

# The IFS Green Budget

## October 2018

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In association with Citi and ICAEW and funded by the Nuffield Foundation  
With additional analysis from Citi and ICAEW

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## The IFS Green Budget: October 2018

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## Foreword from Citi

We are delighted to be collaborating with IFS on the production of the Green Budget this year and going forward at what is such a critical time for the UK economy and the UK public finances. The clear, objective thinking of the IFS research team always brings welcome clarity to complex UK economic issues and is now more needed than ever.

Citi's senior economists have provided two chapters for this year's Green Budget. The first chapter looks at the global environment from two perspectives: a cyclical one in which we present our global forecasts over the next 2–3 years, with particular emphasis on the UK's main trade partners; and a discussion of the future of globalisation, with emphasis on growing trade tensions. The UK economy has positioned itself well to operate in a globalised economy, in particular in the field of services. Any structural reversal of globalisation could constitute a serious challenge, and one that the UK has little control over.

The second chapter looks at another challenge to the UK business model, but one that the UK does have some control over, which is Brexit. We review economic trends since the referendum and the extent to which Brexit has already generated economic challenges, moderated by the acceleration of global growth in the meantime. We then discuss both the short-term UK economic prospects and the longer-term UK economic outlook, although at the time of writing we cannot be conclusive given the uncertainty over the actual structure of Brexit that will not be close to resolution when this year's Green Budget is published.



Andrew Pitt  
Global Head of Citi Research

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# Foreword from ICAEW

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

We are a world-leading professional accountancy body with over 150,000 members in 160 countries. As an organisation and a profession, we stand for high-quality financial information that can be used to inform good decision-making.

This 2018 report comes at a critical time. In the face of relentless demands on the public finances, the strain of maintaining financial discipline is starting to show. With the Office for Budget Responsibility highlighting the potential challenges facing the UK's public finances over the near, medium and longer term, the Chancellor has some difficult choices to make in his forthcoming Budget, both about taxation and spending.

The upcoming autumn Budget will also be the last Budget before the UK's exit from the European Union. The continuing uncertainty over the impact of Brexit, particularly among the UK's business community, is a significant issue. The Chancellor will have to judge carefully what resources should be made available to support businesses during this turbulent period while responding to the many other demands on public spending.

At the same time, the government must also contend with continuing security challenges. It is becoming clear that the UK and its allies face heightened risks from a range of sources. These include the continuing threat from terrorism and emerging risks from cyber-warfare, espionage and conventional conflict.

In this context, ICAEW's two chapters within this year's Green Budget have addressed the government's balance sheet and its defence spending.

In Chapter 6, we analyse the government's balance sheet, with a focus on assets, through the lens of the Whole of Government Accounts (WGA). The WGA is a world-leading development in public sector financial reporting and we trust our analysis will assist HM Treasury in its thinking.

Our second chapter (Chapter 7) is on the subject of defence spending. We reflect on the pattern of defence spending in the context of the UK's security obligations and policies to help illuminate some of the challenges and decisions facing the government.

We hope the Green Budget will be widely used to inform good decision-making and provide detailed and high-quality financial information.



Michael Izza  
Chief Executive Officer of ICAEW

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# Foreword from the Nuffield Foundation

Last year's Green Budget highlighted the fact that the public finances remain under huge pressure, which will continue to be the case well into the 2020s. Alongside this, there is the need to account for additional funding for the NHS announced by the Prime Minister in June, and the continuing uncertainty around the implications of any post-Brexit deal with the EU. In this constrained context, choices and trade-offs around tax and spend facing the Chancellor are as difficult as ever.

It is for this reason that the Green Budget is so important and so valuable. It is an independent, detailed and expert analysis of the challenges facing the Chancellor, the options available to him and the associated trade-offs. Looking well beyond the year-on-year management of the public finances, it considers a wide-ranging number of economic questions, on issues from Brexit and some of its implications for the labour market, to housing, defence and overseas aid.

The Foundation is a long-standing partner of the Institute for Fiscal Studies (IFS) and has funded the Green Budget for many years. We do this to ensure that public debate and social policy decisions are informed by independent evidence. In our five-year strategy, we set out a number of principles – freedom and independence, commitment to quality, connecting perspectives and building trust in evidence – which the Green Budget fully encapsulates.

We can see the value of the Green Budget in the number of people – journalists, economists, civil servants and others – who attend the launch each year to hear first-hand from the IFS team and to engage with the debate that follows. These are not abstract or theoretical conversations – tax and spending decisions have a direct impact on people's lives and on our individual and collective well-being. Independent scrutiny of government is an essential component of our democracy.

Of course, we are not IFS's only partner in producing the Green Budget, and we are grateful that Citi and the ICAEW have contributed expertise and chapters, thus ensuring a comprehensive approach. As ever, we are impressed with the commitment and rigour of the IFS team, and proud to be associated with the Green Budget.



**Tim Gardam**  
Chair, Nuffield Foundation

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# Preface

Welcome to the IFS 2018 Green Budget. In it we discuss some of the issues confronting the Chancellor as he prepares for his third Budget, and the second Autumn Budget of this parliament.

At the core of this year's Green Budget is an analysis of the difficult challenges facing the Chancellor. A decade on from the financial crisis, economic growth remains weak, and the uncertainty surrounding the UK's decision to leave the European Union continues to weigh heavily. At the same time, Prime Minister Theresa May has committed her government to 'ending austerity'. We analyse the pressures on public services, as well as the options and risks for financing new spending through borrowing, tax rises or both.

We also provide topical analysis of several other challenging policy areas. We present a detailed overview of where and how the UK spends its overseas aid budget and how this has changed over time. In keeping with the Conservative party's manifesto commitment to deliver 'homes for all', we analyse the housing market facing young people and explore the policy options open to government. Finally, we consider the impact that Brexit may have on the UK's trade with the EU, and how this will affect the industries, regions and workers of the UK.

We are very pleased to continue our collaboration 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 public sector assets and a chapter analysing the government's spending on defence and security.

This year we are delighted to also collaborate with Citi; we are very grateful to them both for their financial support and for their chapters on the outlook for the UK economy and the global economy, which provide important context for the rest of the Green Budget's analysis.

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. The analysis in Chapter 10, discussing the impact that potential trade barriers between the UK and EU might have on workers, was supported with funding from the 'UK in a Changing Europe' initiative. We are grateful for their support.

Data from the Labour Force Survey (LFS), Living Costs and Food Survey (LCFS), Annual Survey of Hours and Earnings (ASHE), Business Structure Database and HM Land Registry Price Paid data are all Crown Copyright, and are reproduced with permission of the Controller of HMSO and the Queen's Printer for Scotland. The LFS, ASHE and the Business Structure Database are produced by the Office for National Statistics (ONS) and were made available through the UK Data Service. The Land Registry data are licensed under

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the Open Government Licence v3.0. Data from the Family Resources Survey (FRS) were made available by the Department for Work and Pensions. This work uses research data sets that may not exactly reproduce National Statistics aggregates. The data owners and suppliers bear no responsibility for the interpretation of the data in this book.

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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## **Citi**

Citi, the leading global bank, has approximately 200 million customer accounts and does business in more than 160 countries and jurisdictions. Citi provides consumers, corporations, governments and institutions with a broad range of financial products and services, including consumer banking and credit, corporate and investment banking, securities brokerage, transaction services, and wealth management. Citi Research provides full global research coverage across economics and politics as well as analysis of fixed income, FX, commodities and equity markets with staff in 30 countries and through around 70,000 publications per annum.

## **ICAEW**

There are over 1.7 million chartered accountants around the world - talented, ethical and committed professionals who use their expertise to ensure we have a successful and sustainable future.

Over 150,000 of these are ICAEW Chartered Accountants. We train, develop and support each one of them so that they have the knowledge and values to help build local and global economies that are sustainable, accountable and fair.

We've been at the heart of the accountancy profession since we were founded in 1880 to ensure trust in business. We share our knowledge and insight with governments, regulators and business leaders worldwide as we believe accountancy is a force for positive economic change across the world.

ICAEW is a founder member of Chartered Accountants Worldwide and the Global Accounting Alliance.

## **The Nuffield Foundation**

The Nuffield Foundation is an independent charitable trust with a mission to advance educational opportunity and social well-being across the UK. We aim to improve people's lives, and their ability to participate in society, by understanding the social and economic factors that affect their chances in life.

We fund research that aims to improve the design and operation of social policy, particularly in Education, Welfare, and Justice. Our student programmes provide opportunities for young people to develop skills and confidence in quantitative and scientific methods.

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# 1. Global outlook: forward to the past

Christian Schulz (Citi)

## Key findings

- **The UK has adapted well to globalisation opportunities.** Over the past 25 years, it has been a world leader in advanced-economy service provision and some manufacturing industries. The UK imports consumer and industrial goods. UK manufacturing has high shares of imported goods in its value added by international standards, making it especially vulnerable to increased trade barriers.
- **Services trade as a fraction of national income is higher in the UK than in many other major economies and has grown substantially over the last two decades.** This increase has in part been helped by the establishment, extension and deepening of the EU Single Market. The UK has a trade surplus in services of 5.5% of national income, three-quarters of which came from financial and professional services. Trade in these highly regulated industries depends particularly on trust and cooperation between jurisdictions.
- **The UK depends on global capital and migrant labour, and has been successful in attracting both.** It has become a destination of choice for direct investment and internationally mobile workers. The UK depends on both to fund its large current account deficit and to close skills gaps.
- **Working-age immigrants from the EU are substantially more likely to be in paid work than either those born in the UK or immigrants from the rest of the world.** Foreigners accounted for more than half of UK employment growth in the last two decades, but the contribution from EU citizens has recently fallen sharply. Should this persist, the direct effect would be to halve trend UK GDP growth.
- **Even leaving Brexit aside, the business models of many globalised economies are being challenged.** First, as labour cost differentials diminish, the rush to offshore production may have peaked. Second, there is the US-forced reordering of international trade relations, with a risk of sustained alienation between the US and China in particular. Third, there is a rising aversion to immigration in many advanced economies.
- **The global outlook is for strong growth but with growing discrepancies.** The fiscal-stimulus-fuelled US economy is firing on all cylinders and Europe is still growing nicely, but the synchronised upswing of 2017 is past and risks are emerging.

## 1.1 Introduction

Over the last 25 years, the UK has embraced globalisation as well as the establishment, extension and constant deepening of the European Single Market more than many other advanced economies. The UK economy has substantially adjusted its business model to exploit its comparative advantages in a globalised economy. The UK is a world leader in advanced economy service provision and some specific manufacturing industries and has been more successful than most in attracting international capital and workers to produce these goods and services. This successful specialisation drive has coincided with the UK economy mostly outperforming its G7 rivals.

In this context, however, the UK is now facing challenges, including both the UK's vote to leave the EU and challenges to globalisation more generally. This latter group of challenges includes the unprecedented attempt to reorder international trade in the perceived favour of the US by American President Donald Trump and signs that globalisation is slowing due to structural factors but also due to a political backlash against globalisation, especially migration of workers.

In this part of Citi's contribution to the Green Budget, we take a prospective look at the international environment for the UK economy. This includes an assessment of the near-term growth outlook of the UK's major trade partners. But more importantly, it includes a discussion of the UK's vulnerability to a reversal of economic and financial integration, be it at the global level (reversal of globalisation) or at a regional level (in the form of the UK's exit from the European Union). In this chapter, we anatomise the UK's growing exposure to globalisation over the past 25 years. In keeping with the four freedoms of the European Single Market, we scan goods and services trade (Section 1.2) as well as the cross-border exchange of labour and capital (Sections 1.3 and 1.4). We take a stab at potential success factors for post-Brexit Britain (Section 1.5) and provide Citi's global growth forecasts up until 2022 (Section 1.6). Section 1.7 concludes this chapter, while Chapter 2 revisits more specifically the impact of Brexit.

## 1.2 UK specialisation in the global economy

### Lagging in goods trade, leading in services trade

The UK is one of the leading trading nations in the world. According to OECD data, in 2017 the UK accounted for 3.6% of global exports (fifth after China, the US, Germany and Japan) and 3.8% of global imports (joint fourth with France, ahead of Japan).<sup>1</sup> However, adjusted for the size of the economy (dividing the sum of exports and imports by GDP), the UK becomes more middle of the road among advanced economies. On that measure, UK trade intensity was 58% of GDP in 2016, lower than in Germany (84%) or South Korea (77%), but still double that in the US (27%) or Japan (31%).

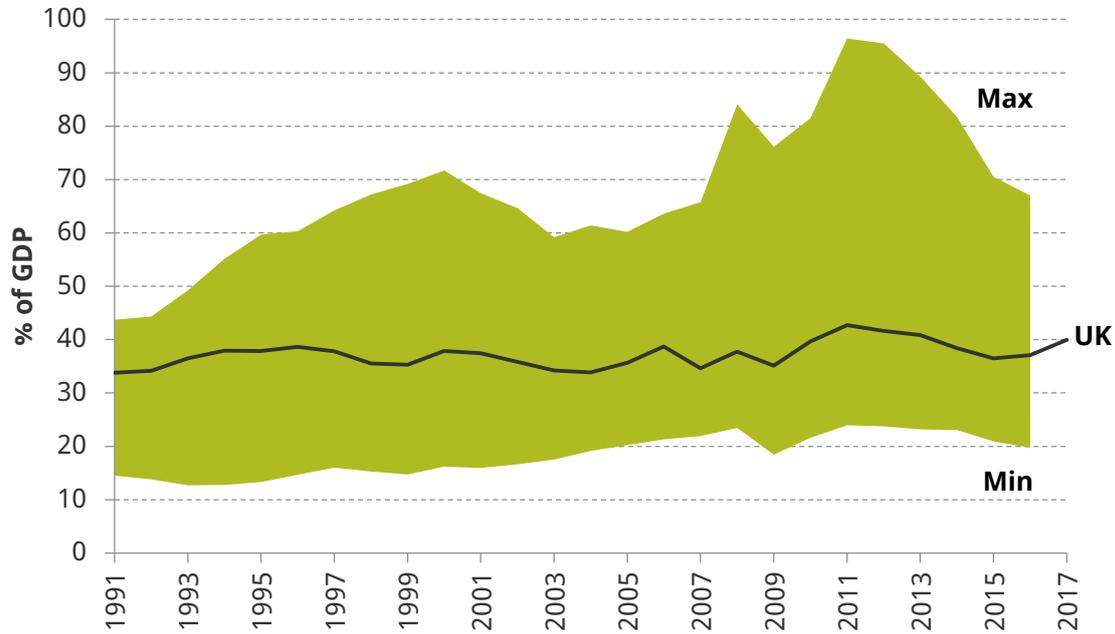
UK trade intensity differs markedly between the goods sector and the services sector. *Goods* exports and imports equalled 40% of GDP, which Figure 1.1 shows is average among the largest industrialised economies. In 2016, for example, Germany's goods trade intensity was 67% of GDP. Over the past 25 years, the UK has fallen further behind the global leaders on this measure.

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<sup>1</sup> <http://www.oecd.org/eco/outlook/economic-outlook/>.

By contrast, Britain leads the large economies in *services* trade intensity. As Figure 1.2 shows, it has been top of the pack in every year but one since 1991. In addition, the UK has grown its involvement more than any other industrialised economy. According to OECD

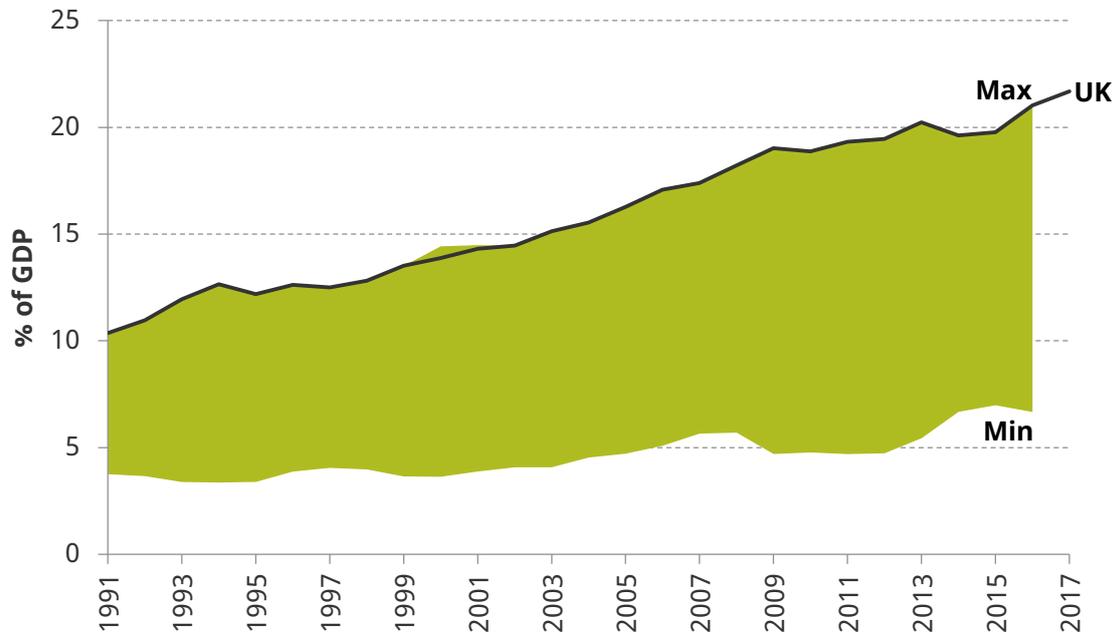
**Figure 1.1. Goods trade intensity of selected large OECD economies**



Note: Exports + Imports divided by GDP. UK, US, Germany, France, Italy, Spain, Canada, Japan and South Korea.

