effective interest rate should reduce further as existing debts are refinanced at those lower rates. As a consequence, it is likely the effective interest rate on government debt for 2016–17 will be even lower than the 1.7% calculated on a WGA basis for 2014–15. This is in contrast with Office for Budget Responsibility (OBR) estimates of 2.1% in 2016–17 for the effective interest rate on a National Accounts basis.[2]

Both the WGA and National Accounts calculations of interest reflect the saving arising from gilts purchased by the Bank of England. This saving arises from the difference between the interest that would have otherwise been paid to external investors and the lower rate actually payable on the deposits at the Bank of England that have been used to finance those purchases.

[2] Source: Office for Budget Responsibility, *Economic and Fiscal Outlook Supplementary Tables*, November 2016.

In 2016–17, this is expected to result in a saving of around £13 billion in interest payments, reducing interest as reported in the National Accounts from £53 billion before quantitative easing to £40 billion after taking it into account.

The saving in interest costs that the temporary quantitative easing intervention provides has been extremely helpful to the government in controlling public spending. However, this benefit will continue only for as long as the MPC deems quantitative easing to still be necessary, while in the meantime the size of the saving would be reduced significantly if bank base rates were to increase.

Funding over the last five years

Over the last five years, the government has raised £635 billion in cash from external investors to finance its operations, supplemented by £175 billion in new Bank of England deposits.

Table 9.4. Funding required and cash raised over the last five years

	2012–13 (£bn)	2013–14 (£bn)	2014–15 (£bn)	2015–16 (£bn)	2016–17 (£bn)	Total (£bn)
Fiscal deficit	(123)	(104)	(92)	(72)	(68)	**(459)**
Government lending[a]	(10)	(13)	(14)	(14)	(61)	**(112)**
Debt repayments	(67)	(52)	(65)	(70)	(70)	**(324)**
Asset disposals	14	26	11	26	2	**79**
Timing and other[b]	21	(13)	16	(10)	(8)	**6**
Funding required	**(165)**	**(156)**	**(144)**	**(140)**	**(205)**	**(810)**
Gilt sales[c]	93	153	126	128	87	**587**
National Savings	0	3	18	11	9	**41**
Treasury bills	0	0	0	1	6	**7**
External investors	**93**	**156**	**144**	**140**	**102**	**635**
Bank of England deposits	72	0	0	0	103	**175**
Cash raised	**165**	**156**	**144**	**140**	**205**	**810**

[a] Government lending in 2016–17 includes £10 billion in quantitative easing purchases of corporate bonds and £33 billion in Term Funding Scheme loans.
[b] 'Timing and other' reflects differences between the 'near cash' fiscal deficit and actual cash movements, net changes in local authorities' and public corporations' debts and foreign currency reserves, as well as premiums and discounts on gilt issues.
[c] Gilt sales are based on nominal values and are net of Bank of England purchases of gilts financed by new deposits.

Source: Office for Budget Responsibility; Debt Management Office.

This is set out in Table 9.4, which shows the principal drivers of the funding required and the sources of cash raised.

The most significant driver of the funding requirement over the last five years was the need to pay for spending in excess of income – the fiscal deficit.

Cash was also needed to fund government lending, comprising student loans as well as loans to businesses and other organisations. This increased in 2016–17 as a consequence of an additional £43 billion in lending to businesses by the Bank of England in the form of £10 billion of corporate bond purchases and £33 billion in low-cost loans provided through the Term Funding Scheme.

The second-largest funding requirement was to repay debts, but this was partially offset by cash generated from asset disposals, principally the sale of shares and other assets of financial institutions acquired at the time of the financial crisis.

The primary means of fundraising was through the sale of gilts to external investors by the DMO, which issued £719 billion in new gilts over the five years shown in Table 9.4. This was offset by £132 billion of gilts purchased by the Bank of England that were financed by new bank deposits.

9.3 Funding over the next five years

Based on OBR forecasts published at the time of the 2016 Autumn Statement, the government needs to raise £646 billion in funding over the next five years. This is summarised in Table 9.5.

Fiscal deficits are expected to be lower than in the previous five years, but this is more than offset by an increase in the amount of debt that needs to be refinanced and by an expectation that there will be no further increase in the Bank of England's gilt holdings.

It is likely that most of the £646 billion in funding required from external investors will be raised through issuing gilts, with the balance coming from increased lending by National Savings & Investments and through increases in the volume of Treasury bills in issue. This is £11 billion higher than the amount raised from external investors (net of quantitative easing) over the preceding five years.

Although the forecast assumes that there will be no increase in the Bank of England's gilt holdings, it does assume that there will be purchases of gilts by the Bank of England to replace existing gilts as and when those holdings mature. This appears to be a reasonable assumption, as the MPC has indicated that quantitative easing is likely to be maintained for some time to come, and that when it is unwound this will be done at a gradual pace.

A 'passive' approach to unwinding quantitative easing would involve ceasing to purchase replacement gilts when existing gilts mature and using those funds to reduce Bank of England deposits instead.

Table 9.5. Cash flows and planned funding over the five years to 2021–22

	2017–18 (£bn)	2018–19 (£bn)	2019–20 (£bn)	2020–21 (£bn)	2021–22 (£bn)	Total (£bn)
Fiscal deficit	(59)	(47)	(22)	(21)	(17)	**(166)**
Government lending	(73)	(22)	(22)	(23)	(25)	**(165)**
Debt repayments	(80)	(67)	(93)	(97)	(79)	**(416)**
Asset disposals	23	7	3	2	-	**35**
Timing and other	3	3	5	-	3	**14**
Funding required	**(186)**	**(126)**	**(129)**	**(139)**	**(118)**	**(698)**
External investors	**134**	**126**	**129**	**139**	**118**	**646**
Bank of England deposits	52	0	0	0	0	**52**
Planned funding	**186**	**126**	**129**	**139**	**118**	**698**

Note: Government lending and debt repayments are shown net of repayments of £31 billion and £54 billion in 2020–21 and 2021–22 respectively under the Term Funding Scheme. Projected asset disposals include £2 billion from sales of Lloyds shares, £21 billion from sales of former Northern Rock and Bradford & Bingley loan books and £12 billion from sales of student loans.
Amounts shown exclude Bank of England corporate bond purchase and Term Funding schemes.

Source: Office for Budget Responsibility and Debt Management Office.

This contrasts with a more active process of unwinding quantitative easing (QE) involving the sale of gilts by the Bank of England, repaying Bank of England depositors by increasing the funds to be obtained from external investors.