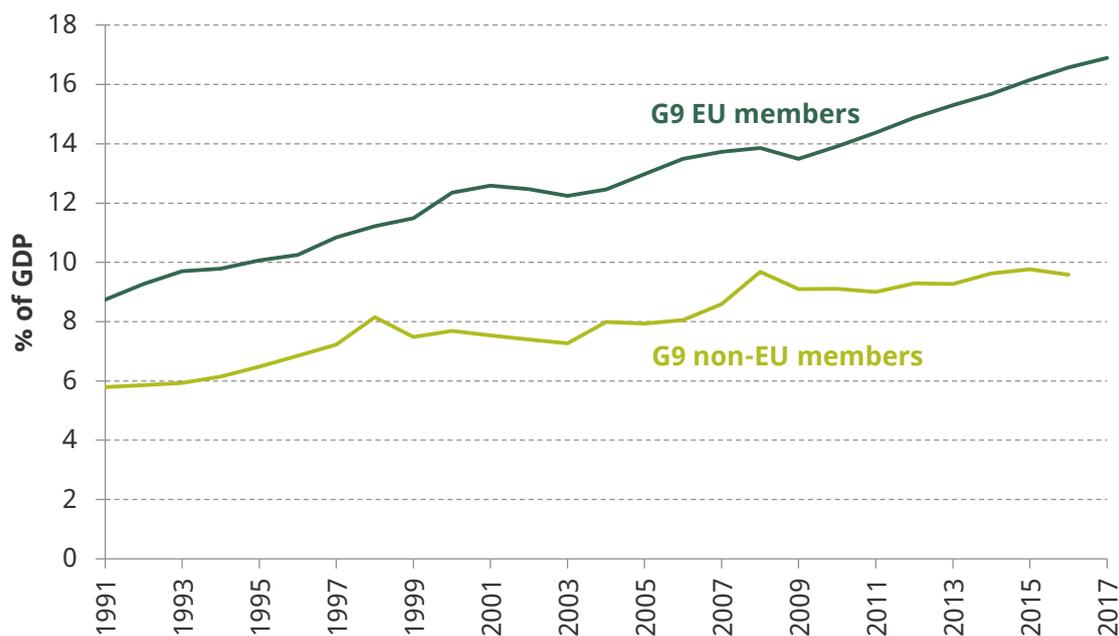
Source: OECD and Citi Research.

**Figure 1.2. Services trade intensity of selected large OECD economies**



Note: Exports + Imports divided by GDP. UK, US, Germany, France, Italy, Spain, Canada, Japan and South Korea.

Source: OECD and Citi Research.

**Figure 1.3. Services trade intensity of G9 economies, by EU membership**

Note: Exports + Imports divided by GDP. UK, US, Germany, France, Italy, Spain, Canada, Japan and South Korea.

Source: OECD and Citi Research.

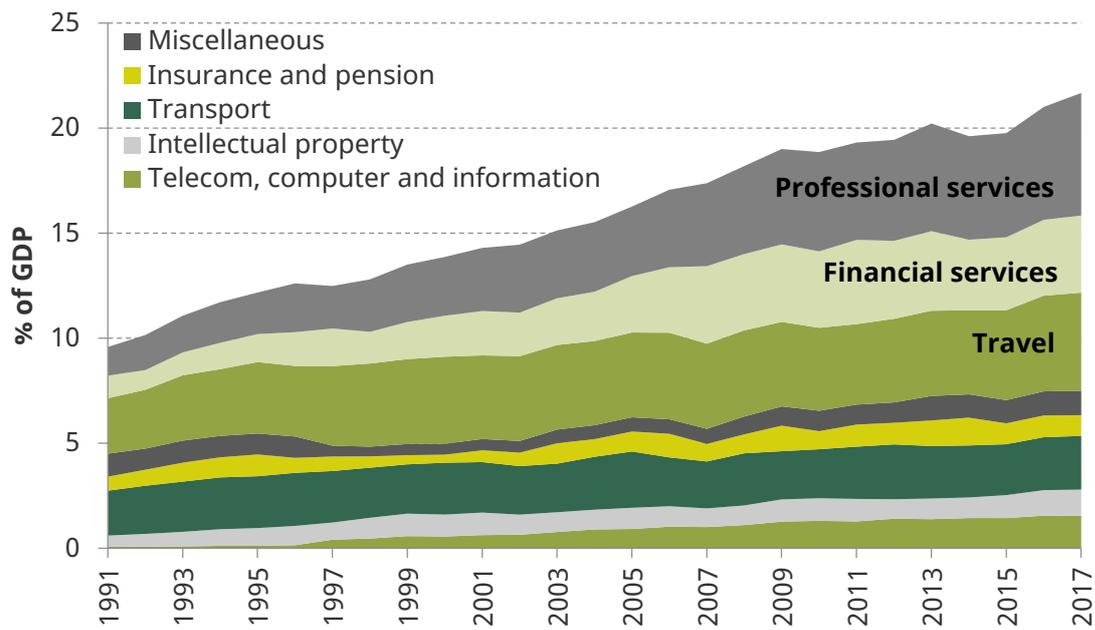
data, in 2017 the sum of UK services exports and imports as a share of GDP was 22%, ahead of France (18%) and Germany (17%). And contrary to the stable trade intensity in goods trade, the UK's trade intensity in services has almost constantly risen over the last 25 years, from just over 10% of GDP in 1991.

At least in part, this is due to the successful EU Single Market: as Figure 1.3 shows, the services trade intensity of non-EU large economies such as the US (7% of GDP in 2016), Canada (12% in 2017), Japan (7% in 2016) and Korea (12% in 2017) is notably lower than that of EU members and has grown more slowly than among large EU economies including the UK. While the level of services trade integration might just be a result of geographical proximity (and sharing a time zone), the dynamics also highlight the unique integration of services trade in the EU's Single Market. This will become important in Chapter 2, when we discuss the potential long-term consequences of Brexit.

### Specialisation in financial and professional services

As Figure 1.4 shows, the majority of growth in services trade intensity has come from financial and professional services activity. Trade in these sectors has quadrupled, from 2.4% of GDP in 1991 to 9.5% of GDP in 2017. In addition, travel and franchising services have also contributed significantly to the intensification of services trade. The UK clearly has developed a significant competitive advantage in service provision, which shows in the fact that it ran a 5.5% of GDP services trade surplus in 2017, three-quarters of which came from financial and professional services. This specialisation is important in our context because it has occurred in relatively highly regulated sectors (contrary to, say, tourism or transport services) and is thus more dependent on cooperation between different jurisdictions and vulnerable to the deterioration thereof.

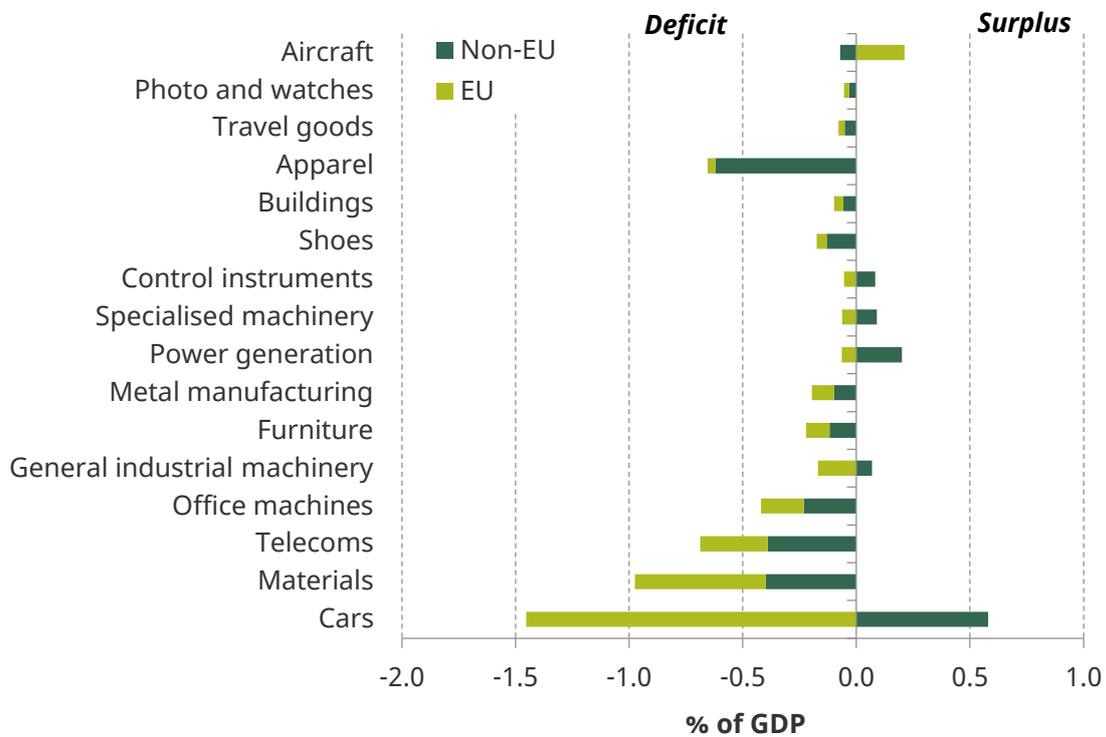
**Figure 1.4. UK trade intensity by service sector**



Note: Exports + Imports divided by GDP.

Source: ONS and Citi Research.

**Figure 1.5. UK trade balance by manufacturing sector, 2015–17 average**



Source: ONS and Citi Research.

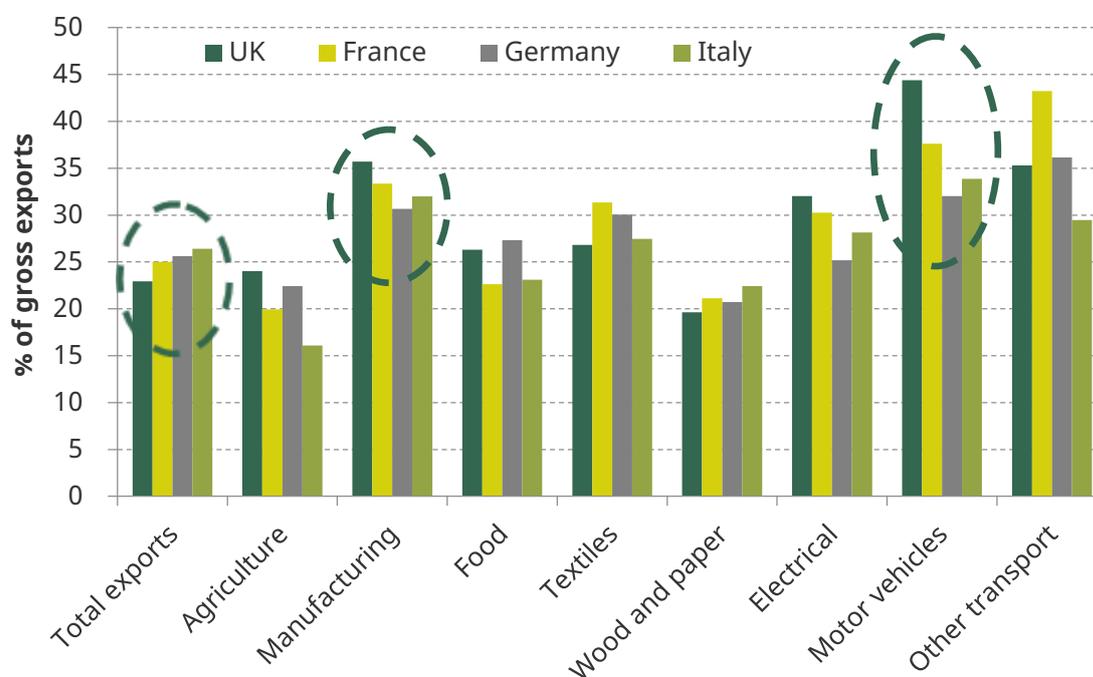
### Specialisation in goods production

Naturally, specialisation has not only occurred within the services sector. Despite the general UK underperformance relative to other major economies in the goods production sector, there are pockets of highly competitive manufacturing industry in Britain. Trade surpluses are not comprehensive evidence of competitiveness (export growth and market shares, for example, are also important), but they can give some guidance: the UK remains a powerhouse in aircraft production, with a 0.2% of GDP trade surplus in the sector with the EU (more than offsetting the 0.1% of GDP deficit with the rest of the world), as well as in power generation devices (see Figure 1.5). In highly specialised machinery and control instruments, Britain has also produced more than it needed at home in recent years. In addition, Britain now runs a sizeable surplus in car exports with non-EU economies (0.6% of GDP on average over 2015–17, up from only 0.1% of GDP 20 years ago) as it seems to have become a hub for EU-based and other car manufacturers exporting to the rest of the world.

### UK manufacturing has deeper international supply chains than rivals

In today’s globalised economy, trade in finished goods is no longer the key yardstick of integration; the integration of supply chains also matters. In some parts of manufacturing, production processes span several countries, sometimes several times, with lorries becoming mobile warehouses of unfinished stock in just-in-time delivery processes. Across developed economies, according to the OECD TiVA (trade in value added) database, the total foreign value-added share in gross exports rose from 18% to 24% between 2000 and 2011 (latest data available). In the most highly integrated trading areas, such as the EU-28, it reached 28% in 2011.

**Figure 1.6. Foreign value added as a share of gross exports, 2011**



Note: Exports of goods and services.

Source: OECD and Citi Research.

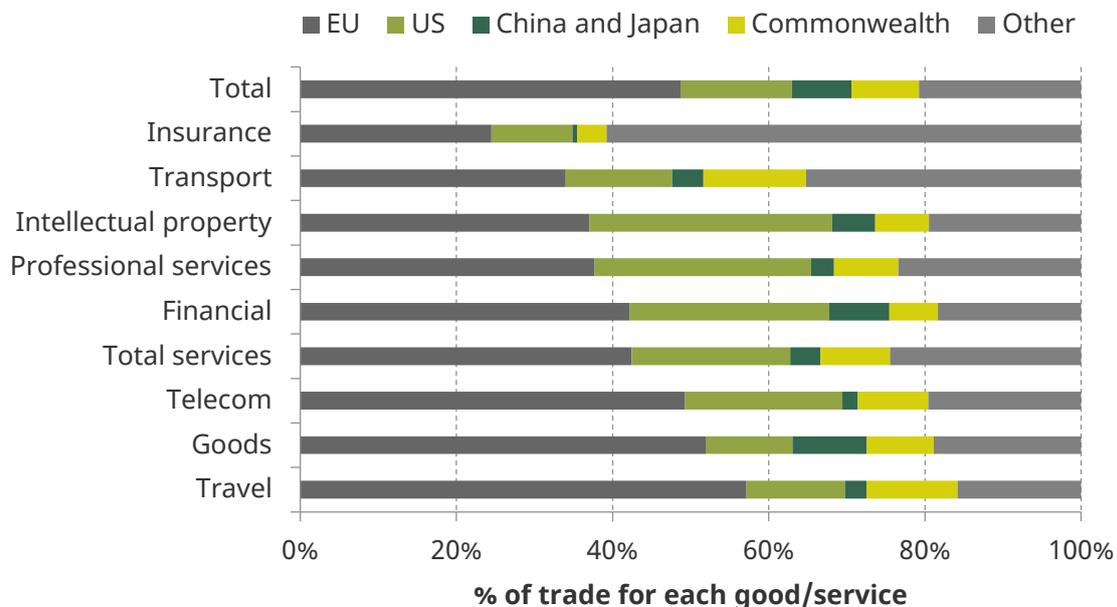
The UK has a lower share of foreign input in its exports (23% in 2011) than key European competitors such as France (25%), Germany (26%) or Italy (26%). That would point to a lower degree of specialisation along the production process (see Figure 1.6). However, that is distorted by the UK's high share of services exports, where supply chains are less long and integrated than in goods production. Focusing on manufacturing only, the picture changes: 36% of the value added in UK gross exports in 2011 was foreign (OECD average 31%), rising to 44% in car manufacturing (compared with only 32% in Germany and 33% on the OECD average). These above-average degrees of specialisation within the European manufacturing value chain make the UK more vulnerable to new and higher customs and regulatory borders, whether that is within the EU or beyond. The exposure of different industries and workers to increased trade barriers between the UK and the EU is discussed in Chapter 10.

### EU and US remain most important UK trade partners

A static view of UK trade relations yields a clear picture of which part of the world matters most for UK trade. In 2017, the EU was the destination of 44% of UK goods and services exports and the source of 53% of UK imports. The US accounted for 18% of exports and 11% of imports, China for 4% of exports and 7% of imports and the rest of the world for 35% of exports and 29% of imports. The shares in trade can vary widely by sector: the EU accounts for more than half of the UK's goods and travel services trade, but less than a quarter of the (admittedly relatively small) insurance services trade (see Figure 1.7).

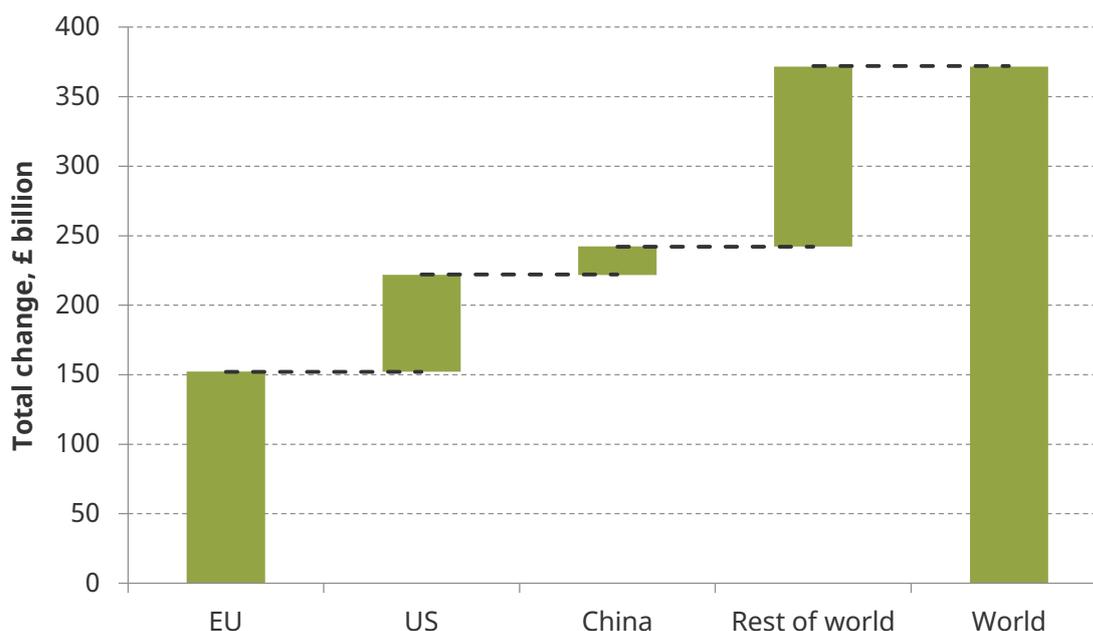
Over time, the EU has become a bit less dominant in UK trade. The share of exports to the EU in total UK exports has shrunk from 55% in 1999 to 44% in 2017, while the share of exports to the US was stable at 18% and that of exports to China quadrupled from 1% to 4%. The rest of the world was up 5 percentage points (ppts) over this period to 31%. On

**Figure 1.7. UK trade partners by good or service, 2017**



Note: Exports + Imports. Countries that are members of both the EU and the Commonwealth are included in the EU total.

Source: ONS and Citi Research.

**Figure 1.8. Change in UK nominal exports of goods and services, 1999–2017**

Source: ONS and Citi Research.

the import side, shares have been more stable, with the EU and the US merely losing 2–3ppt shares in UK imports each (to 53% and 11%, respectively, in 2017) to the benefit of China (7% of UK imports in 2017), while the rest of the world’s share was unchanged (at 26%).

Although they underperformed the UK’s emerging export markets in terms of absolute economic growth, advanced economies still made a greater contribution to UK trade growth than their fast-growing rivals. EU markets accounted for 41% of UK export growth from 1999 to 2017, the US for 19% (see Figure 1.8). On the import side, the EU accounted for 55% of the growth and the US for 9%, so in total almost two-thirds of UK import growth. In both cases, the contribution to trade growth for the UK was roughly in line with each economy’s respective trade shares. Advanced economies, in particular the EU, made up for their growth underperformance relative to emerging markets with their greater trade intensification.

### 1.3 Labour and immigration

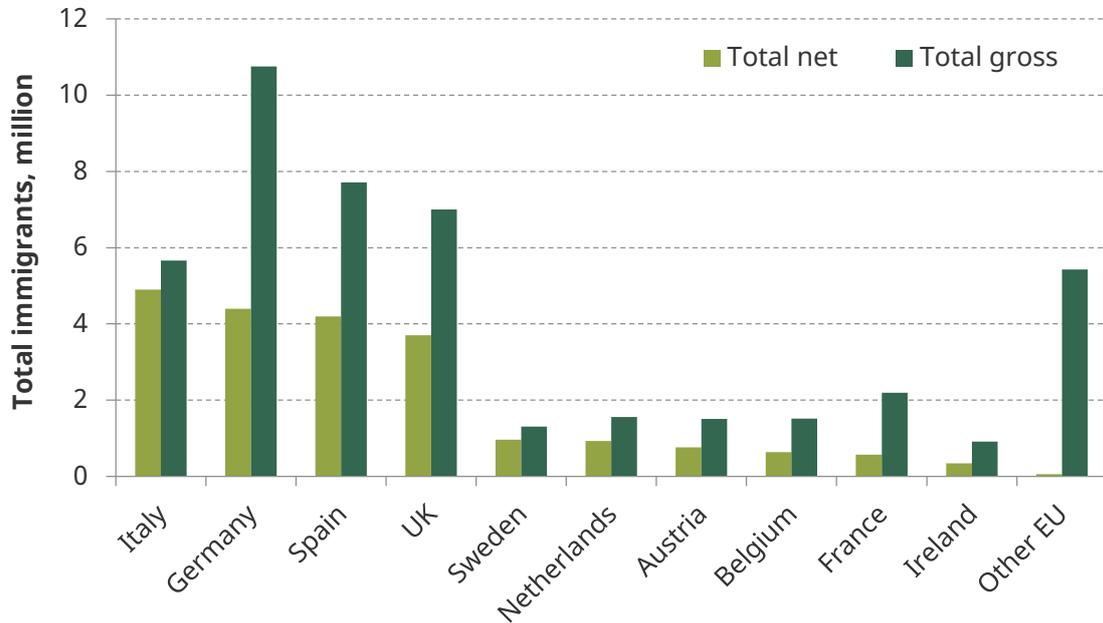
As mentioned in the introduction, economic exchange between countries does not only consist of trading the output of the production process. The freedom of production inputs (capital and labour) to move across borders to increase their effectiveness is equally conducive to exploiting the advantages of globalisation. Here, the UK has traditionally been a successful player as well.

#### Popular immigration destination, especially for EU citizens

The UK’s flexible labour market, its welcoming environment for immigrants and its accessible language have made it one of the most successful advanced economies in attracting foreign talent. According to Eurostat data, a net 3.7 million foreign passport

holders immigrated to the UK in 2000–16 (in gross terms, 7.0 million), one of the highest numbers in the EU (see Figure 1.9).

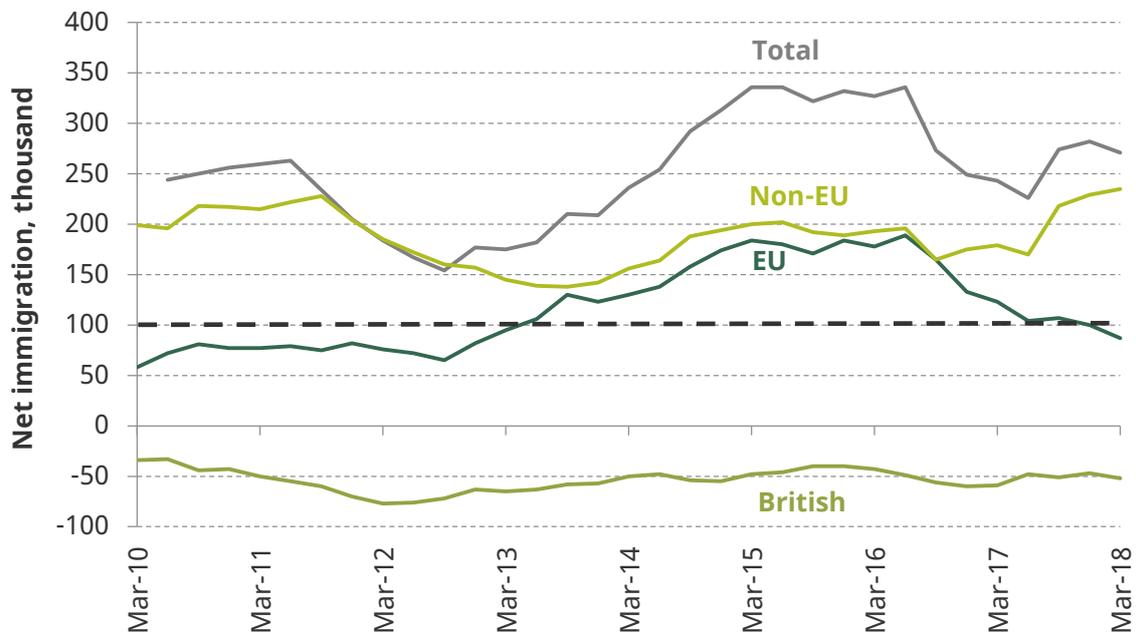
**Figure 1.9. Total immigration to EU countries between 2000 and 2016**



Note: Immigration (net: minus emigration) other than holders of reporting country citizenship.

Source: Eurostat and Citi Research.

**Figure 1.10. UK net immigration (total over four quarters)**



Note: Immigration less emigration. In 2010, the government announced a target to have net total migration in the 'tens of thousands'.

Source: ONS and Citi Research.

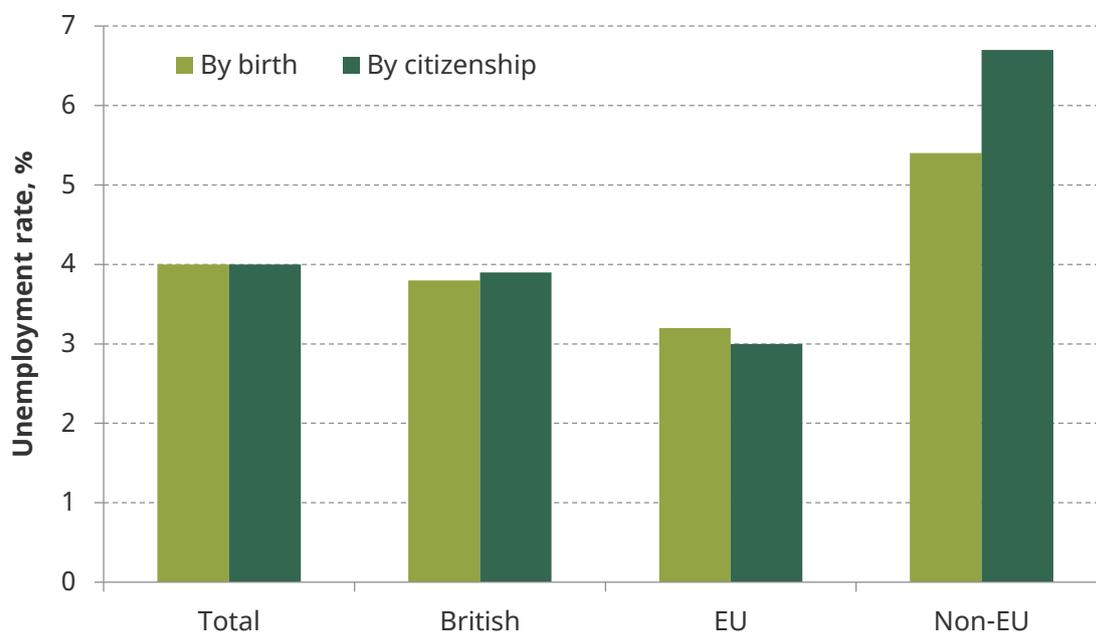
Most of the UK’s immigration over this period came from outside the EU (see Figure 1.10). However, for a period following the eurozone debt crisis, immigration from other EU member states was as high as that from the rest of the world. Since the EU referendum and the fall in the value of the pound relative to the euro, immigration from EU countries has fallen, even though it still remains above the pre-euro-crisis levels, at least until end-2017. By contrast, immigration from non-EU states has increased the most recently, meaning total net immigration has not dropped by very much and remains well above the government’s official target of ‘the tens of thousands’.

### Immigrants from the EU more likely to work than UK natives

Immigrants have strongly benefited the UK economy, accounting for more than half of the employment growth in recent years and alleviating skills shortages across the economy. Many studies find positive effects of immigration on the economy on an aggregate, per-capita and per-worker basis, though the associated distributional effects of this may be uneven and side effects have to be assessed. For example, Citi’s latest GPS (Global Perspectives and Solutions) report<sup>2</sup> found that while migration added 8% to UK population between 1990 and 2016, it drove a 16.6% increase in GDP. The recent report by the UK’s Migration Advisory Committee also found a positive impact of immigration on productivity and innovation, especially from highly skilled workers.<sup>3</sup>

However, some immigrant groups have been more successful in the economy than others, with (non-UK) EU citizens outperforming not just other immigrants but also

**Figure 1.11. UK unemployment rate by birthplace and citizenship, second quarter of 2018**



Note: Citizenship as stated by respondents in the Labour Force Survey.

Source: ONS and Citi Research.

<sup>2</sup> *Migration and the Economy: Economic Realities, Social Impacts and Political Choices*, Citi GPS (Global Perspectives and Solutions), September 2018.

<sup>3</sup> Migration Advisory Committee, *EEA Migration in the UK: Final Report*, September 2018.

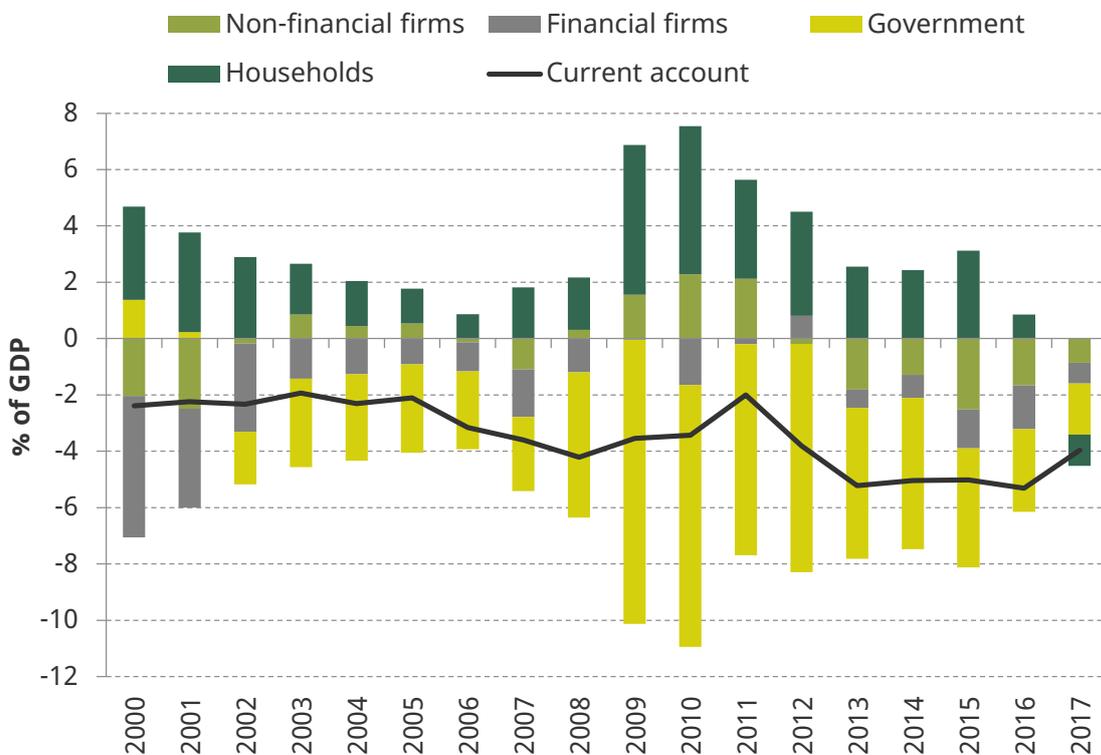
natives on four measures. First, EU citizens took up about half of all newly created jobs in the period from 2014 up until the EU referendum, while non-EU foreigners struggled to enter the labour market in this period. Second, EU citizens in the UK have been more available to the labour market, with an activity rate of 83% among 15- to 64-year-olds in 2017 according to Eurostat data, well above that of non-EU citizens' activity rate (66%) and even above that of British citizens (78%). Third, EU citizens are more likely to hold a job, with an employment rate of 80% in 2017 according to Eurostat, above the 74% employment rate of UK citizens and the 61% employment rate of non-EU citizens. The UK has the highest employment rate of non-native EU citizens among EU-15 member states. And fourth, as a result, the unemployment rate of EU citizens at 3.0% is lower than British citizens' at 3.9% and non-EU citizens' at 6.7% (see Figure 1.11) according to ONS data. At least for British and EU citizens, these results do not differ much when looking at birthplace rather than citizenship.

## 1.4 A hub for global investment

The UK has long depended on international investors to fund firms' and government's spending and investment and, since last year, even household spending. All domestic sectors of the economy have become net borrowers as of 2017 (see Figure 1.12).

As the UK became a destination of choice for increasingly globalised investment flows, this dependence on foreign funding was not a problem. London's role as a global financial centre, its track record of above-average growth for advanced economies, strong property rights and solid public finances secured sustained funding inflows. Conversely, depending

**Figure 1.12. UK net lending/borrowing by sector**



Source: ONS and Citi Research.

on foreign capital inflows has become a typical feature of the UK economy: the last current account surplus in a single year dates back to 1983!