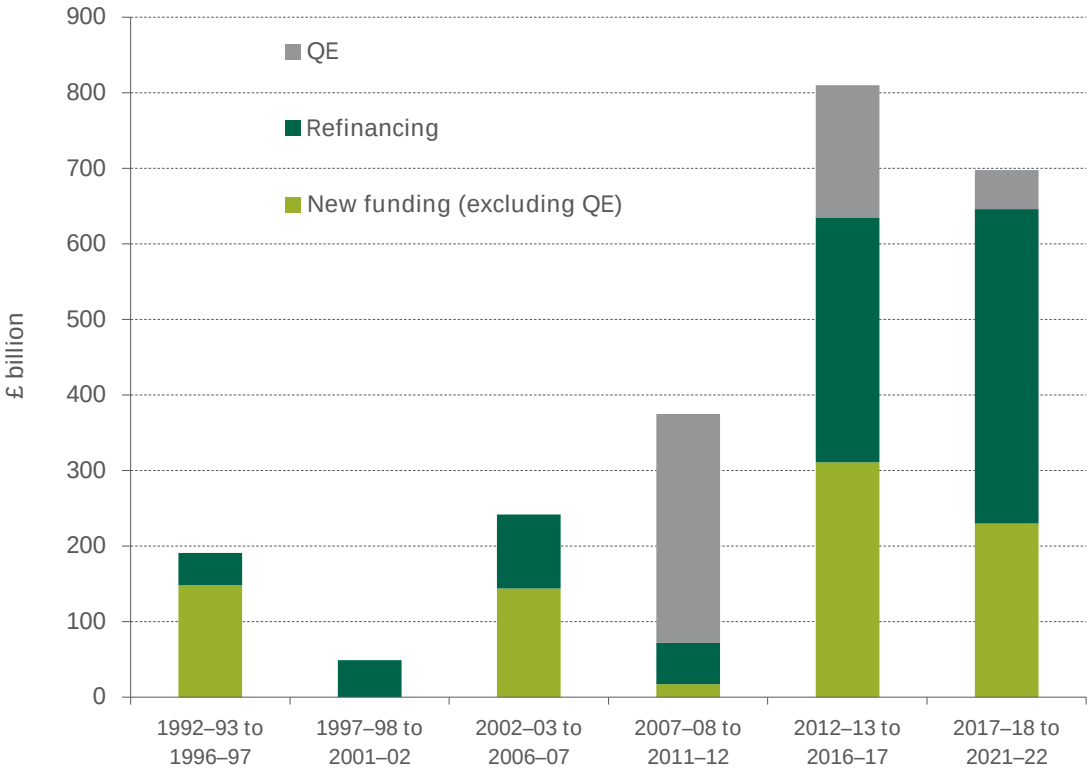
Figure 9.6 illustrates how funding requirements have increased significantly over the last 25 years since 1992.

Fiscal deficits in the five-year period from 1992–93 to 1996–97 were followed by an overall net surplus in the following five years up to 2001–02. This pattern was reversed in the next five years, with increased spending combined with an increased need to refinance the borrowing a decade earlier driving a relatively high funding requirement in the period to 2006–07.

The financial crisis in 2008 resulted in historically large deficits in the five years from 2007–08 to 2011–12. However, as proceeds received by the DMO from investors from the sale of gilts were offset by payments made by the Bank of England to external investors for the purchase of gilts, the net new funding obtained from external investors was relatively small in comparison with the amount provided by Bank of England depositors.

The higher level of funding required in the next five years, to 2016–17, is driven by a combination of factors. As well as continuing to need to fund fiscal deficits, there is a greater refinancing requirement as a coincidence of timing as long-term gilts issued

Figure 9.6. Funding requirements 1992–93 to 2021–22, £ billion (nominal)



Source: Debt Management Office; Bank of England.

before the financial crisis fall due for repayment, just as medium-term gilts issued following the financial crisis and short-term gilts issued more recently fall due as well.

The next five years are expected to represent a peak in funding requirements.

Debt repayments after 2021–22 should be lower as the DMO has been able to spread repayments over a longer time frame, while lower fiscal deficits, or potentially surpluses, should reduce the level of new funding required each year (see Chapter 3).

The funding remit

Following each Budget, HM Treasury provides the DMO with a remit for the coming financial year. As well as setting a funding target, the remit also sets out the relative proportions of different gilts to be issued.

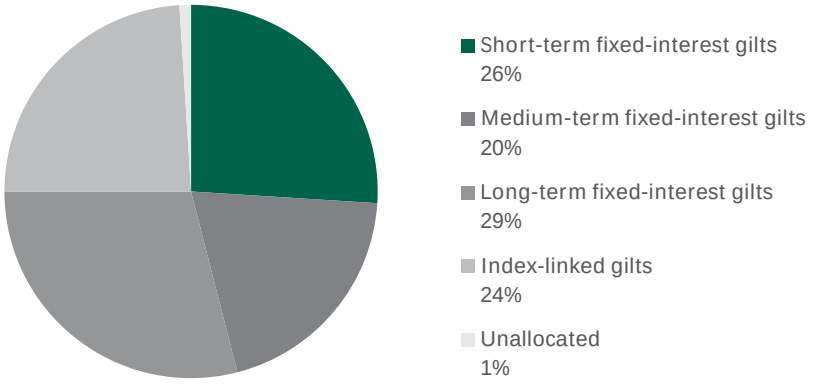
The remit is generally updated at the time of the Autumn Statement to reflect changes in the funding needs of the government since the preceding Budget.

For example, the 2016 Autumn Statement increased the DMO's funding remit from £131 billion to £147 billion for the current fiscal year.[3] This was primarily driven by the need to pay for a £13 billion increase in the estimated fiscal deficit for 2016–17.

The revised remit for 2016–17 is shown in Figure 9.7.

3 Gilt issues in Table 9.4 of £87 billion are net of £60 billion of gilt purchases by the Bank of England.

Figure 9.7. Planned split of gilt issuance 2016–17



Source: Debt Management Office, 'Autumn Statement 2016: revision to the DMO's financing remit 2016–17'.

Box 9.3. Raising funds – gilt auctions and syndications

The government primarily raises funds through public **auctions** at which market participants bid to purchase gilts. There are around 30–50 of these held each year, subject to market demand.

For example, on 19 October 2016 the Debt Management Office sold £2.5 billion of 1.5% Treasury Gilt 2026. These are 10-year gilts due for repayment on 22 July 2026 with a fixed interest rate of 1.5% paying a total of £37.5 million each year in interest.

Bids were received for just over £5 billion in gilts, meaning the auction was twice subscribed. Only bids within a certain range were accepted, with an average price of £103.898 for each £100 gilt, providing total funds to the exchequer of £2,597 million.

This price was a premium of £97 million over the nominal value of the bonds, which reduced the effective interest rate payable on the bond by the government to 1.078%.

From the perspective of investors, this interest rate of 1.078% is reflected in the price of the gilts and is known as the yield. This will change over time for investors; however, the government is not exposed to these subsequent changes as the amounts it will pay out are fixed at the date of issue or, in the case of index-linked gilts, linked to changes in the RPI.

As an alternative to public auctions, the DMO sometimes chooses to raise funds through a **syndication** process. This is a negotiated process where a lead investor agrees terms with the DMO, which are then accepted by a wider group of investors.

Syndications allow the DMO to access a different group of investors from those who normally participate in gilt auctions, while allowing syndicates to create more tailored investment packages – for example, by combining gilts issued by the government with other investment products.

A similar remit is expected to be published with the 2017 Budget in March, setting out the proportions of different types of gilts that the DMO will need to plan to issue in 2017–18. It will also indicate the balance between issuing gilts through auctions and syndications respectively, as described in Box 9.3.

These proportions are primarily intended to balance the government's exposure between short- and long-term interest rates and to inflation risk, as well as to spread future repayments over time. This is to minimise the refinancing requirements in any one particular year.

The DMO also takes account of anticipated market demand that could drive cheaper financing opportunities.

The proportions of different gilts selected over time have had the consequence of changing the maturity profile of the external debt portfolio as it is refinanced. For example, the maturity profile will lengthen as short-term fixed-interest gilts repaid this year are replaced by medium- and long-term gilts in a ratio of 3 to 1. This reflects the greater proportion of short-term debt that is currently being refinanced.