In 2017, the current account deficit amounted to 3.9% of GDP, down from 5.2% in 2016 and the lowest since 2012. The current account deficit is made up of three components: the goods and services account (which measures the overall trade balance), the primary income account (which includes income from investments abroad as well as payments to UK residents employed overseas) and the secondary income account (which covers transfers between countries, such as overseas aid or payments to the EU). In 2017, the overall current account deficit combined:

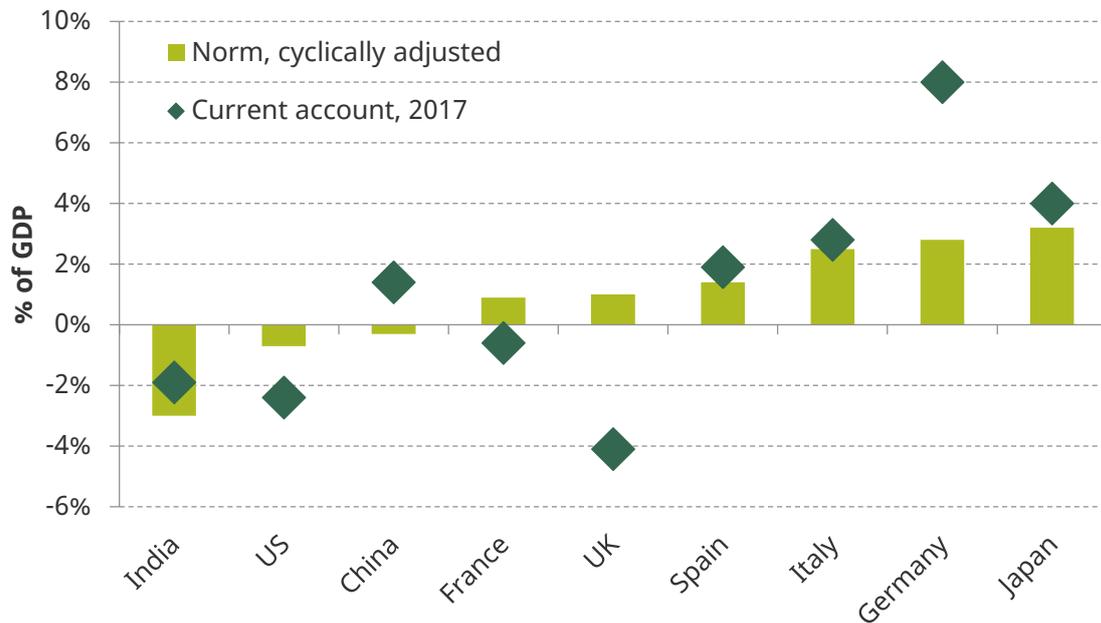
- A **trade deficit** on the goods and services account of 1.3% of GDP, which in turn was the result of a goods trade deficit of 6.7% of GDP and a services trade surplus of 5.5% of GDP.
- A **primary income deficit** of 1.6% of GDP. This largely results from higher outflows of income on foreign investors' UK assets than inflows of incomes on UK investments abroad. It reflects both a difference in the amount of underlying assets (foreigners owned more UK assets than UK residents owned foreign assets – a negative international investment position) of £165 billion or 8.1% of GDP at the end of 2017 and a difference in the rates of return on these assets (rates of return on UK investments abroad, at 2.0% in 2017, were lower than foreign investors' returns on UK assets at 2.3%). The negative international investment position is set to get bigger, rising to £262 billion, or 13% of GDP, in 2018 Q1.
- A **secondary income deficit** of 1.0% of GDP, about half of which reflects net payments to EU institutions (£9 billion in 2017) and the rest other government transfers (such as development aid) and non-government transfers (such as net remittances).

However, large current account deficits can also become serious macroeconomic vulnerabilities, as some emerging economies are currently reminding us. The size and persistence of the UK's current account deficit has become a concern for many economists, even though it has so far not triggered any violent adjustment. While the UK is able to sustain a less favourable current account balance than other G7 countries, as long as it maintains its higher trend growth rate and a less worrying demographic outlook, the negative net international investment position as well as declining oil and gas reserves should be set against that. The IMF calculates that, based on these structural factors, the UK should actually be running a current account surplus of 1.0% of GDP through the cycle, similar to France or Spain.<sup>4</sup> That means the UK would have to adjust its current account balance by 5% of GDP, the largest necessary upward adjustment of any of the economies analysed by the IMF (see Figure 1.13). In addition, the UK's norm current account surplus may have risen further since the EU referendum due to lower expected growth and less immigration more than offsetting any potential savings on EU budget contributions.

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<sup>4</sup> See International Monetary Fund, 'EBA [external balance assessment] estimates: analysis of 2017 current accounts and real effective exchange rates', <https://www.imf.org/external/np/res/eba/data/EBAEstimates-2017.pdf>.

**Figure 1.13. Cyclically adjusted norm and actual current account balance as % of GDP for selected countries, 2017**



Source: IMF and Citi Research.

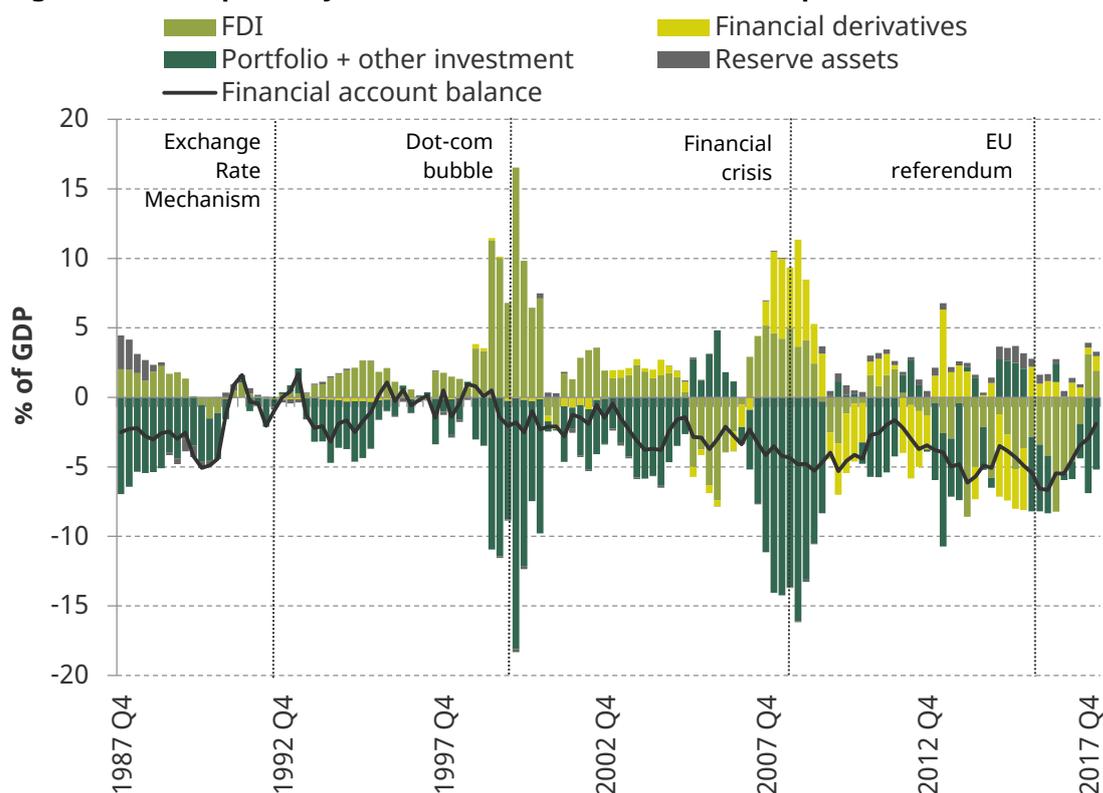
### How does the UK fund its current account deficit?

Broadly speaking, the position of the current account should be balanced by the financial account, which covers international flows of capital. There are several different types of capital flow, including foreign direct investment (where the investor has some control over the enterprise they are investing in), portfolio or loans investments (financial investments such as buying shares or bonds where the investor does not get any control) and reserve assets (which are foreign financial assets owned by monetary policy authorities – in the UK, the Bank of England).

In 2017, the UK financial account saw inflows of 3.0% of GDP, made up of the following components:

- A 3.1% of GDP net outflow of **foreign direct investment (FDI)**. Net FDI outflows are unusual in the UK: last year's was the first since 2011 and the depth of the global financial crisis. From 2012 to 2016, the UK had experienced inflows, peaking at 8.2% of GDP in 2016. FDI outflows are not always associated with crises, however. They are often accompanied by inflows of other types of investment; for example, during boom periods in equity and bond markets, the City of London collects funds from around the world and channels them back into investments abroad. Last year's outflow could, however, reflect current and expected growth differentials between the UK and the rest of the world, which have reversed since 2016 due to the EU referendum.
- An inflow of **portfolio investment** (mostly into debt securities of UK residents) and **other investment** (mostly into loans to UK residents) worth 6.9% of GDP. Data on these categories and their composition are very volatile, but most of the net inflows have been into long-term debt securities (portfolio investment), often fluctuating with inflows via loans (other investment).

**Figure 1.14. UK quarterly net financial account and net component flows**



Note: Net foreign direct investment (FDI, mainly purchases of equity stakes  $\geq 10\%$ ); net portfolio and other investment (mainly purchases of equity stakes  $< 10\%$ , debt securities and loans); net financial derivatives (financial instruments dependent on other assets); net reserve assets. All quarterly as a percentage of nominal GDP.

Source: ONS and Citi Research.

- A small outflow of **net reserves** worth 0.3% of GDP. Outflows of reserves have been consistently 0–1% of GDP per year since the financial crisis.

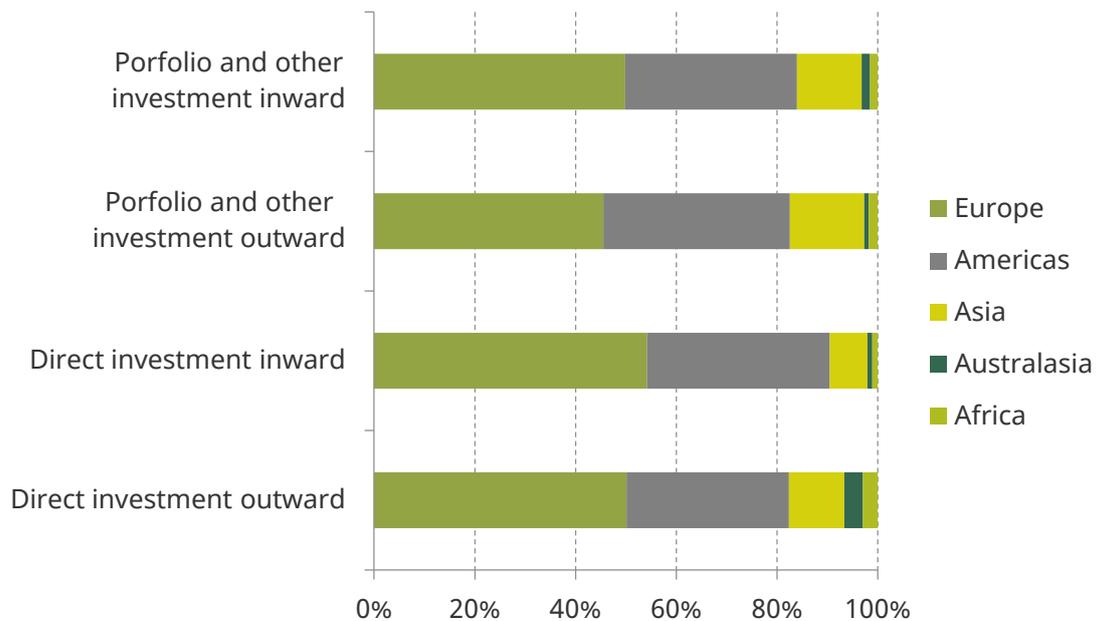
Where does the funding come from? Advanced economy sources, especially the EU and the US, dominate investment from and into the UK, both in terms of direct investment and portfolio investment.<sup>5</sup> For example, EU and other European economies currently account for more than half of the UK’s inward and outward stock of foreign direct investment and nearly half of the portfolio (and other) investment as well; the Americas account for another third in total (see Figure 1.15).

However, there have been notable shifts between regions in the funding flows, in particular the destination of UK foreign direct investment. UK foreign investment into Asia accounted for only 4% of British FDI stocks in 2000, but has risen to an 11% share since 2010. Over the same period, the Americas’ share has risen by 4ppts to 32%, while Europe’s has fallen by 13ppts to 50%. By contrast, the shares in inward FDI were more or less stable over this period. On the portfolio and other investment side, the share of Europe in the UK outward stock of investment has dropped from 56% in 2000 to 46% in 2016, matched by an

<sup>5</sup> We combine portfolio and other investment, which is mostly loans, as the two often replace each other from one quarter to the next and we can reduce the volatility in the data by netting them.

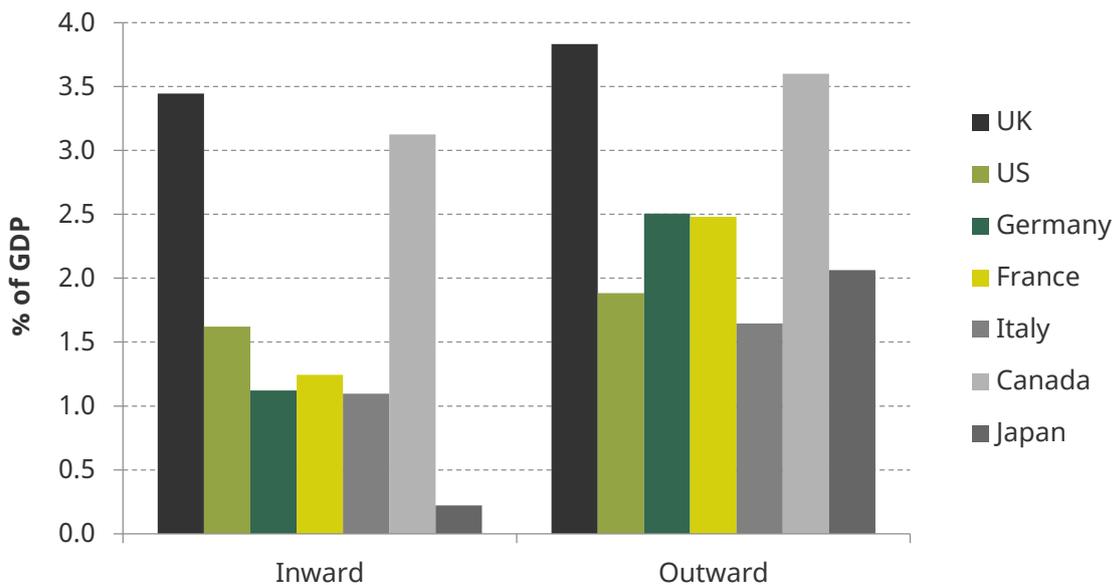
equivalent rise from 27% to 37% for the Americas, the rest being stable. On the liability side, Europe's share in UK inward investments has been roughly stable, but the Americas gained 8ppts mostly at the expense of Asian investors. Overall, it is clear that Europe has become a less important destination for UK outward investment (while the US and Asia have gained), while the UK continues to depend on European investors for incoming investments.

**Figure 1.15. UK stock of inward and outward investment in 2016, by region**



Source: ONS and Citi Research.

**Figure 1.16. Average foreign direct investment between 2005 and 2017 as a share of GDP for the G7 economies**



Source: OECD and Citi Research.

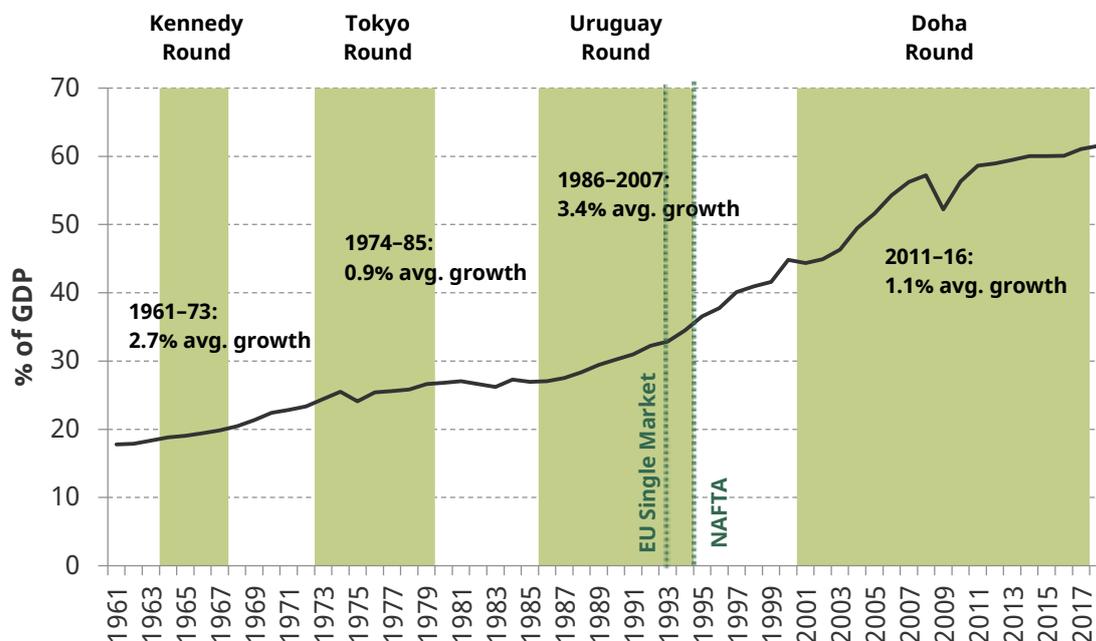
Finally, the UK has been more successful than other OECD economies in attracting foreign direct investment. According to OECD data, over the past 12 years, the UK has on average attracted investment worth 3.4% of GDP per year, more than double or even three times the amount relative to GDP in its major European rivals, the US and Japan. Only Canada in the G7 comes close to the UK on this statistic (see Figure 1.16). The UK has also been more active than its G7 rivals in terms of outward FDI over this period, but there the lead is not quite as impressive (and likely the result of the UK’s role as Europe’s financial centre, channelling European investments elsewhere).