A further factor is that the DMO has taken advantage of favourable market conditions to increase the length of both long-term gilts and index-linked gilts, locking in very low nominal or real interest rates for periods of up to 50 years.

Over the last decade, a combination of these approaches has had the effect of increasing the average maturity of gilts in issue up to around 18 years at 30 September 2016.

The effect this has on refinancing risk and on the government's external interest rate profile is discussed further in Section 9.4.

Public sector net debt

While refinancing debt does not increase the overall total amount owed to external investors, the new funding required to pay for public spending and increased government lending will result in an increase in public sector net debt over the next five years.

The effect of this increase is summarised in Table 9.6, which highlights how public sector net debt excluding banks is expected to reach almost £2 trillion by March 2022.

Lower fiscal deficits are expected to result in a slower rate of growth in public sector debt over the next five years than has been seen over the past decade. In comparison with the overall size of the economy, it is expected to peak at 90.2% of GDP at 31 March 2018 and to fall thereafter.

The Term Funding Scheme has the effect of increasing public sector net debt as it is used to fund new loans, which is then reversed as those loans are repaid four years later. As a consequence, the forecast peak in public sector net debt excluding banks as a share of GDP is exaggerated as is the subsequent fall.

The expected peak in public sector net debt as a proportion of GDP has now moved several times, with expectations being revised in successive fiscal events due to poorer-than-expected performance of the economy. An example is the March 2015 Budget, which

Table 9.6. Projected public sector net debt over the next five years

PSNDex	March 2017 (£bn)	March 2018 (£bn)	March 2019 (£bn)	March 2020 (£bn)	March 2021 (£bn)	March 2022 (£bn)
Excluding Term Funding Scheme	1,692	1,755	1,819	1,860	1,898	1,952
Term Funding Scheme	33	85	85	85	52	0
PSNDex	1,725	1,840	1,904	1,945	1,950	1,952
PSNDex exc. Term Funding Scheme / GDP	85.7%	86.0%	85.7%	84.2%	82.5%	81.6%
PSNDex / GDP	87.3%	90.2%	89.7%	88.0%	84.8%	81.6%

Source: Office for Budget Responsibility.

predicted that debt would start to fall as a proportion of GDP over the course of 2015–16. Whether the most recent forecast of a fall over the course of 2018–19 will be achieved is subject to some uncertainty, at least on a basis excluding the Term Funding Scheme.

9.4 Strategy and risks

The outlook remains negative, reflecting the continued institutional and economic uncertainty surrounding Brexit negotiations, and what arrangements will emerge post-departure. We also see heightened risks of a deterioration in external financing conditions in light of the UK's high gross external financing requirements.

Standard & Poor's, 28 October 2016

Debt management strategy

The government's current strategy for raising and managing debt was established in a debt management review conducted in 1995. It is based on an overall objective for debt management, which is 'to minimize over the long term the cost of meeting the government's financing needs, taking account of risk, whilst ensuring that debt management policy is consistent with monetary policy'.

The strategy established by the review emphasised the importance of maintaining a strong and liquid gilt market that remains open and available for the government to be able to raise new debt as required. It also sets out a principle that the government should seek to balance exposures between short-term interest rates, long-term interest rates and inflation.

To support the operation of efficient gilt markets, the review sets out how the government should issue debt in a predictable way, on a 'no surprises' basis. In order to achieve this, the DMO communicates planned funding requirements well in advance and conducts

auctions and syndications in a transparent manner – for example, by publishing details of bids received following each auction.

The planned funding requirement for each year is set out in an annual debt management report published by HM Treasury at each Budget. This provides a remit for the DMO for the coming year, including the amounts to be raised, the proportion of different types of gilts to be issued and the balance between auctions and syndications.

The 1995 debt management review was written before the establishment of the DMO in 1998, which was necessitated as a consequence of the decision to grant operational independence to the Bank of England in 1997. However, HM Treasury concluded at the time that the approach set out in the 1995 debt management review remained appropriate and this was reconfirmed in a strategic 'landscape' review in 2003–04.

A Treasury Committee briefing by the National Audit Office in 2007 concluded that the DMO's activities were consistent with debt management objectives and with International Monetary Fund (IMF) guidance, but made a number of recommendations on how the DMO could improve the measurement and reporting of its performance.

However, no reviews appear to have been conducted since the financial crisis in 2008 and the significant increase in the government's indebtedness since then.

With the UK having voted to leave the European Union, now may be a good time to review the government's approach to debt management to ensure that it is robust in the face of increased economic uncertainty.

Sources of funding

As a sovereign debt issuer, the government has a theoretically unlimited 'credit line' available to it in the form of the Bank of England's ability to print money by creating new bank deposits. However, if used for non-monetary-policy reasons, this could have adverse economic consequences, and so in practice the government seeks to obtain the funds it needs by borrowing.

The most effective and cheapest way to borrow money is to do so directly from debt investors. Hence the primary routes through which the government seeks to raise funds are by selling government securities directly to institutional and other debt investors and by taking deposits directly from retail investors.

Local government's more limited funding requirements are in most cases funded in the same way, with funds obtained through gilt markets supplied to local authorities through Public Works Board and other loans. A limited number of other public bodies, such as Network Rail, have obtained bank loans and issued their own corporate bonds, but these are generally at effective interest rates that are much lower than those available to non-publicly-owned entities.

The government has used Private Finance Initiative (PFI) arrangements to provide funds for the building of schools, hospitals and other assets. These are a more expensive form of financing, which has been justified by government on the basis of the risks assumed by PFI providers as part of these arrangements.

Liquidity

In order to ensure cash is available as required to fund government activities and to repay debts as and when they fall due, the DMO seeks to ensure that there is an open and effective market for government securities.

It does this by offering gilts that are attractive to investors, by conducting operations in a transparent fashion, and by supporting an efficient market – for example, by purchasing or selling gilts on a daily basis in order to provide liquidity to investors. Together these actions are designed to provide confidence to investors to purchase gilts as a safe haven investment and so to continue to keep gilt markets open to the government.

There is no obligation on debt investors to continue to lend to the government, and so the DMO seeks to ensure that gilts continue to be attractive – for example, by ensuring gilts are classified as high investment grade, so that institutional investors that limit their exposure to riskier forms of investment can continue to invest.

The DMO also aims to limit the risk of oversupply by minimising the amount that needs to be refinanced at any one point in time. For example, by spreading out maturity dates over a longer period, the DMO has sought to minimise the refinancing required each year, with substantially reduced refinancing requirements from 2022–23 onwards.

In addition, the DMO has sought to ensure that only a relatively small proportion of overall debt is repayable on demand or needs to be refinanced within the very near term. For example, many National Savings & Investments products are repayable on demand, while Treasury bills need to be refinanced every month, three months or six months. In each case, the amount of exposure is relatively small in the context of the overall volume of debt outstanding.

Despite those actions, investors do have choices and there remains the possibility that if demand falls then interest rates would need to rise to make gilts more attractive. Alternatively, the government could seek to obtain finance from other sources, such as syndicated bank loans. In each case, this would likely involve paying more to obtain funding than is possible today.

Maturity profile

The choice made by the DMO over the length of the bonds it issues is one of the key drivers in determining the cost of debt and the level of refinancing required each year. Box 9.4 explains some of the trade-offs made by the DMO in deciding between short-term and long-term finance.