In sum, the UK has immersed itself in globalisation by specialising in some outputs such as some parts of **manufacturing** and **services**, but also by drawing more than rival economies on global production factors in the form of **immigration** of workers and depending on international **investment**. In the following section, we highlight how globalisation is challenged, which affects the UK on all four fronts.

### 1.5 Challenges to the UK’s globalisation model

The UK’s specialisation approach to globalisation has been a key to its economic success over the last 25 years, as demonstrated above. Last year, coinciding with the immediate aftermath of the EU referendum, globalisation looked reinvigorated after a softer period: growth in trade volumes was increasing towards its historical relationship of about twice GDP growth and global trade intensity was rising at rates closer to historical averages. However, that recovery seems to have been short-lived: since the beginning of 2018, volumes have retreated again. The soft patch in global integration is not over (see Figure 1.17) for the time being.

**Figure 1.17. Global trade intensity (exports + imports as a share of GDP)**



Note: The labelled ‘rounds’ were periods of multilateral trade negotiations.

Source: OECD and Citi Research.

However, even if the current soft patch for global trade eventually proves to be partly cyclical, the UK's globalisation success story is facing serious challenges, some potentially transient, others likely permanent: (i) peak globalisation; (ii) trade wars; (iii) populism and opposition to immigration; and (iv) EU exit. Before moving on to global and regional economic forecasts, we highlight how global threats to the free movement of economic outputs and inputs can impact a highly globalised UK economy more than others, before turning to the UK economy and self-imposed threats to globalisation in Chapter 2.

### Peak trade in goods and services: cost differences diminish

As we showed above, globalisation has been driven to a large degree by deepening trade across more economies. There is surely a lot more room for that process to continue, in particular if countries continue to work on lowering barriers to trade. However, to the degree that globalisation was driven by large differentials in production costs, in particular labour costs, these differences might be diminishing.

For example, Citi analysts have pointed out that average wages in China (in yuan terms) in the manufacturing sector have tripled in the last 10 years,<sup>6</sup> while they have risen by less than a third in Germany over the same period according to the German federal statistical office. Non-wage costs are also rising, with industrial leases in China now 10 times higher than in Mexico. It is possible and indeed likely that other, even cheaper locations are taking over as destinations for offshoring, as the attractiveness of China on a pure labour cost motivation wanes. But it is also conceivable in our view that cost-based globalisation growth has reached its peak and could give way to a stronger trend of re-onshoring of production to the places of consumption, in particular the US and Europe. This process might accelerate if the political backlash against globalisation in the West, which manifests itself most clearly in the trade wars of US President Trump against China, continues.

OECD work shows that the integration of global value chains across borders has been receding in the period 2011–16, following two decades of rising integration.<sup>7</sup> Global value chains have been a source of technological knowledge transfer, economies of scale, and cluster economies, all supporting productivity growth. To some degree, this lack of further cross-border integration may be the result of hitting limits of specialisation, but it may also reflect growing concerns about the vulnerability of cross-border supply chains and the lack of prospect for further trade integration.

Outside goods trade, the evidence is less clear-cut. However, there is evidence that cross-border financial exposures have been shrinking since the global financial crisis. The sum of global external assets and liabilities as a share of global GDP is shrinking among advanced economies (from 250% of GDP in 2007 to 200% of GDP in 2016) and has stopped growing among emerging economies. This is likely to be the result of post-crisis deleveraging and also partly a result of regulation to make the global financial system safer by reducing the potential for cross-border contagion. However, it also affects a sustained decline in global financial integration, which could become a worrying trend for global financial centres such as London if it reflects a lack of trust between jurisdictions.

<sup>6</sup> See 'European freight forwarding – tides of change, sea freight facing structural headwinds', <https://www.citivelocity.com/t/r/eppublic/1TDHr>.

<sup>7</sup> OECD, *Cardiac Arrest or Dizzy Spell: Why is World Trade So Weak and What Can Policy Do About It?*, Economic Policy Paper 18, 2016.

## Trade wars as a backlash against globalisation

Even before President Trump started his trade wars this year, there was clear evidence that the appetite for further trade integration had stalled around much of the world. Multilateral trade negotiations made little progress for many years and were – and still are – increasingly being replaced by bilateral and plurilateral trade agreements. These tend to focus less on opening markets for growing categories of consumption and trade such as services, instead emphasising lowering the remaining barriers to goods trade, such as tariffs, and addressing mutual recognition of standards and regulations. Outside these limited advances, there was ample evidence of rising barriers to trade even before Trump.<sup>8</sup>

But with the arrival of US President Trump, the risk of an unravelling of the global trade system has clearly increased dramatically. Having withdrawn the US from the Trans-Pacific Partnership agreement as one of his first acts upon becoming President in January 2017 and launching renegotiations of the US's existing free trade deals such as NAFTA with Canada and Mexico and KORUS with South Korea, Trump focused on domestic tax and entitlement reform in 2017, but then returned to the trade agenda earlier this year. On 1 March, the US administration announced a 25% tariff on steel imports and a 10% tariff on aluminium imports, nominally on the grounds of national security concerns. Trump initially suspended the tariffs for a number of trade partners, including the EU and thus Britain. However, since June, the tariffs have been in place and have led to EU retaliation against the US. Note that the US tariffs automatically also led to second-round barriers, with the EU imposing 'safeguard tariffs' against a surge in steel imports from other economies affected by the US steel tariffs. The EU has joined the World Trade Organisation (WTO) complaints against the US tariffs.

While the US government designed the steel tariffs to please a specific voter constituency at home, attention quickly turned to broader US trade imbalances, in particular with China. In late March this year, the Trump administration announced 25% tariffs on Chinese imports worth \$50 billion per year under section 301 of the US Trade Representative, which eventually came into effect on 6 July and triggered like-for-like Chinese retaliation. In September, the Trump administration announced additional 10% tariffs on a further \$200 billion of imports from China, which will rise to 25% if the Chinese authorities do not address American concerns. China has retaliated with new tariffs on \$60 billion of US goods and has vowed to keep retaliating, but since its imports from the US are far smaller than vice versa, it will increasingly respond asymmetrically – for example, by offsetting US tariffs with domestic cost cuts for firms or devaluing its currency. The impact of these tariffs on global growth could quickly become significant: while Citi Global Economics estimates the 10% US tariff on \$200 billion worth of Chinese imports to reduce global GDP growth by 0.1ppt over a year (current forecast 3.3% in 2019), this could rise to 0.3ppt if the tariff rises to 25%, considering all the linkages, spillovers and spillbacks.<sup>9</sup>

The outcome of the US–China confrontation is open, with some talks still ongoing, and so are the consequences for the UK economy. A slowdown or even recession in the US and China during the trade wars would be detrimental to the global economy and thus to the UK (although Britain is far less exposed to trading with China than, say, Germany). On the

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<sup>8</sup> See Global Trade Alerts, [https://www.globaltradealert.org/global\\_dynamics/day-to\\_0914](https://www.globaltradealert.org/global_dynamics/day-to_0914).

<sup>9</sup> See Citi Research, *Global Economic Outlook & Strategy: Mind the Gaps*, September 2018.

positive side, British companies may be able to benefit in the Chinese markets at the expense of American rivals – for example, in aviation technology – and at the expense of Chinese rivals in the US.<sup>10</sup>

In the long term, if the US (which is joined in a WTO complaint against Chinese trade practices by the EU and Japan) is successful in breaking down Chinese barriers to trade, UK companies may benefit as well. If, however, the trade wars lead to a permanent alienation between a China-dominated sphere and the West, the UK could become even more dependent on advanced economy trade, having just left the largest trade bloc within that space. In this context, it is particularly worrying for Britain after Brexit that the US administration seems to be undermining the WTO by blocking the appointment of officials to complete its dispute resolution bodies.

So far, a direct trade confrontation between the EU (and thus, for now, the UK) and the US has been largely avoided after US President Trump and EU Commission President Jean-Claude Juncker agreed to hold off any further tariffs while the two sides are negotiating lower industrial tariffs, regulatory cooperation, increased EU soybean and liquid natural gas imports from the US, and a reform of the WTO.

However, President Trump has ordered investigations into tariffs on car imports, and an announcement could be imminent. While tariffs would likely be suspended for the EU while trade talks continue, they will hang like a sword of Damocles over European car exports to the US. The UK is Europe's second-largest car exporter to the US after Germany in absolute terms, with 0.3% of GDP worth of exports potentially affected. If a 25% tariff is passed fully on to US consumers and triggers an equivalent volume reduction, US car tariffs could shave up to 0.1% off UK GDP in 2019. This is probably an upper-end estimate, given that the price elasticity of demand may be lower and manufacturers might take some of the hit within their profit margins. However, the effect could also be amplified by other second-round effects such as reduced investment or lower wages.

Improved trade relations with the US remain a potential benefit of leaving the EU for Britain. While the EU and the US have repeatedly failed to agree an ambitious removal of barriers to trade due to economically small but politically highly charged areas such as food regulations and public procurement, the UK might be able to make more concessions and build on its traditional special relationship with the US. The process of negotiating a new access to the US is likely to take time and could well extend beyond President Trump's tenure. But expecting a comprehensive and balanced trade deal with the current US administration requires a great optimism, in our view.

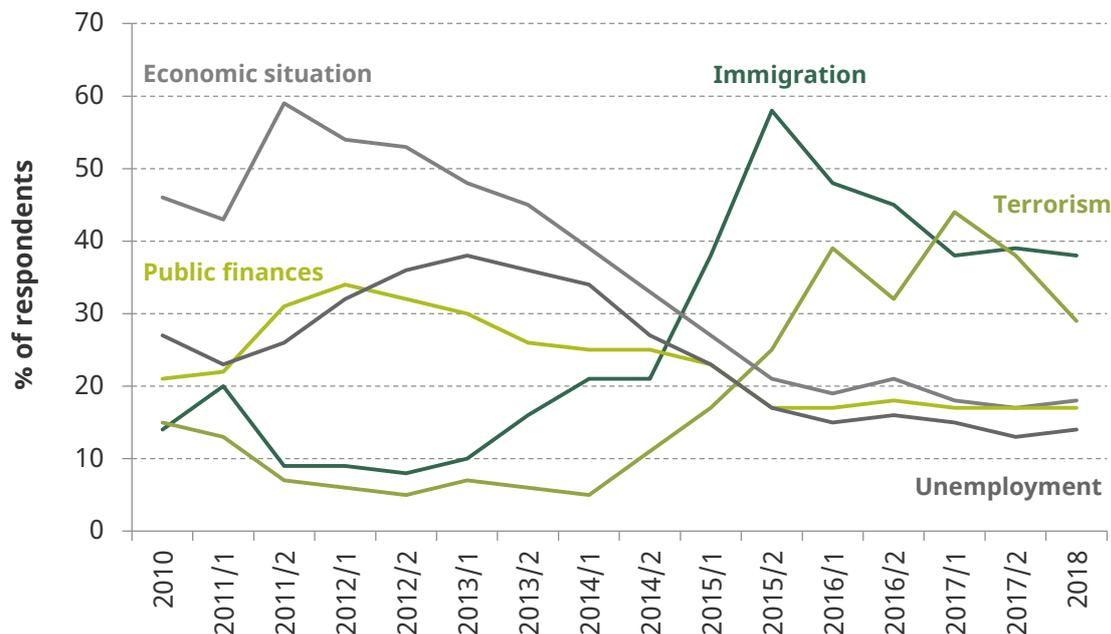
### **Rising aversion to migration**

Not only the further global integration of goods and services trade and the mobility of capital are under threat from structural and policy or political forces, but also the mobility of labour. Especially since the 2015/2016 European refugee crisis, fewer and fewer countries can politically afford a liberal stance on immigration for fear of failing to manage inflows successfully. In this sense, the refugee crisis continues to reverberate and influence attitudes to immigration well beyond European borders, including the UK.

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<sup>10</sup> See Citi Research, *Trump's Trade Wars: EU Risks and Opportunities*, June 2018.

**Figure 1.18. European public opinion on the two most important issues facing the EU at the moment**



Source: EU Commission and Citi Research.

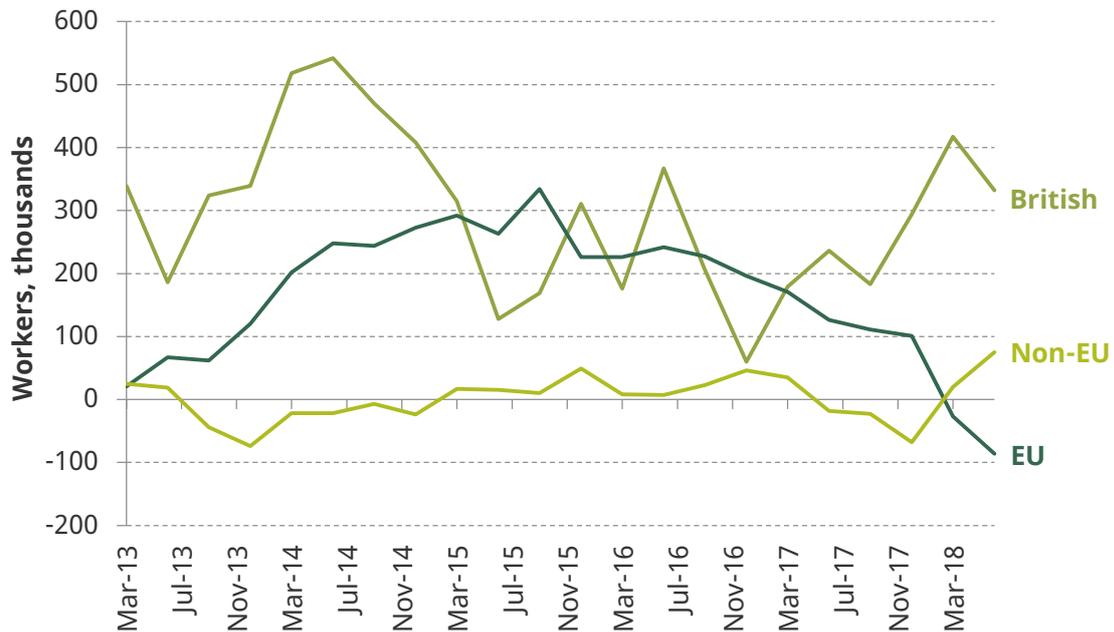
In the UK, many observers agree that a desire to control and reduce immigration was one key driver of the vote to leave the EU just a few months after the peak of the refugee crisis. And although the peak of the refugee crisis passed three years ago and the number of asylum seekers has returned to more normal levels in most countries, Figure 1.18 shows that citizens across the EU cite immigration as the single most important issue facing the continent, with a share of 38% mentioning it as one of the two top issues across the EU and 29% in the UK. These figures are down from peaks of 58% in the EU and 61% in the UK since November 2015, but still very elevated. For comparison, the poll shows that it took seven years for the share of people concerned about the economic situation to drop below 20%, having peaked at a similar level to immigration fear amid the euro crisis in 2011.

Voter aversion to immigration poses an economic challenge for many countries, but especially the UK. With the economy nearing full employment and at least anecdotes of skills shortages becoming more frequent, the case for promoting immigration to the UK is strong from an economic perspective, but likely to prove challenging politically. This could be true especially if the government’s commitment to end EU free mobility of labour leads to greater dependence on migrants from further afield.

**EU citizens leaving the labour market, but not just because of Brexit**

In fact, the immigration tide may have turned already, especially when it comes to EU citizens, and probably not just because of Brexit (see above). This may already be affecting the labour market: as Figure 1.19 shows, year-on-year growth in employment of (non-UK) EU citizens has fallen from 334,000 at the peak in the third quarter of 2015 to solidly negative figures in the first two quarters this year. While the Office for National Statistics

**Figure 1.19. UK employment growth 2013–18, by citizenship (thousands, year-on-year)**



Source: ONS and Citi Research.