Over the last decade, the DMO has adopted a policy of increasing the length of the gilts it issues.

As a consequence, average maturities of government securities increased from 11.7 years at 30 June 2005 to 18.2 years as of 30 September 2016, as illustrated by Figure 9.8. This reflects fixed-interest gilts, where maturities have increased from an average of 12.1 years to 15.9 years, and index-linked gilts, where average maturities have increased from 13.5 years to 24.7 years. Average maturities for Treasury bills increased slightly from 0.13 years to 0.21 years.

Box 9.4. Maturity and interest rates – the choice

The length of time until a bond is repaid affects its cost at issue, the length of time before the interest rate is reset and the amount of debt that needs to be refinanced each year.

For example, consider the choice between issuing a 30-year gilt and issuing a 2-year gilt.

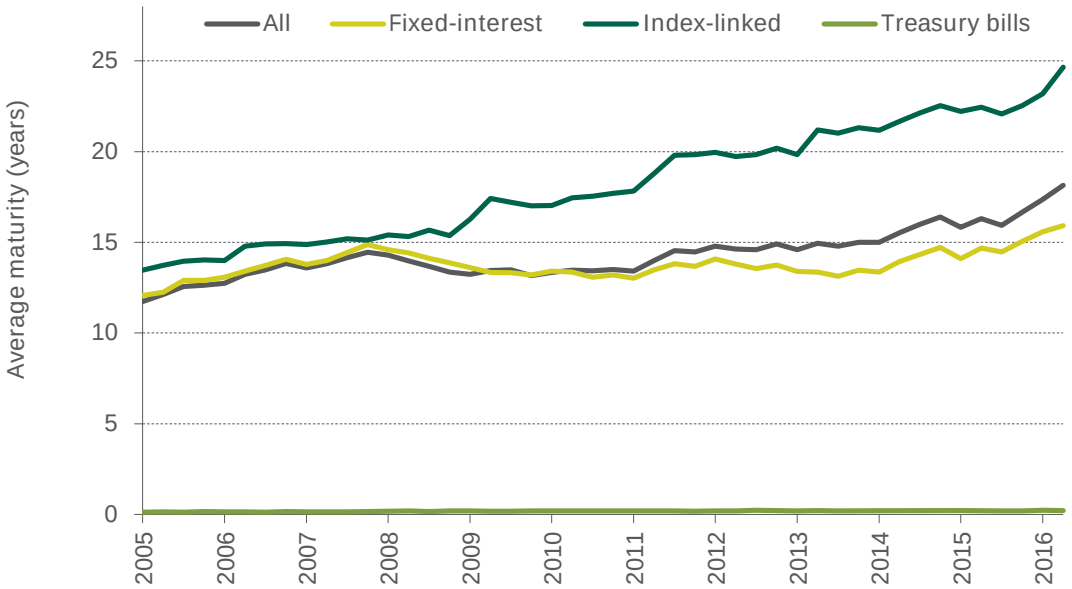
At a yield of 2.0%, interest on a £1 billion 30-year gilt would be £20 million a year, fixed for the next 30 years.

This compares with the £2 million in interest that would be payable each year on a £1 billion 2-year gilt yielding 0.2%. However, after two years the DMO would need to refinance this gilt and interest rates may well be different when it does.

One way of looking at the £18 billion additional cost is as a premium to hedge against interest rates increasing over the subsequent 28 years and for the benefit of reducing the amount of debt that needs to be refinanced over the intervening period.

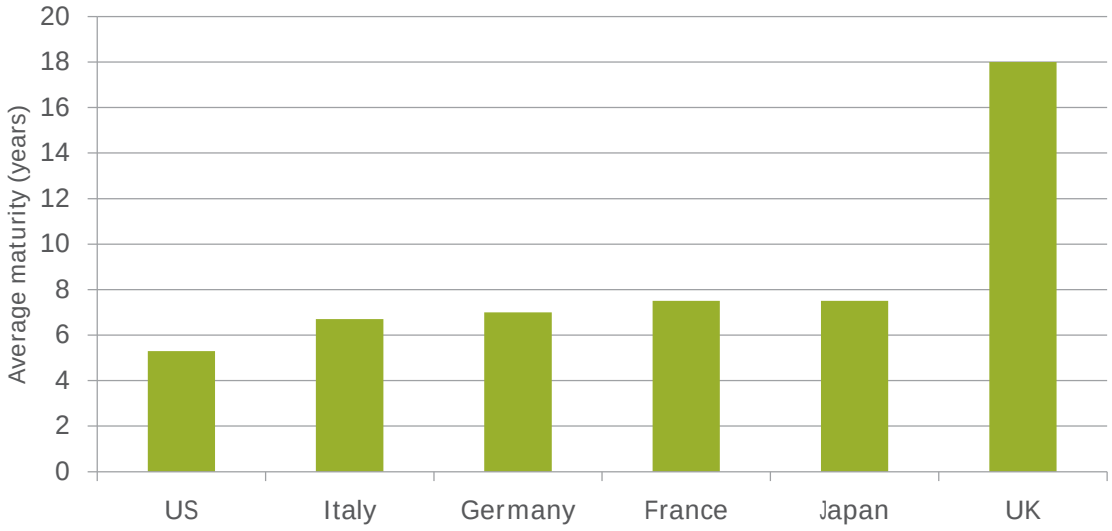
There is a corollary. Committing to a fixed-interest rate for a long period means missing out on the opportunity to take advantage of future reductions in interest rates.

Figure 9.8. Average maturities of government securities



Source: Debt Management Office.

Figure 9.9. Average maturities, 2016



Source: US Treasury, Eurostat, Japan Ministry of Finance, Debt Management Office.

The average maturity of UK government securities is much greater than that in comparable developed economies, as illustrated by Figure 9.9.

One of the key drivers behind this difference is that the DMO has been able to take advantage of strong demand from domestic institutional investors for long-term debt, in particular from pension funds for index-linked gilts that provide a hedge against their RPI-linked liabilities.[4] This has enabled the DMO to lock-in low interest rates for longer periods than would otherwise be possible.

Interest rate and inflation risks

The need to borrow from external lenders exposes the government to the risk of interest rate changes and, in the case of index-linked debt, to changes in the rate of inflation.

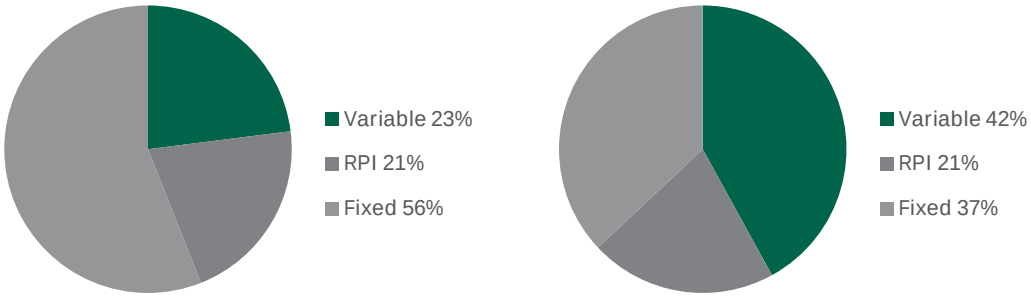
These risks can go both ways. If debt is short-term in nature or is due to be refinanced in the near future, then there is an increased exposure to rising interest rates in the near term. However, if the government has locked itself into long-term debt at high interest rates, it will not have the opportunity to take advantage of lower interest rates that might be available before it is due to be refinanced.