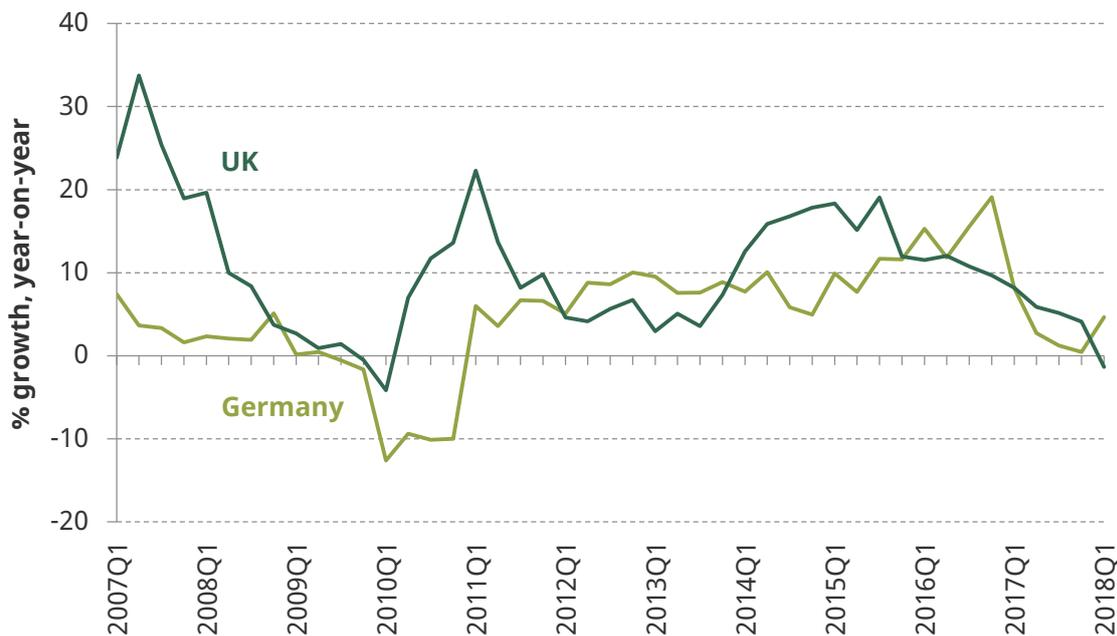
warns against comparing migration and labour market data,<sup>11</sup> the decline in net immigration from the rest of the EU and the net employment decline are unlikely to be coincidence. The EU referendum has raised uncertainty for would-be migrants about the economic outlook of the UK and probably also their personal status as immigrants after Brexit. In addition, sterling's depreciation means pay in the UK looks less attractive in terms of their home currency compared with pay in rival EU economies such as Germany or the Benelux countries.

Brexit and potentially tougher new immigration rules in the UK could hamper the UK's attractiveness just at the point when competition for talent intensifies. For example, EU citizens' mobility may have dropped off more widely as a result of the broadening economic recovery. According to Eurostat data, Germany – despite no currency devaluation or EU exit worries – has also experienced a sharp growth slowdown in the employment of EU citizens (see Figure 1.20). The economic recovery of southern Europe after the eurozone sovereign debt crisis in 2011–12 and the convergence of living standards between the EU's east and west reduce the incentives to leave home even to countries where the pull factor remains strong.

In conclusion, migration in general and from the EU in particular has benefited the UK economy in the past. Foreigners accounted for more than half of UK employment growth in the last two decades. If the newcomers raised productivity as well – as studies suggest – they accounted for an even greater share of UK output growth, boosting per-capita GDP. As competition for talent is becoming harder due to economic convergence, the UK is hampered by Brexit uncertainty and weak sterling (and, in the future, potentially restrictive immigration rules). A lot is at stake: if the 1ppt decline in the contribution of EU

<sup>11</sup> Office for National Statistics, 'UK and non-UK people in the labour market: August 2018', 14 August 2018.

**Figure 1.20. Employment of foreign EU citizens in the UK and Germany (% growth, year-on-year)**



Source: Eurostat and Citi Research.

citizens to UK employment growth since the EU referendum is sustained, it would halve trend UK GDP growth even without any additional impact on productivity.

## 1.6 The current global economic outlook

### Global economy

The trends and risks we have highlighted above constitute potentially severe medium-term headwinds for the UK economy. However, they overlay a cyclical outlook that is, on the whole, reasonably positive, at least in the near term. In this section, we present Citi’s expectations for growth in the UK’s main trade partners: the euro area, the US and China.

Despite policy-induced risks for global trade, Citi Global Economics currently expect global real GDP at market exchange rates to grow by a very solid 3.3% in 2018 and 3.2% 2019, before slowing back towards the long-run average close to 3.0% in the remainder of the forecasting horizon until 2022. In purchasing-power-parity-weighted terms, this equates to 3.9% GDP growth this year and next year, followed by 3.7% in 2019 and 3.8% in 2020. At the global level, these forecasts are in line with the latest IMF forecasts and have been stable for a while. Citi have, however, noted in recent months that incoming data and policy actions present an increasingly heterogeneous picture. Accordingly, whereas our projections for global growth have looked stable throughout the year, there has been greater uncertainty around the central tendency for 2018 as the year has progressed.

Importantly when it comes to the above-mentioned trade wars, the tariffs implemented so far cover only a fraction of global trade. Yet, for some products, the threat of tariffs has already affected trade patterns, such as in agriculture where US exports of soybeans surged in advance of the threat (implemented in fact) of the tariff. Citi research on the

potential costs to the individual economies of the announced (and applied) tariffs estimates that just direct effects would subtract 0.54ppt from China's GDP growth (0.21ppt from \$50 billion tariffs, 0.33ppt from \$200 billion tariffs), 0.57–0.67ppt for Japan (0.27ppt from \$50 billion tariffs, 0.30–0.40ppt from autos) and 0.20ppt for the euro area (from autos tariffs). The effect of just these three shocks in isolation, without considering spillovers, is a slowdown of around 0.15ppt on global growth (although we estimate that a 0.5ppt decline in Chinese growth per se could lower global growth by 0.2ppt), suggesting material downside risk to Citi's estimates ahead. We now turn to the most important advanced economies and emerging markets.

### Eurozone

Last year, the eurozone boomed, at least by its moderate standards, with GDP expanding by 2.5%. Unfortunately, that was short-lived: the first half of 2018 has been marked by a significant slowdown in growth momentum largely due to fading export growth and a weakening in export-oriented manufacturing confidence. The pace of decline in sentiment slowed over the summer and we observe signs of resilience, especially in domestic demand. Notwithstanding (major) risks in individual countries – in particular Italy's political and policy risks – ample monetary policy support from the European Central Bank and a moderately accommodative fiscal stance should sustain output growth at robust levels for the rest of this year and next.

Growing employment and accelerating wage growth, paired with moderate inflation, should support consumer spending, while supply chain bottlenecks, low borrowing costs and a long period of previous underinvestment should trigger a further strong recovery in business investment. On the external side, positive spillover effects from strong US growth, amplified by the depreciation of the dollar against the euro, should help limit the downside from emerging-market wobbles.

On balance, Citi economists currently expect eurozone GDP to rise by 1.9% in 2018 and 1.7% in 2019. We expect growth to stay slightly above the trend corridor of 1–1.5% in subsequent years. With the exception of Italian political and policy developments, the

**Table 1.1. Summary of international GDP forecasts (% growth, year-on-year)**

	2017	2018	2019	2020	2021	2022
<b>World</b>	<b>3.3</b>	<b>3.3</b>	<b>3.2</b>	<b>3.1</b>	<b>3.0</b>	<b>3.0</b>
<b>Advanced economies</b>	<b>2.2</b>	<b>2.3</b>	<b>2.2</b>	<b>1.7</b>	<b>1.7</b>	<b>1.6</b>
US	2.2	2.9	2.8	1.8	1.8	1.8
Eurozone	2.5	1.9	1.7	1.7	1.6	1.6
UK	1.7	1.3	1.5	1.9	2.0	1.9
<b>Emerging markets</b>	<b>4.7</b>	<b>4.7</b>	<b>4.6</b>	<b>4.9</b>	<b>4.7</b>	<b>4.7</b>
China	6.9	6.6	6.4	6.3	5.8	5.6

Note: Advanced economies include the US, Canada, Japan, Australia, New Zealand, the eurozone, the UK, Sweden, Norway and Switzerland. Emerging markets include the rest of the world. Aggregates weigh GDP growth by nominal GDP at current market exchange rates.

Source: Citi Research, *Global Economic Outlook & Strategy: Mind the Gaps*, September 2018.

main risks for eurozone growth are external. Large EU economies such as Germany and Italy are more exposed to international (goods) trade than the US, Japan or indeed the UK and thus more vulnerable to fluctuations in demand in other parts of the world.

Citi's eurozone growth estimates are currently a bit below those of other forecasters. The IMF's latest projection is for 2.2% GDP growth this year and 1.9% in 2019, OECD's was even higher at 2.2% in 2018 and 2.1% in 2019. Finally, the Bank of England forecast 2¼% growth in the eurozone in 2018 and 1¾% in 2019.

## US

Citi economists expect the US economy to expand by a very strong 2.9% this year, egged on by wholesale tax cuts and infrastructure investment. Fiscal stimulus and buoyant equity markets should continue to boost growth through the rest of 2018 and 2019 and push the unemployment rate further below 4%. Other forecasters are similarly optimistic on the short-term prospects for the US economy. The Bank of England expects 3.0% GDP growth this year, followed by 2.5% in 2019. The IMF expects 2.9% in 2018 and 2.8% in 2019, the OECD the same. Inflation remains subdued, but we expect three more 25 basis point policy rate hikes from the Federal Reserve to a terminal Federal Funds rate of 2.75–3.00% for this cycle in mid 2019.

2020 could be an inflection point for the US economy, where the impact of the fiscal stimulus fades and tighter monetary policy may start to bite. We (and most other forecasters like the Bank of England) expect GDP growth to converge with its trend rate of just under 2%. The big risk for the US and the global economy is that just at the point where the fiscal stimulus fades, monetary policy proves too tight. In that case, the Federal Reserve might trigger a sharper slowdown or even a recession. Citi's US economists – and presumably most other forecasters – expect the Fed to avoid that fate and hit just the right stance to keep growth at potential, inflation at target and extend the cycle. But this is clearly a fine line. Citi economists have also highlighted that the US fiscal path could change after the mid-term elections, with a significant chance that the next Congress will legislate away the 2020 'fiscal cliff', in particular as that will be an election year.

## China

China has been the largest contributor to global demand growth for many years, but indicators point to a significant loss of momentum due to the pain of policy tightening to address growing imbalances such as over-indebtedness and environmental pollution. Retail sales and fixed asset investment in particular slowed sharply in the first half of 2018.

To a large degree, the investment weakness reflects policy choices and is thus not in itself a worry for China's underlying fundamentals. However, Citi's China economists do believe that the consumption growth slowdown in part reflects deteriorating fundamentals such as lagging disposable income growth, rising household debt and the collapse in equity prices.

Citi forecast Chinese GDP growth to slow gradually from 6.9% in 2017 to 6.6% in 2018 and 6.4% in 2019. While this may sound optimistic relative to much of the tone of economic commentary on China, it is based on a myriad of fiscal and monetary measures designed to arrest the slowdown and it is similar to those of other forecasters: the OECD expects GDP growth of 6.7% this year and 6.4% next and the IMF 6.6% this year and 6.4% next.

China is facing significant challenges ahead. Besides the US trade wars, there are some signs of growing capital outflows, which have triggered trouble before, despite China's still-high foreign exchange reserves. A deterioration of the economic fundamentals, along with headwinds from the trade dispute with the US, could aggravate these capital outflow pressures and limit the Chinese authorities' room for policy easing.

## 1.7 Conclusion

The global economy is projected to grow at solid rates this year and next. It is carried by US fiscal stimulus and the ongoing recovery in Europe, supported by accommodative monetary policy. It should be resilient enough to withstand US trade wars and structural challenges in China and other emerging markets. However, fragilities tend to increase as the cycle matures. Financial market turbulences and policy errors, amplified by still-large debt overhangs in many economies, could slow growth sharply. In 2020, the question about the sustainability of the US growth momentum could become pressing and downside risks to global growth could become material. At this point, monetary policy may not have as much firepower to counter a slowdown as in the past, with policy rates near the effective lower bound and asset purchases maxed out. Fiscal policy might also still be constrained as most advanced economies still struggle to bring down legacy debt ratios meaningfully. The next downturn could be deeper and longer than usual.

Beyond these cyclical worries, we have highlighted structural concerns. The integration of global supply chains may have peaked and could even partly reverse. Temporary phenomena such as the trade wars may trigger a wave of re-onshoring of production, which may increase the dependence on regional markets rather than those further afield, just when the UK has chosen to cut or water down its ties with its regional market. Factors such as the 2015/2016 refugee crisis may have increased voter aversion to immigration, which could reduce immigration flows just when skills shortages are beginning to bite.

These developments are particularly concerning for the UK, which has so successfully specialised within the global supply chain on financial services and selective manufacturing industries such as car manufacturing and aviation. It has an impressive track record of attracting and integrating talent into its workforce. As it leaves the European Union, the basis of much of its success in services trade and the source of its most successful group of immigrants, the global economy could prove to be a much more challenging environment than it has been for many years.

## 2. UK outlook

Christian Schulz (Citi)

### Key findings

- **Post-EU-referendum forecasts were not very far off after all.** Instead of a short-term hit and quick rebound, Brexit slowed growth more gradually. GDP in 2018 looks set to be only marginally higher than forecasters expected immediately after the referendum, and almost 2% lower than implied by pre-referendum forecasts predicated on a Remain vote.
- **The UK economy has been somewhat supported by a strong eurozone economy.** Contrary to immediate post-referendum forecasts, the eurozone economy appears to have been unaffected by Brexit uncertainty and continues to grow robustly.
- **UK consumer spending held up better than expected in the wake of the referendum.** However, that has been at the expense of a plunging household saving ratio. With saving rates at historic lows, the consumer might find it harder to ride to the rescue again in the event of a no-deal Brexit.
- **A weakened currency, higher inflation, and lower business investment as a result of increased uncertainty have all hit UK growth.** We estimate that the sterling depreciation in the wake of the referendum raised UK consumer prices by 1.7%. These outcomes are very much in line with most initial forecasts of the effect of the Brexit vote.
- **Brexit is likely to weigh on growth for the foreseeable future.** Most scenarios will see less free trade with Europe and lower immigration. This would result in lower growth. The scale of long-term effects will depend on how the UK uses any new freedoms. A more liberalised ‘global Brexit’ in which the UK is open to immigration and free trade will be less damaging to the economy in the long run, but more difficult in the short run, than a ‘drawbridge Brexit’ in which trade barriers are erected, protectionist policies implemented and immigration minimised.
- **Our central assumption is that the UK and the EU agree on a transition period preserving essentially the same relationship they have today.** This transition period will likely have to be extended beyond 2020 in order to facilitate the political calendar, detailed future trade negotiations and a ratification procedure that involves national and subnational governments across the continent.
- **There is some reason for optimism about the UK economy.** As the Brexit deadline approaches, investment and thus growth are likely to slow further (just as they did prior to the 2016 referendum). But after Brexit Day, there could be a growth rebound, before new uncertainty about the next Brexit cliff edge sets in.

## 2.1 Introduction

In addition to globalisation coming under pressure – as discussed in Chapter 1 – another significant challenge to the UK in a globalised world is the 2016 vote to leave the EU. With the Article 50 of the Treaty on European Union deadline on 29 March 2019 approaching, forecasting the UK economy in the short and medium term is subject to unusually high uncertainty as we still do not know what form Brexit will take nor when the changes will come.

In line with many forecasters, we assume the EU and the UK will agree on a transition phase. However, we see a substantial risk that it will take much longer than the 21 months currently envisaged to agree, sign and ratify a treaty on detailed future relations. Experience shows that comprehensive trade deals take years to negotiate even with goodwill and are often subject to delays due to political changes. The current state of UK politics and the prospect of European elections in 2019 make a longer trade negotiation process almost inevitable, in our view. On the positive side, during any such transition not much would change for businesses and consumers, potentially allowing the UK economy to enjoy continued moderate growth or even an acceleration due to pent up demand in the meantime.

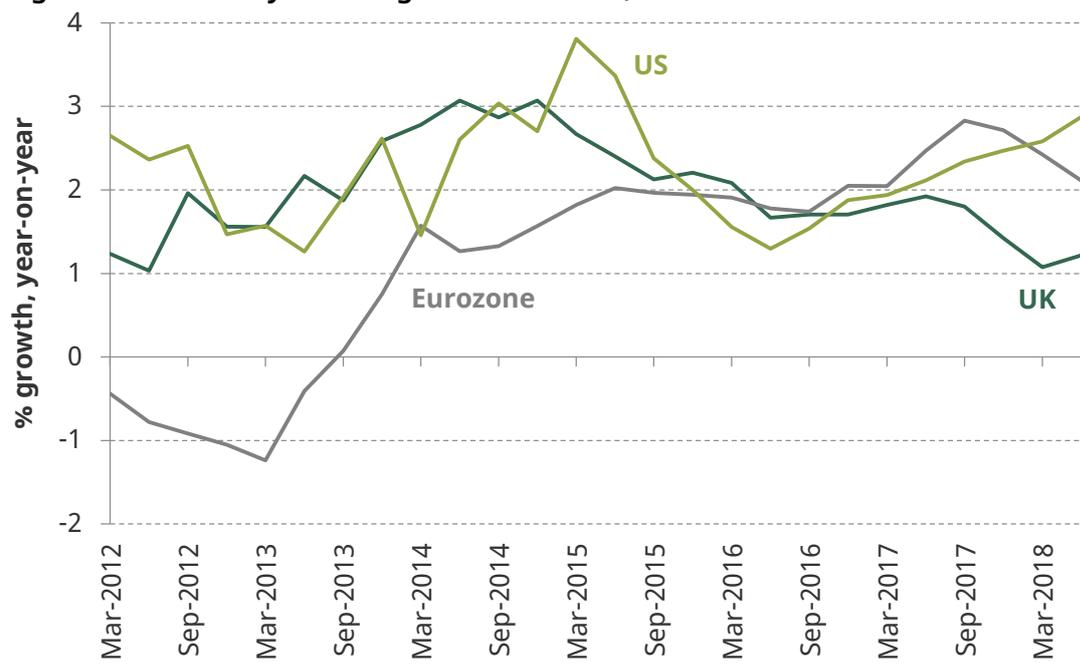
In the alternative scenario, where the UK leaves the EU without a deal, we would expect material economic disruption, not least due to a breakdown of political cooperation between the two sides. But that would also be unlikely to be the end state. Businesses would start to adjust to the new environment, and there would still be pressure to negotiate a deal eventually. It would be in the interest of all parties to do so. In addition, after leaving the EU, the UK would have the freedom to make choices about its future regulations, trade rules and immigration systems, with material repercussions for potential growth.