Similarly, by issuing index-linked debt, the government is able partly to protect itself from periods of low inflation, when debt is not being 'inflated away' as quickly as has been the case in the past. This contrasts with periods of higher inflation, when higher fixed-rate gilts will become cheaper in real terms, but this benefit being offset by a higher cost for index-linked gilts.

The DMO seeks to balance these different risks through a mixed portfolio of government securities, and the left-hand chart in Figure 9.10 provides an estimated summary of the relative proportions of external debt exposed to variable interest rates, fixed interest rates and to inflation.

[4] 'Reasons to be cheerful about gilts', *Financial Times*, 4 March 2010.

Figure 9.10. Exposure profile, before and after Bank of England gilt holdings



Note: Variable exposure for this purpose is defined as exposure to Treasury bills, 'ultra-short' fixed-interest gilts with maturities of less than three years, or to bank base rates.

Source: Debt Management Office, Office for National Statistics, National Savings & Investments, Bank of England; ICAEW calculations.

The right-hand chart reflects how this profile is changed by the Bank of England's gilt holdings, which replace gilts owned by external investors with deposits paying the bank base rate. This is very similar to an interest rate swap, which, in the case of the government, has been executed by an operationally independent Bank of England.

In practice, this swap in interest rate exposures is currently benefiting the exchequer by replacing higher rates payable on gilts for the much lower bank base rate.

However, this comes with a significant sensitivity to changes in base rates. For example, in November 2016, the OBR decreased its forecast for debt interest in 2020–21 by £3.5 billion

Table 9.7. OBR debt interest 'ready reckoner', change in £ billion

	2016–17 (£bn)	2017–18 (£bn)	2018–19 (£bn)	2019–20 (£bn)	2020–21 (£bn)	2021–22 (£bn)
1ppt increase in gilt rates	0.6	1.6	2.5	3.4	4.3	5.2
1ppt increase in short rates	5.3	5.6	5.6	5.6	5.6	5.6
1ppt increase in inflation	3.6	4.3	4.8	5.5	5.9	6.8
£5bn more borrowing	0.0	0.1	0.2	0.2	0.3	0.5
Assumed gilt rates	1.2%	1.3%	1.5%	1.6%	1.8%	1.9%
Assumed short rates	0.4%	0.3%	0.5%	0.6%	0.8%	1.0%
Assumed RPI	2.0%	3.2%	3.5%	3.1%	3.2%	3.2%

Note: Increases are assumed to commence at the start of 2016–17 and continue throughout the forecast period. Short rates are for three-month LIBOR.

Source: Office for Budget Responsibility, *Economic and Fiscal Outlook Supplementary Fiscal Tables*, November 2016.

to reflect the reduction in base rate from 0.5% to 0.25%.[5] If the MPC were to increase the base rate, the consequence would be an increase in debt interest.

The OBR provides a debt interest 'ready reckoner' to allow the effect of interest rates and inflation on debt interest costs to be understood, as shown in Table 9.7. This illustrates how an increase in gilt rates above the rates included in the OBR's forecasts would result in a gradual increase in debt interest as existing debts are refinanced, while changes in short rates and inflation would have a more immediate impact.

The OBR uses the term 'short rates' in this context to refer to commercial lending rates represented by three-month London Interbank Borrowing Rate (LIBOR), which is influenced by the bank base rate as well as by yields on Treasury bills and gilts.

Credit ratings

For many debt issuers, credit ratings are an important factor in the effective interest rates that can be obtained. These provide debt investors with a framework within which they can assess, manage and price their credit risk exposures. This is reflected within the investment profiles of institutional investors, which typically will limit the proportion of the funds they will put into riskier investments, based on the assessments of one or more of the credit rating agencies.

For sovereign debt issuers, credit ratings are less relevant, particularly in the case of developed economies where downgrades in credit ratings do not necessarily result in higher effective interest rates for the countries concerned. The UK is a good example of this, as although three of the main credit rating agencies no longer rate UK sovereign debt as AAA, the UK continues to be able to obtain finance at very low interest rates and gilt auctions and syndications are oversubscribed.

Credit rating agencies generally rate debt issuers on a 24-point scale, from C (close to default) to AAA (prime) depending on their assessment of the credit risks to debt investors in lending money to the organisations concerned. The top 10 ratings from BBB– to AAA are described as 'investment grade', while the top four from AA– to AAA are described as 'high investment grade'.

Although credit ratings appear to have less influence over the pricing of and demand for government debt, there may be an exception to this. Many institutional investors limit the

Table 9.8. Credit ratings for UK government debt

Agency	Rating	Outlook	Rating scale position (C = 24, BB = 12, AAA = 1)
DBRS	AAA	Stable	1
Fitch	AA+	Negative	2
Moody's	Aa1	Negative	2
Standard & Poor's	AA	Negative	3

Source: Fitch, Moody's, Standard & Poor's and DBRS.

[5] Page 168 of Office for Budget Responsibility, *Economic and Fiscal Outlook: November 2016.*

amount they will invest in debts rated below high investment grade, and so a downgrade to A+ or below might reduce the demand for government securities from such investors, especially if they are from overseas.

Credit default swaps

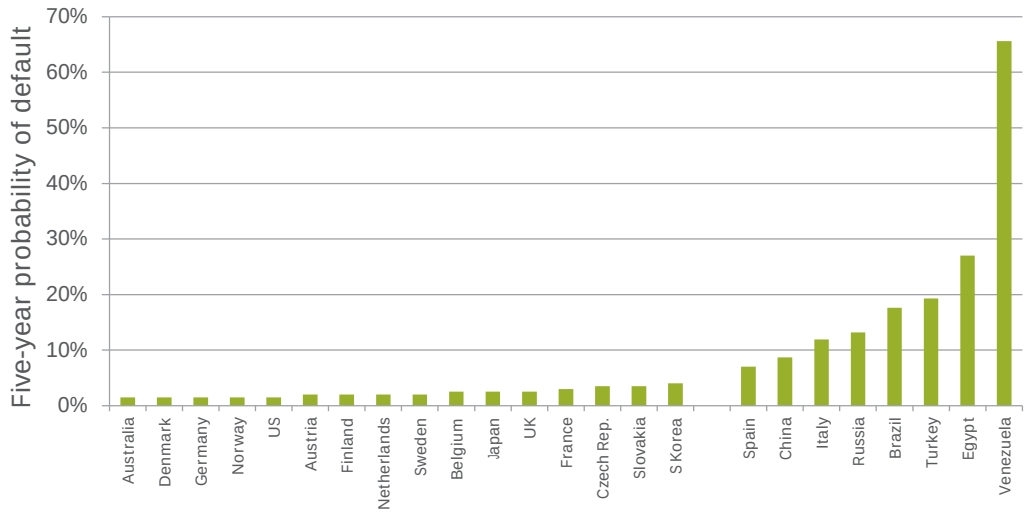
Market sentiment remains positive towards UK government securities.

This view is supported by the current price of credit default swaps (CDSs), which are one of the most widely used forms of credit derivatives. They pay out in the event of a negative credit event or default, such as a failure to repay debt on time or where less is paid back than the full amount due. The seller of a credit default swap agrees to step in and pay in full the interest and principal that should have been paid by the defaulting borrower, in exchange for receiving any payments (if any) still being made. In certain circumstances, credit default swaps may instead be settled for a single cash payment, based on market values at the date of default.