Amid all the uncertainty, the past two years have yielded a wealth of lessons about the UK economy. In particular, the big changes forecasters (including Citi) made to the UK economic projections around the EU referendum and how the economy subsequently evolved provide lessons going forward, starting with the fact that it took longer for Brexit uncertainty to affect growth than most expected. Section 2.2 provides an overview of the UK's recent economic performance, while Section 2.3 compares it with our and other forecasters' projections in 2016. Section 2.4 then presents our current forecasts, based on our 'smooth Brexit' base case. In Section 2.5, we discuss an alternative Brexit scenario in which the UK and EU fail to strike a transition agreement before March 2019. Section 2.6 concludes.

## 2.2 Recent trends in the UK economy

Following a period of reasonable growth in 2014–16, UK GDP growth slowed in 2017 and so far in 2018 to levels well below historical standards and modest in international comparison. According to the latest ONS data, GDP rose by 0.4% quarter-on-quarter (QQ) in the second quarter of this year, up from 0.1% QQ in the first quarter. The average growth rate of 0.2% QQ so far this year is below that of last year and well below the long-run average quarterly growth rate of 0.5% since 1980. The UK's slowdown also looks like an outlier in international comparison, with both the eurozone and the US outpacing

**Figure 2.1. Year-on-year GDP growth in the UK, US and eurozone**



Source: ONS, US Bureau of Economic Analysis, Eurostat and Citi Research.

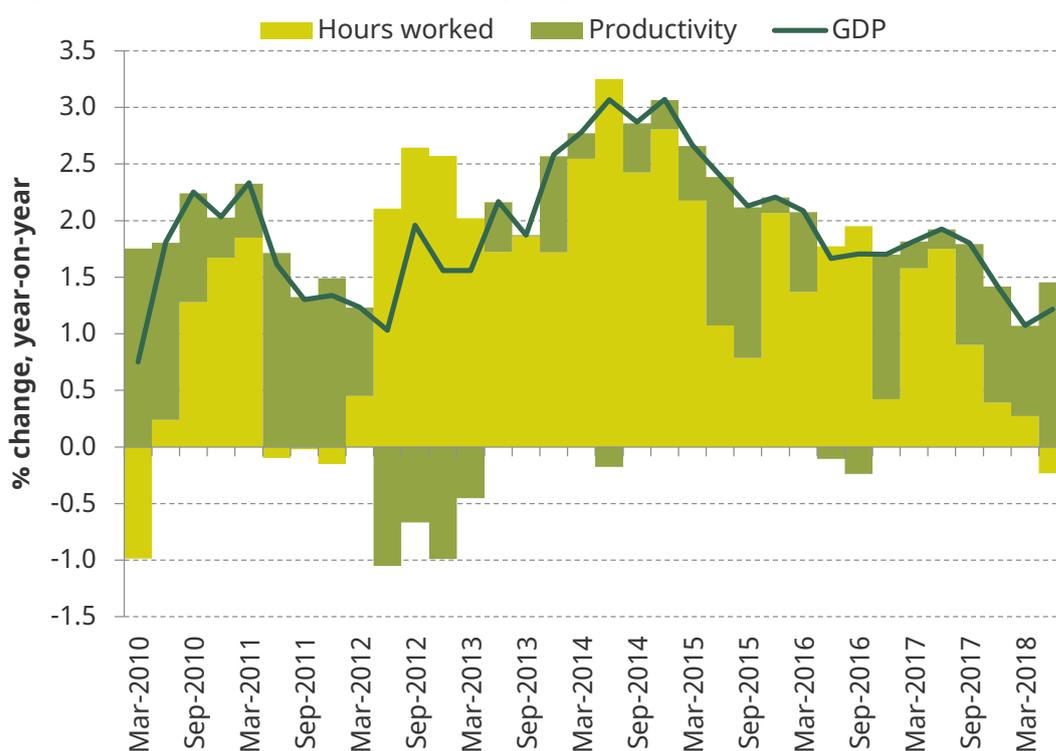
Britain since mid 2016 (see Figure 2.1), something which had not happened in the four years prior to 2016.

On the expenditure side, the key drivers of the slowdown since 2016 were lower growth rates in private consumption and investment, which were partly offset by improvements in the trade balance. Consumer spending came under pressure in 2017 as the fall in sterling in the wake of the EU referendum, as well as the rebounding oil price, pushed consumer price inflation above flagging wage growth. And business investment suffered due to Brexit uncertainty. The flipside of weak sterling – and the result of temporarily booming demand in important export markets such as the eurozone and parts of Asia – was growth in the value of UK exports.

This year, the pressure on real wages and thus consumer spending is receding as inflation falls and wage growth shows signs of picking up. The outlook for business investment remains weak and, while global demand growth remains strong, it has become more varied, with the US clearly in the lead and Europe and Asia falling behind (see Chapter 1).

The GDP growth slowdown in 2017 was accompanied by a sharp deceleration in labour input growth, lately partly offset by acceleration in productivity growth, albeit from very low levels. In fact, most of the UK’s recovery since the global financial crisis in 2008 was driven by more labour input – i.e. a growing number of employees and hours worked per employee – rather than by productivity growth. Having consistently averaged 2% growth per year in the decades before the crisis, productivity (output per hour worked) was nearly flat in the years following the crisis.

There is some evidence that this may now be changing. As Figure 2.2 shows, in the four quarters to the second quarter of 2018 (2018 Q2), the total number of hours worked shrank by 0.2% year-on-year (YY), the first decline since 2011 Q4. This means that for the

**Figure 2.2. Productivity and labour input growth in the UK (year-on-year)**

Source: ONS and Citi Research.

first time in nearly seven years, all of UK output growth (1.2% YY in 2018 Q2) was carried by a rise in productivity growth of 1.5% YY. This is the culmination of a slow recovery in productivity growth: over the last seven quarters, productivity growth has averaged 0.8%, almost three times the average pace between 2011 and 2016. However, caution is still warranted as the improvement is driven largely by reductions in hours worked per employee, which could be erratic. In any case, this welcome improvement still leaves productivity growth below the 2% per year that the UK achieved on average over decades prior to 2007.

Optimists on productivity growth have long argued that weak productivity growth was probably a temporary phenomenon at least partly due to the lasting effects of the financial crisis. With investment currently so weak (see Section 1.3) and thus a limited scope for capital deepening in the production process, the tightening labour market and recovering wage growth may force companies to make more efficient use of their existing pool of workers. Improved production processes (total factor productivity) could lead to higher productivity growth despite weak investment. If the acceleration in productivity growth to 1.5% YY is sustained or even gives way to a further increase, many official forecasts of productivity growth, and with them the public finances, would be likely to prove too pessimistic.

The Bank of England currently expects productivity growth at only 1¼% in the coming two years. Partly as a result, it estimates potential growth at only 1½% per year, which makes the moderate GDP growth rates of 1¾% per year it forecasts over the next few years enough to guide the economy into excess demand and thus growing inflationary pressure. This is the key narrative for the Bank's nascent rate hike cycle. If, however, the

rising wage growth the Bank observes is not the result of a tighter labour market but rather the result of recovering productivity growth (effectively companies unearthing significant slack in poor production organisation), then slack in the economy may be increasing and, with it, cost pressures actually decreasing. Similarly, the Office for Budget Responsibility (OBR) estimated in March that productivity growth would stay even lower, at only 1% per year until 2022, which is a key ingredient for the OBR's relatively pessimistic growth forecasts and thus public sector borrowing forecasts.

A rebound in productivity growth could have important consequences for longer-term projections. However, in the short term, fluctuations in external demand – as well as domestic developments mainly related to the Brexit process – drive UK GDP growth. And in this respect, the fact that GDP growth in 2018 is still broadly on track for the OBR's March forecast of 1.5%, and probably only mildly undershooting the Bank of England's November 2017 forecast of 1.7% YY growth by the fourth quarter of this year, is positive news. It shows an encouraging resilience in the face of major fragilities in global growth as well as uncertainty about whether the UK can secure even a Brexit transition – let alone a permanent trade deal – six months before the scheduled Brexit day. However, this resilience could still be tested in the coming months and years and does not mean that these headwinds – and the Brexit process in particular – have not had any impact on the growth trajectory since the referendum.

### 2.3 The EU referendum impact so far

The vote to leave the European Union on 23 June 2016 was an unpleasant surprise for most professional forecasters. It triggered a scramble to revise down GDP forecasts. Most downward revisions amounted to 2–3% of output in total over the period from 2016 to 2018 (see Table 2.1). The downward adjustments were typically frontloaded, sometimes even including a recession in the immediate aftermath of the EU referendum, followed by a swift recovery of growth (but still leaving a permanently lower path for output).

Initially, these forecast changes proved too pessimistic. If anything, growth in economic activity accelerated after the referendum. However, as GDP growth then slowed in 2017 and 2018, the level of GDP today is not much higher than forecast at the time. The forecasts simply overestimated the swiftness with which Brexit affected the economy.

The forecast errors in the immediate aftermath of the referendum continue to impact on the Brexit debate. The alleged collective failure to predict the economic implications of the EU referendum undermined the credibility of economists' advice, at least in the eyes of some pro-Brexit participants in the UK's political debate. There is an important risk that the pendulum of forecast bias has now swung the other way and that the risks from the Brexit process are now underestimated. It is hence important to understand how much the post-referendum forecasts deviated from the actual outcomes and why. This can provide important lessons for the current forecasts of what the economy would do in different Brexit scenarios, in particular if the UK and the EU fail to strike a deal, which leads to an abrupt EU exit on 29 March 2019.

**Table 2.1. GDP growth forecasts and actual growth rates**

	2016	2017	2018	Cumulative, 2015–18
<b>Pre-referendum (average)</b>	<b>1.9</b>	<b>2.2</b>	<b>2.3</b>	<b>6.5</b>
Citi, May 2016	1.7	2.1	2.3	6.2
BoE, May 2016	2.0	2.3	2.3	6.7
IMF, April 2016	2.4	2.5	2.4	7.5
Consensus, June 2016	1.9	2.1	-	-
<b>Post-referendum (average)</b>	<b>1.7</b>	<b>1.0</b>	<b>1.7</b>	<b>4.4</b>
Citi, June 2016	1.3	0.9	1.5	3.7
BoE, August 2016	2.0	0.8	1.8	4.7
Consensus, July 2016	1.6	0.7	-	-
IMF, July 2016	1.7	1.3	-	-
IMF, October 2016	1.8	1.1	1.7	4.7
OECD, September 2016	1.8	1.0	-	-
<b>Actual</b>	<b>1.8</b>	<b>1.7</b>	<b>1.4</b>	<b>4.9</b>
Difference from pre-referendum	-0.1	-0.5	-0.9	-1.6
Difference from post-referendum	+0.1	+0.7	-0.3	+0.5

Note: Actual for 2018 equals September 2018 Consensus Economics forecast.

Source (in noted periods): Bank of England Inflation Report; IMF World Economic Outlook; OECD Economic Outlook; Citi Research Global Economic Outlook and Strategy publication; Consensus Economics.

### How forecasts changed around the referendum

**Pre-referendum: base case was Remain vote and accelerating growth** – Just before the 2016 EU referendum, UK economic growth had slowed down quite markedly, which was widely interpreted as a sign of pre-referendum nervousness. Most forecasters expected a vote to stay in the EU and factored in some growth recovery in the second half of the year, allowing the UK economy to grow by just under 2% in 2016. For 2017 and 2018, consensus (as well as Citi and the Bank of England forecasts) was for a moderate acceleration of growth to just over 2%. Forecasters also expected that the long decline in unemployment would stop somewhere just below 5%, which was most analysts' estimate of the natural rate. Projections were for a rebound of price pressures, with CPI inflation expected to rise from 0% in 2015 and 0.8% in 2016 to about 1.5% in 2017 and possibly reaching the Bank of England's target of 2% in 2018. These forecasts were often calibrated on sterling remaining around then-prevailing levels (roughly 1.45 to the dollar and 1.30 to the euro) as well as oil prices staying around the \$50 mark per barrel Brent.

**Pre-referendum: alternative scenario would reduce GDP by at least 3%** – Many forecasters had also published estimates and simulations of what a vote to leave the EU would entail for the economy. For example, under this scenario Citi projected a cut in GDP



Citi's first post-referendum forecasts saw GDP growth slow to near zero by the end of 2016 and then rebound to almost 2% YY by late 2017 before settling around the 1.5% level in 2018 and 2019 (see Figure 2.3). On a cumulative basis, the downward revision was 2.5% over the entire 2015–18 period, at the smaller end of the adjustment we had anticipated prior to the referendum in case of a leave outcome.

Other forecasters followed suit. By August 2016, the consensus and the Bank of England (BoE) growth forecasts had dropped to a similarly deep but slightly more protracted slowdown (see Figure 2.3 and Table 2.1) compared with Citi's call. The Bank, but also the IMF and other institutions, then expected growth to rebound to trend rates in 2018 and beyond (see Table 2.1). The cumulative downgrade to GDP forecasts usually ranged between 2% (Bank of England) and 3% (IMF) over the 2015–18 period, i.e. also at the smaller end of what forecasters had warned about before the referendum. We see two reasons for that. First, in July, the ONS published a first estimate for 2016 Q2 GDP to have grown by an above-consensus 0.6% QQ. Second, some forecasters may also have taken into account a more favourable market and policy reaction and less political turmoil than they had initially anticipated.

While growth forecasts dropped, inflation forecasts went up, as anticipated. With sterling suddenly around 1.10 to the euro and 1.30 to the dollar, Citi saw 2017 CPI inflation a percentage point higher than previously at 2.5%, while the Bank of England put its CPI forecast for 2017 only a bit higher at 1.9%. As output growth was expected to slow, forecasters also predicted a rise in the unemployment rate from around 5% at the time of the referendum to closer to 6% by 2018.

**Actual outcome: immediate growth boost, gradual loss of momentum** – Financial asset prices such as sterling and gilt yields reacted in the same direction as expected and confidence indicators initially plunged to recession levels. However, economic growth initially confounded the bearish expectations. As Figure 2.3 shows, GDP growth did not slow but in fact accelerated markedly from ¼% on average per quarter in the two quarters preceding the EU referendum to 0.5% QQ in Q3 and even 0.7% QQ in Q4.

In particular, consumer spending surged in the immediate aftermath of the referendum. Households probably took a much more benign view on the consequences of Brexit than markets and economists, at least when it came to their personal finances.<sup>3</sup> In addition, some consumers who had been afraid of the consequences of the referendum beforehand may have been encouraged to make long-delayed purchases after the initial economic reaction to the vote was not as bad as expected. Finally, some households may have brought forward purchases in anticipation of higher prices due to weak sterling. The unexpected surge in spending was not to last, however: growth dropped in 2017, with quarterly growth averaging only 0.3% QQ in 2017. Annual GDP growth peaked in mid 2017 at 1.9% and fell to 1¼ per cent in 2018. This profile of growth first accelerating after the referendum and then slowing down was the exact opposite of what forecasters had expected.

Despite getting the profile wrong, cumulatively post-referendum forecasts were not so bad. Averaging across the various forecasts made immediately after the referendum, economists at the time expected 2018 GDP to be 4.4% higher than in 2015, 2ppts less than

<sup>3</sup> <https://www.theguardian.com/politics/ng-interactive/2018/jan/26/guardian-icm-brexit-poll-full-results>.

on average in the pre-referendum forecasts. That is not too far off the actual outcome. If we assume it will grow in line with the current Consensus Economics forecast by 1.4% for 2018 as a whole, this year's output will be 4.9% higher than in 2015, which is much closer to the post-referendum forecast than to the pre-referendum forecast.

### What can we learn from the Brexit forecasting experience?

Few things in economics ever evolve exactly as forecast. Even if they do, it is almost always the result of several forecast errors offsetting each other rather than a precise point forecast. Indeed, most economists' post-EU-referendum forecast changes may have proved more right than wrong, at least cumulatively, but only because the economy twice did not do what we expected. As the two errors were in opposite directions, they offset each other.