For debt investors, credit default swaps provide an insurance policy – protecting them from the risk that they may not receive all of the interest and principal that they are due, in exchange for a premium in the form of the purchase price for a credit default swap contract.

Various models exist for converting credit default swap prices into an implied probability of default on the government securities covered by those swaps. Deutsche Bank publishes the results of one such model for 47 countries, ranging from Australia with the lowest probability of default through to Venezuela as the most likely. Greece is not included in the list, but pricing from other sources implies an approximate 40% probability of default over the next five years.

Figure 9.11. Credit default swaps, probability of default



Note: Five-year default risk extrapolated from the annual probability of default based on a 40% recovery assumption.

Source: Deutsche Bank Research, 'CDS valuation tool', 19 January 2017.

Figure 9.11 summarises the implied probability of default for the top 16 countries in the Deutsche Bank Research analysis, together with selected other countries.

The UK's position at 12th in the list, with an implied five-year probability of default of 2.5% or 1 in 40, reflects the market view of the UK as a relatively safe place to invest, with only 11 other countries seen to be safer.[6]

These prices relate to five-year swaps and so do not reflect longer-term risks that could affect the UK economy and its ability to pay its debts. However, they do encompass the immediate fundraising peak expected over the next five years, providing an indication that current market sentiment is positive towards UK government securities.

9.5 Conclusion

Market confidence remains strong

Although credit rating agencies are cautious given the scale of funding needing to be raised over the next five years, market sentiment remains strong towards investing in UK government securities.

Retaining that market confidence is important as the government faces the challenge of continuing to raise substantial sums from investors at the same time as executing a successful departure from the European Union and negotiating new trading arrangements with other nations. Other factors, such as instability in the eurozone and continuing conflict in the Middle East, may also increase global economic and political uncertainty.

Quantitative easing has a significant effect on interest rate risk

The DMO's objective of balancing exposures to interest rates and to inflation has seen it increase the average maturity of gilts in issue, taking advantage of low interest rates as it has refinanced debt over the last five years. It has the opportunity to do the same over the next five years.

However, the effect of quantitative easing is to swap a substantial proportion of that profile into an exposure to bank base rates.

This has benefited the government over the last few years as bank base rates have been so low, but this is at a consequence of a much higher immediate exposure to changes in interest rates.

An omission from recent debt management reports is any consideration of the impact of the Bank of England's quantitative easing programme on the government's overall debt risk profile.

It may be that it is right, for monetary policy reasons, that the DMO should not attempt to counteract or mitigate the effect that quantitative easing has had on government's overall

[6] This probability is calculated based on the assumption that at least 40% of the debt investment would be recovered. The five-year probability of less serious defaults at a 60% recovery level for the UK is 3.5% or around 1 in 30, while the likelihood of more serious defaults implied by a 20% recovery level is 2.0% or around 1 in 50.

risk exposure. However, it is important that the government addresses this as part of an up-to-date treasury management strategy.

Strategy is important

The government's objectives and debt management strategy were last fully reviewed in 1995, before operational independence was granted to the Bank of England, the financial crisis occurred and the decision was taken by the British public to leave the European Union.

The consequences of these events should be considered as part of a fresh review, which should also take account of developments in treasury management over the last 20 years since the last review.

A review should also address the need for robust scenario planning, with 'country-level stress tests' to consider a range of potential scenarios, including low-probability high-impact events such as a weakening in sovereign debt markets or a loss of confidence by investors in the UK.

With significant debt funding required over the next five years – a period that is expected to involve significant changes in the UK economy – having a robust treasury management strategy in place is important.

Appendix A. Headline tax and benefit rates and thresholds

	2016–17	2017–18[a]
Income tax		
Personal allowance	£11,000 p.a.	£11,500 p.a.
Married couple's allowance, restricted to 10% (at least one spouse/civil partner born before 6/4/35)	£8,355 p.a.	£8,445 p.a.
Dividend allowance	£5,000	£5,000
Personal savings allowance basic (higher) rate	£1,000 (£500)	£1,000 (£500)
Basic rate	20%	20%
Higher rate	40%	40%
Additional rate	45%	45%
Tax rates on interest income	0%, 20%, 40%, 45%	0%, 20%, 40%, 45%
Tax rates on dividend income	7.5%, 32.5%, 38.1%	7.5%, 32.5%, 38.1%
Starting-rate limit	£5,000 p.a.	£5,000 p.a.
Basic-rate limit	£32,000 p.a.	£33,500 p.a.
Higher-rate limit	£150,000 p.a.	£150,000 p.a.
Income limit for personal allowance	£100,000 p.a.	£100,000 p.a
National Insurance		
Lower earnings limit (LEL)	£112 p.w.	£113 p.w.
Upper earnings limit (UEL)	£827 p.w.	£866 p.w.
Primary earnings threshold (employee)	£155 p.w.	£157 p.w.
Secondary earnings threshold (employer)	£156 p.w.	£157 p.w.
Class 1 rate: employee – below UEL	12%	12%
employee – above UEL	2%	2%
employer – below UEL[b]	13.8% / 0%	13.8% / 0%
employer – above UEL	13.8%	13.8%
Corporation tax		
Main rate	20%	19%
Bank levy		
Rates: equity and long-term liabilities	0.09% (0.085% from Jan 2017)	0.085% (0.08% from Jan 2018)
short-term liabilities	0.18% (0.17% from Jan 2017)	0.17% (0.16% from Jan 2018)

	2016–17	2017–18[a]
Capital gains tax		
Annual exemption limit: individuals	£11,100 p.a.	£11,300 p.a.
trusts	£5,550 p.a.	£5,650 p.a.
Standard rate[c]	18% (10%)	18% (10%)
Higher rate[c]	28% (20%)	28% (20%)
Inheritance tax		
Threshold	£325,000	£325,000
Rate for transfer at or near death	40%	40%
Main residence nil-rate band	-	£100,000
Value added tax		
Registration threshold	£83,000 p.a.	£85,000 p.a.
Standard rate	20%	20%
Reduced rate	5%	5%
Excise duties		
Beer (pint at 3.9% ABV)	40.7p	42.0p[d]
Wine (75cl bottle at 12% ABV)	208p	215p[d]
Spirits (70cl bottle at 40% ABV)	774p	799p[d]
20 cigarettes:[e] specific duty	392.8p	405.4p[d]
ad valorem (16.5% of retail price)	156.4p	159.5p[d]
Ultra-low-sulphur petrol (litre)	57.95p	57.95p
Ultra-low-sulphur diesel (litre)	57.95p	57.95p
Air passenger duty		
Band A (up to 2,000 miles): economy	£13[f]	£13[f]
club & first class[g]	£26	£26
higher rate[h]	£78	£78
Band B (over 2,000 miles): economy	£73[f]	£75[f]
club & first class[g]	£146	£150
higher rate[h]	£438	£450
Betting and gaming duty		
Gaming duty (depends on gross gaming yield)	15–50%	15–50%
Spread betting rate: financial bets	3%	3%
other bets	10%	10%
Insurance premium tax		
Standard rate	9.5% (10% from 1 Oct 2016)	10% (12% from 1 Jun 2017)
Higher rate (for insurance sold accompanying certain goods and services)	20%	20%

	2016–17	2017–18[a]
Stamp duty[i]		
Land and buildings:[j]		
marginal tax rate for house values:		
up to £125,000	0%	0%
£125,001–£250,000	2%	2%
£250,001–£925,000	5%	5%
£925,001–£1,500,000	10%	10%
above £1,500,000	12%	12%
marginal tax rate for property values:		
up to £150,000	0%	0%
£150,001–£250,000	2%	2%
above £250,000	5%	5%
Stocks and shares: rate	0.5%	0.5%
Vehicle excise duty		
For cars registered after 1/4/17:		
Graduated system (first-year rate)	-	£0–£2,000 p.a.
Flat rate (after first year; petrol/diesel cars)	-	£140 p.a.
For cars registered 1/3/01–31/3/17:		
Graduated system (first-year rate)	£0–£1,120 p.a.	£0–£1,140 p.a.
Graduated system (after first year)	£0–£515 p.a.	£0–£525 p.a.
Standard rate (cars registered before 1/3/01)	£235 p.a.	£240 p.a.
Small-car rate (cars registered before 1/3/01 with engines up to 1,549cc)	£145 p.a.	£150 p.a.
Heavy goods vehicles (varies according to vehicle type and weight)	£165–£1,850 p.a.	£170–£1,885 p.a.
Landfill tax		
Standard rate	£84.40 per tonne	£86.10 per tonne
Lower rate (inactive waste only)	£2.65 per tonne	£2.70 per tonne
Climate change levy		
Electricity	0.559p/kWh	0.568p/kWh
Natural gas	0.195p/kWh	0.198p/kWh
Liquefied petroleum gas	1.251p/kg	1.272p/kg
Any other taxable commodity	1.526p/kg	1.551p/kg
Business rates		
Rate applicable for low-value properties[k] in:		
England	48.4%	46.7%
Scotland	48.4%	46.6%
Wales	48.6%	49.9%

	2016–17	2017–18[a]
Council tax		
Average band D rate in England	£1,530	Councils to set
Income support / Income-based JSA		
Single (aged 25 or over)	£73.10 p.w.	£73.10 p.w.
Couple (both aged 18 or over)	£114.85 p.w.	£114.85 p.w.
State pension		
Basic state pension, for those who reached SPA before 6/4/16:		
single	£119.30 p.w.	£122.30 p.w.
couple	£190.80 p.w.	£195.60 p.w.
Single-tier pension, for those who reach SPA on or after 6/4/16:		
single	£155.65 p.w.	£159.55 p.w.
Winter fuel payment, for those born on or before 5/5/53:		
and aged under 80	£200 p.a.	£200 p.a.
aged 80 or over	£300 p.a.	£300 p.a.
Pension credit		
Guarantee credit, for those over female SPA:		
single	£155.60 p.w.	£159.35 p.w.
couple	£237.55 p.w.	£243.25 p.w.
Savings credit, for those aged 65 or over who reached SPA before 6/4/16:[l]		
threshold – single	£133.82 p.w.	£137.35 p.w.
– couple	£212.97 p.w.	£218.42 p.w.
maximum – single	£13.07 p.w.	£13.20 p.w.
– couple	£14.75 p.w.	£14.90 p.w.
withdrawal rate	40%	40%
Child benefit		
First child	£20.70 p.w.	£20.70 p.w.
Other children	£13.70 p.w.	£13.70 p.w.
Threshold[m]	£50,000 p.a.	£50,000 p.a.
Withdrawal rate	1% per £100	1% per £100
Child tax credit		
Family element	£545 p.a.	£545 p.a.
Child element	£2,780 p.a.	£2,780 p.a.
Disabled child element	£3,140 p.a.	£3,175 p.a.

	2016–17	2017–18[a]
Working tax credit		
Basic element	£1,960 p.a.	£1,960 p.a.
Couple and lone-parent element	£2,010 p.a.	£2,010 p.a.
30-hour element	£810 p.a.	£810 p.a.
Disabled worker element	£2,970 p.a.	£3,000 p.a.
Childcare element:		
maximum eligible cost for one child	£175 p.w.	£175 p.w.
maximum eligible cost for two or more children	£300 p.w.	£300 p.w.
proportion of eligible costs covered	70%	70%
Features common to child and working tax credits		
Threshold	£6,420 p.a.	£6,420 p.a.
Threshold if entitled to child tax credit only	£16,105 p.a.	£16,105 p.a.
Withdrawal rate	41%	41%
Maternity benefits		
Sure Start maternity grant	£500	£500
Statutory maternity pay:		
weeks 1–6	90% of earnings	90% of earnings
weeks 7–33	£139.58 p.w., or 90% of earnings if lower	£140.98 p.w., or 90% of earnings if lower
Maternity allowance	£139.58 p.w.	£140.98 p.w.

[a] 2017–18 figures take pre-announced values where available and estimated results of standard indexation otherwise.
[b] Employers are not liable for National Insurance contributions on the earnings of employees under the age of 21 or apprentices under the age of 25 below the upper earnings limit.
[c] The rate in parentheses applies to gains on assets other than residential property.
[d] Assumes RPI inflation of 3.2% in the third quarter of 2017 as per Office for Budget Responsibility, Economic and Fiscal Outlook: November 2016.
[e] Assumes the December 2016 average pre-tax price of 20 king-size filter cigarettes (based on series CZMP from table 63 of ONS's consumer price inflation detailed reference tables).
[f] Children aged under 16 are not subject to air passenger duty if they are flying economy class.
[g] If the seat pitch exceeds 1.016 metres (40 inches), the club and first class (standard) rate is the minimum rate that applies in any class of travel.
[h] The higher rate applies to flights aboard aircraft of 20 tonnes and above with fewer than 19 seats.
[i] Land and building transactions tax operates instead of stamp duty land tax in Scotland.
[j] Both residential and non-residential properties are subject to an additional charge for new leaseholds if an annual rent is paid. Above an allowance, residential properties pay 1% of the net present value of the lease, while non-residential properties pay 1–2%.

[k] Applies to all businesses with a rateable value above £12,000 in Wales, below £25,500 in Greater London (rising to £51,000 in 2017–18) and below £18,000 (rising to £51,000 in 2017–18) in the rest of England. In Scotland it applies to businesses with a rateable value between £18,001 and £35,000 (rising to £51,000 in 2017–18) on properties with a rateable value of at least £18,001. An additional 0.5% is payable on properties in the City of London with a 0.13% supplement on higher-value properties. A supplement is also payable on higher-value properties in England (1.3%) and Scotland (2.6%).
[l] Some individuals who reach SPA on or after 6/4/16 may continue to get savings credit if they were in a couple and their partner reached SPA before 6/4/16 and they were receiving savings credit up to 6/4/16.
[m] The high-income child benefit charge applies to all families containing at least one individual with a taxable income in excess of £50,000.

Source:

https://www.gov.uk/government/publications/tax-and-tax-credit-rates-and-thresholds-for-2017-18/tax-and-tax-credit-rates-and-thresholds-for-2017-18
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/572844/proposed-benefit-and-pension-rates-2017-to-2018.pdf
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https://www.gov.uk/government/statistics/council-tax-levels-set-by-local-authorities-in-england-2016-to-2017
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/264602/14._Inheritance_tax_-_nil_rate_band.pdf
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https://www.gov.uk/stamp-duty-land-tax/overview
https://www.gov.uk/sure-start-maternity-grant
https://www.gov.uk/guidance/stamp-duty-land-tax-leasehold-purchases
http://business.wales.gov.uk/running-business/tax-corporation-tax-allowances-business-rates-vat/business-rates-relief-in-wales
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https://www.cityoflondon.gov.uk/business/business-rates/Pages/small-business-rate-relief.aspx
https://www.gov.uk/government/publications/air-passenger-duty-childrens-exemption
https://www.gov.uk/guidance/air-passenger-duty
https://www.gov.uk/government/publications/excise-notice-550-air-passenger-duty/excise-notice-550-air-passenger-duty
https://www.gov.uk/government/publications/heavy-goods-vehicles-and-vehicle-excise-duty-rates-from-april-2014
https://www.gov.uk/government/publications/bank-levy-rate-reduction/bank-levy-rate-reduction
https://www.gov.uk/government/publications/budget-2012
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/571559/autumn_statement_2016_web.pdf
https://www.gov.uk/capital-gains-tax/overview
https://www.gov.uk/guidance/inheritance-tax-residence-nil-rate-band
http://www.gov.scot/Resource/0049/00492244.pdf

For descriptions of the tax and benefit systems, see T. Pope and T. Waters, ‘A survey of the UK tax system’, IFS Briefing Note BN9, 2016, http://www.ifs.org.uk/publications/1711 and A. Hood and A. Norris Keiller, ‘A survey of the UK benefit system’, IFS Briefing Note BN13, 2016, http://www.ifs.org.uk/publications/1718.

For a summary of the main tax measures introduced in each Budget, Pre-Budget Report and Autumn Statement since 1979, see http://www.ifs.org.uk/uploads/publications/ff/budget_measures.xls.

For estimates of the effects of various illustrative tax changes on government revenues, see HMRC Collection, ‘Tax ready reckoner statistics’, https://www.gov.uk/government/collections/tax-expenditures-and-ready-reckoners.

Appendix B. Abbreviations

A&E	accident and emergency
ABV	alcohol by volume
ACE	allowance for corporate equity
AME	annual managed expenditure
APF	Asset Purchase Facility
APMS	Adult Psychiatric Morbidity Survey
BBC	British Broadcasting Corporation
BCC	British Chambers of Commerce
BIS	Department of Business, Innovation and Skills
bn	billion
BoJ	Bank of Japan
bp	basis point
BRIC	Brazil, Russia, India and China
BTEC	Business and Technology Education Council
CDEL	capital departmental expenditure limit
CDS	credit default swap
CEE	Centre for the Economics of Education
CETA	Comprehensive Economic and Trade Agreement
CIPFA	Chartered Institute of Public Finance and Accountancy
cl	centilitre
CNY	Chinese yuan renminbi
CPI	Consumer Prices Index
CPP	Centre for Microeconomic Analysis of Public Policy
CRESR	Centre for Regional Economic and Social Research
CT	corporation tax
CVER	Centre for Vocational Education Research
DCLG	Department for Communities and Local Government
DDA	Disability Discrimination Act
DECC	Department of Energy and Climate Change
DEFRA	Department for Environment, Food and Rural Affairs
DEL	departmental expenditure limit

DfID	Department for International Development
DH	Department of Health
DI	Disability Insurance
DLA	disability living allowance
DMO	Debt Management Office
DWP	Department for Work and Pensions
ECB	European Central Bank
EEA	European Economic Area
EFO	Economic and Fiscal Outlook
EIU	Economist Intelligence Unit
ELSA	English Longitudinal Study of Ageing
EM	emerging market
ESA	employment and support allowance (Chapter 6) European System of National and Regional Accounts (Chapter 4)
ESA10	European System of National and Regional Accounts 2010
ESA95	European System of National and Regional Accounts 1995
ESRC	Economic and Social Research Council
EU	European Union
FDI	foreign direct investment
FOI	Freedom of Information
FPC	Financial Policy Committee
FRAB	Financial Reporting Advisory Board
FRS	Family Resources Survey
FSR	Fiscal Sustainability Report
FTA	free trade agreement
FX	foreign exchange
G7	Group of Seven countries: Canada, France, Germany, Italy, Japan, UK, US
GB	Great Britain
GCSE	General Certificate of Secondary Education
GDP	gross domestic product
H	half
HB	housing benefit
HM	Her Majesty's

HMRC	Her Majesty's Revenue and Customs
HMSO	Her Majesty's Stationery Office
HMT	Her Majesty's Treasury
HSCIC	Health and Social Care Information Centre
IASB	International Accounting Standards Board
IB	incapacity benefit
ICAEW	Institute of Chartered Accountants in England and Wales
IfA	Institute for Apprenticeships
IFRS	International Financial Reporting Standards
IFS	Institute for Fiscal Studies
IMF	International Monetary Fund
IPSAS	International Public Sector Accounting Standards
IPT	insurance premium tax
IT	information technology
JSA	jobseeker's allowance
kg	kilogram
kWh	kilowatt-hour
LA	local authority
LCW	limited capability for work
LCWRA	limited capability for work-related activity
LEL	lower earnings limit
LFS	Labour Force Survey
LH	left-hand
LHS	left-hand side
LIBOR	London Interbank Borrowing Rate
LLP	limited liability partnership
LPC	Low Pay Commission
m	million
MFN	Most Favoured Nation
MoD	Ministry of Defence
MPC	Monetary Policy Committee
NAIRU	non-accelerating inflation rate of unemployment
NAO	National Audit Office

NDA	Nuclear Decommissioning Authority
NHS	National Health Service
NI	National Insurance
NICs	National Insurance contributions
NLW	national living wage
NMW	national minimum wage
NPL	non-performing loan
NQF	National Qualifications Framework
NVQ	National Vocational Qualification
NZ	New Zealand
OBR	Office for Budget Responsibility
OECD	Organisation for Economic Cooperation and Development
Ofsted	Office for Standards in Education, Children's Services and Skills
ONS	Office for National Statistics
p	pence
p.a.	per annum
p.w.	per week
PAYE	Pay As You Earn
PESA	Public Expenditure Statistical Analyses
PFI	Private Finance Initiative
PIP	personal independence payment
PMI	Purchasing Managers' Index
PPPs	purchasing power parities
ppt	percentage point
PSCE	public sector current expenditure
PSGI	public sector gross investment
PSND	public sector net debt
PSNDex	public sector net debt excluding banks
Q	quarter
QE	quantitative easing
R&D	research and development
RDEL	resource departmental expenditure limit
RH	right-hand

RHS	right-hand side
RICS	Royal Institution of Chartered Surveyors
RoATP	Register of Apprenticeship Training Providers
RPI	Retail Prices Index
RRA	rate-of-return allowance
SDA	severe disablement allowance
SFA	Skills Funding Agency
SPA	state pension age
SR	Spending Review
TAXBEN	the IFS tax and benefit microsimulation model
TDEL	total departmental expenditure limit
TFP	total factor productivity
TFS	Term Funding Scheme
UC	universal credit
UEL	upper earnings limit
UK	United Kingdom
UKDA	UK Data Archive
US	United States
VAT	value added tax
WCA	work capability assessment
WGA	Whole of Government Accounts
WRA	work-related activity
WTO	World Trade Organisation

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IFS Report R124
ISBN: 978-1-911102-33-5