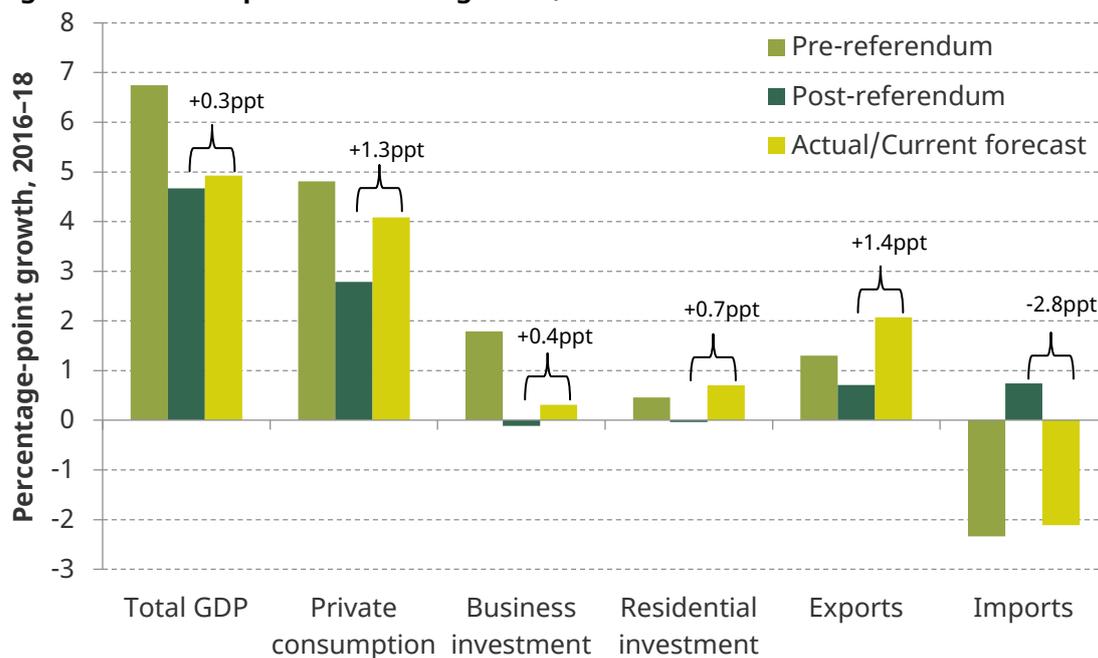
A first lesson for future forecasts is that not all political events that trigger uncertainty affect the real economy quite as quickly as, say, the bankruptcy of the Lehman Brothers investment bank did in 2008 or the bond market turbulences in the eurozone in 2011–12. The real economic impact of financial market turbulences can be cushioned by swift action by authorities such as the central bank to ensure a smooth functioning of financial markets and bank liquidity provision, as well as strong intermediaries, in particular banks. Both of these mitigating factors were in play in the UK after the EU referendum.

In this subsection, we summarise some of the other lessons from the Brexit forecasting experience.

**Business investment is the key Brexit weak spot** – In the wake of the EU referendum, most forecasters expected a recession in business investment to be the key channel transmitting Brexit uncertainty to the real economy. That proved largely correct. For example, the Bank of England had expected business investment in 2018 in real terms to be nearly 20% higher than in 2015, but after the referendum the expectation was for it to fall initially and then rebound, remaining flat overall. Put differently, the Bank expected business investment alone to add 1.8% to GDP in 2015–18 and thus account for more than a quarter of total GDP growth in this period (see Figure 2.4). After the referendum, the Bank of England expected it to instead subtract 0.1% from GDP. And indeed, business investment fell in 2016 Q4 and 2017 Q1, rebounded only modestly later in 2017 and has been largely flat so far this year (see Figure 2.5). Cumulatively, business investment will have added only around 0.3% to GDP in 2015–18 or about 6% of the total GDP growth over this period. This UK weakness particularly stands out in comparison with other economies that were similarly advanced in the economic cycle such as the US and Germany (see Figure 2.6).

**Don't bet against the consumer** – Just before the referendum, we and the Bank of England had expected private consumption in 2018 to be around 8% higher than in 2015, but then halved that forecast to around 3–4% following the referendum. Currently, most estimates see real private consumption exceed 2015 levels by more than 6% this year, even despite higher-than-expected inflation. A key part of this resilience appears to have been the collapse in the household saving rate, which started in 2015 but continued to historically low levels after the referendum (see Figure 2.7). While some of this may be a temporary effect of withdrawals under the new pension freedoms, it could also suggest that households looked through the spike in inflation and saw no need for increased precautionary savings due to Brexit uncertainty. There is a risk in this behaviour. The lack

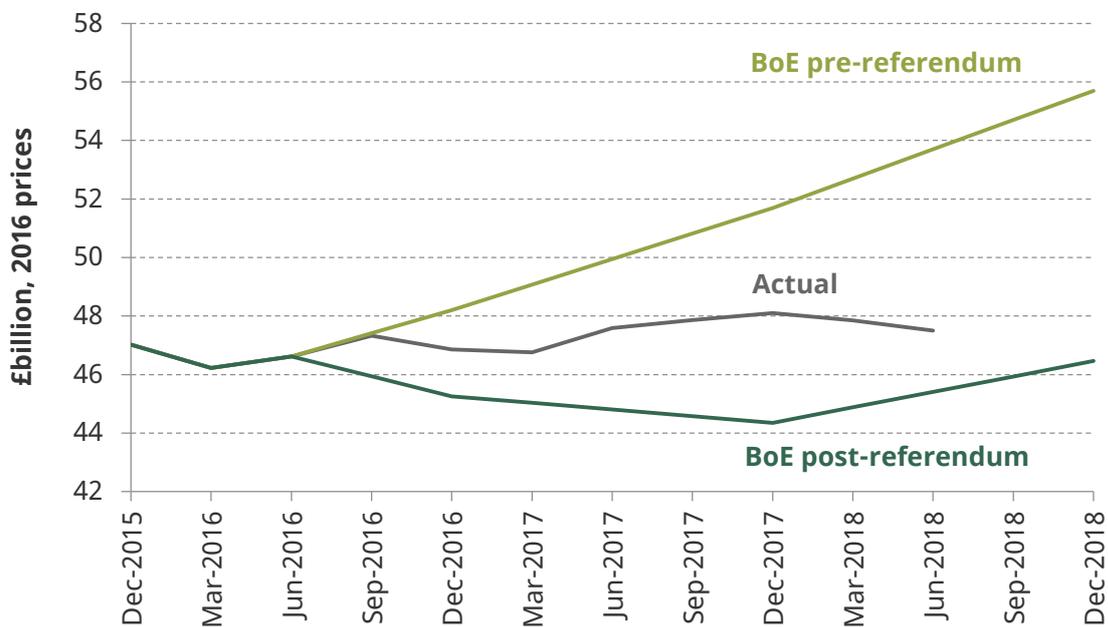
**Figure 2.4. UK components of GDP growth, 2016–18: BoE forecast and actual**



Note: Remaining error due to public consumption, inventories, and statistical errors and rounding.

Source: BoE and Citi Research.

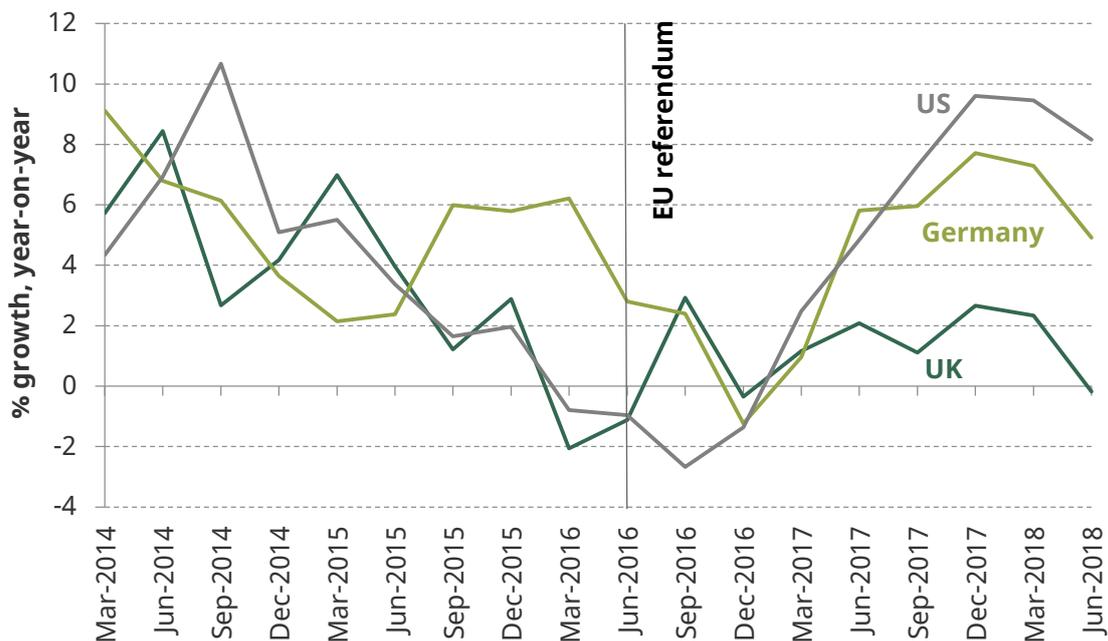
**Figure 2.5. UK business investment**



Note: BoE pre-referendum forecast was made in May 2016. BoE post-referendum forecast dates from August 2016.

Source: Bank of England and Citi Research.

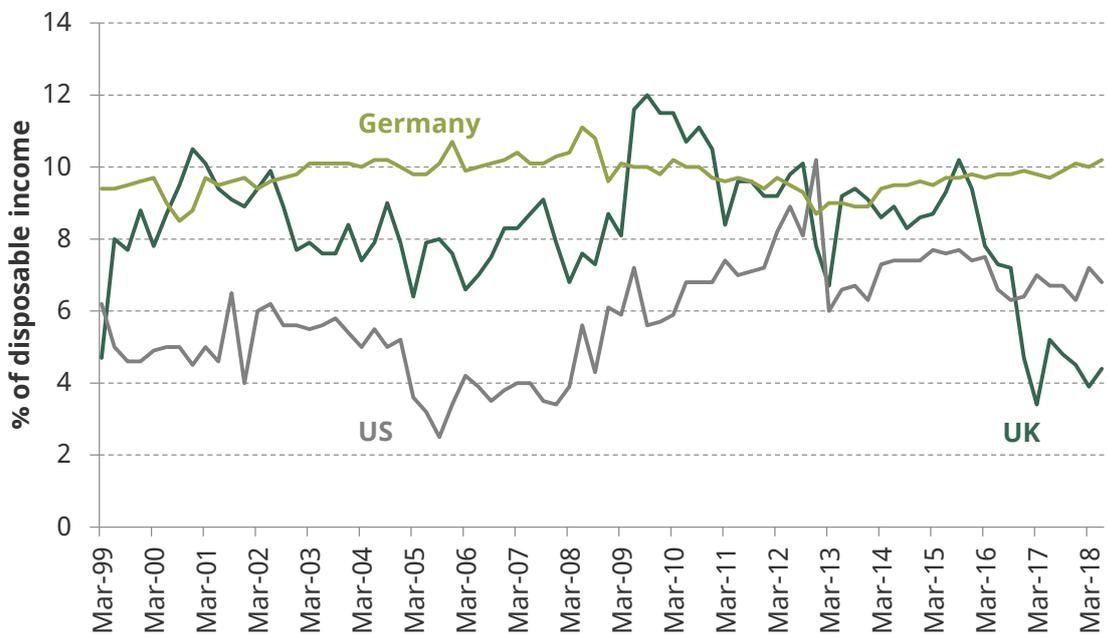
**Figure 2.6. Year-on-year growth in business or machinery and equipment investment in the UK, Germany and the US**



Note: UK: business investment; US, Germany: equipment investment.

Source: Eurostat, ONS, US Bureau of Economic Analysis and Citi Research.

**Figure 2.7. Household saving rate in the UK, Germany and the US**



Source: ONS, Destatis, US Bureau of Economic Analysis and Citi Research.

of saving reduces consumers' capacity to smooth spending through the next downturn. If Brexit negotiations end in acrimony and failure to agree a deal, output could plunge (see Section 2.5). Contrary to 2016, consumer spending might this time amplify rather than smooth the impact.

**Import substitution takes a lot of time** – In the wake of the referendum, many forecasters expected a cumulative decline in imports due to weak domestic growth, the substitution of UK goods for imports due to higher prices on the back of the weaker exchange rate, and the strategic localisation of supply chains ahead of leaving the EU. The Bank of England, for example, expected falling imports to add 0.7 percentage points to GDP growth in 2015–18 (see Figure 2.4). That clearly did not materialise, at least not initially. Driven by robust consumer spending growth, imports rose by a solid 3.3% in 2016 and 3.2% in 2017, subtracting 2.1ppts from growth in 2015–18, nearly in line with Bank of England expectations before the referendum. However, the forecast may still become true with a lag, as imports of goods and services have fallen in the last three quarters until 2018 Q2.

**Brexit has had virtually no impact on the rest of the world** – Forecasts for global growth in general, and in particular for the eurozone, around the referendum proved far too pessimistic. Both the Bank of England and Citi expected eurozone GDP to rise by 5% between 2015 and 2018 before the referendum and then reduced that figure by about a percentage point to 4% immediately after the referendum. Collateral damage from Brexit was expected to reduce 2017 growth from a pre-referendum forecast of 1¾% to 1¼%. In reality, however, the eurozone economy, which accounts for about half of UK trade, expanded by precisely double that pace in 2017 and is expected to post another solid performance in 2018. Output in 2018 could end up nearly 7% higher than in 2015, or 3% above the post-referendum consensus expectation.

US growth was never expected to be hit by Brexit. The US economy had a much weaker-than-expected 2016 (only 1.5% GDP growth), an in-line 2017 (2.2%), but is this year expected to grow by 3%, significantly faster than most economists expected in 2016. That of course reflects another political surprise, the election of Donald Trump as US President, which brought an unexpected large-scale fiscal loosening via tax cuts and spending increases.

Because the rest of the world was unaffected by Brexit, external demand was able to have a stabilising effect on UK growth. Levered up by any depreciation of sterling, UK exports of goods and services look set to be up by around 8% between 2015 and 2018 rather than the mere 2.5% increase the Bank of England expected right after the referendum.

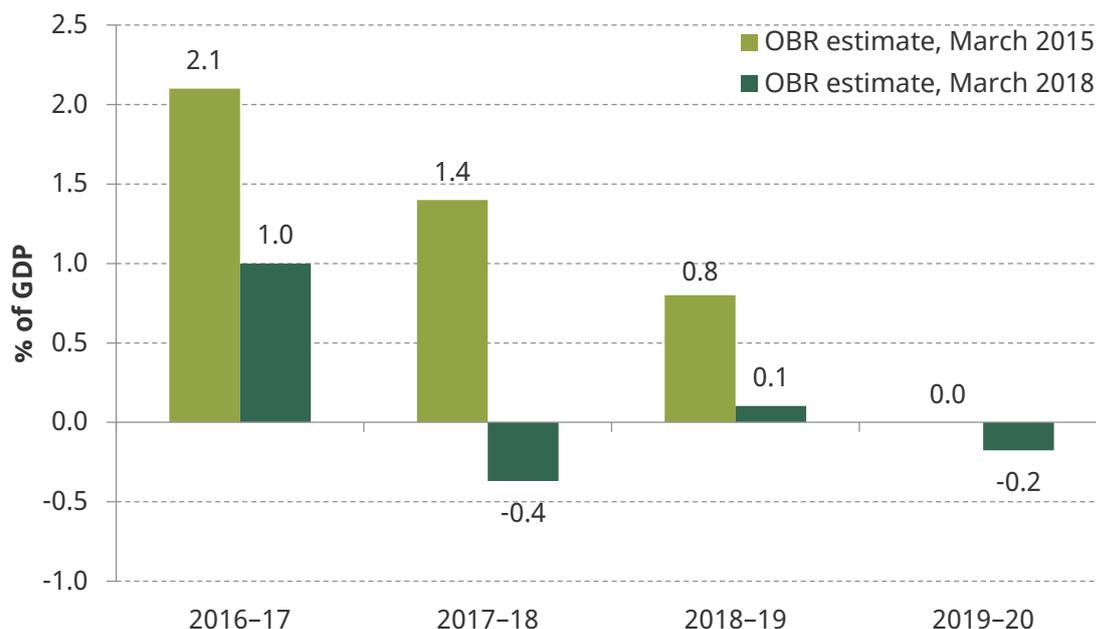
**Long lags and policy supported residential construction investment** – Bank of England and market forecasts for private residential construction were far off the mark. The Bank and Citi expected a cumulative downturn of 5–8% in 2017 right after the referendum, but construction investment actually ended up with a 10% increase and is on track for another solid increase in 2018. While residential construction is a relatively small part of total output (3%), it alone created a forecast error for the Bank over the 2015–18 period of 0.7% of GDP (see Figure 2.4). We attribute this forecast error to a much greater inertia in construction investment than anticipated (developers looking through changes in the economy that they expect to be cyclical) and to policy support from the government such

as the Help to Buy scheme and various initiatives mostly in the Autumn Budget 2017, such as planning reform and the £15.3 billion added financial support for home building.

**The housing market is (partly) a Brexit victim** – Following the EU referendum, both we and the Bank of England expected some fall in house prices. The Bank said in August 2016 that prices would ‘decline a little’, while Citi warned London house prices could fall by up to 18%. House prices have not fallen, at least not in the UK as a whole (with the exception of modest falls in London), but a clear slowdown is evident and there are other signs of housing market weakness – for example, mortgage approvals continuing to run at a historically modest rate.

**If policymakers avoid errors, financial conditions can loosen** – Before the referendum, most financial market participants had expected a sharp depreciation of sterling, a fall in gilts and a mixed reaction in equity markets in case of a vote to leave the EU. For example, Citi had forecast sterling to drop by 12% to around 1.14 against the euro and by 20% to around 1.22 against the dollar.<sup>4</sup> Citi had also expected gilt yields to fall to around 1% in the immediate aftermath. We (and probably most other market participants) also expected the Bank of England to cut rates and restart asset purchases. All of these forecasts proved correct. Where the picture is less clear is credit spreads and equity prices: the expectation was for these to deteriorate, which did occur but was reversed quickly.

**Figure 2.8. Change in the cyclically adjusted primary balance**



Note: Positive changes in the cyclically adjusted primary government balance indicate fiscal tightening, negative numbers fiscal loosening.

Source: OBR and Citi Research.

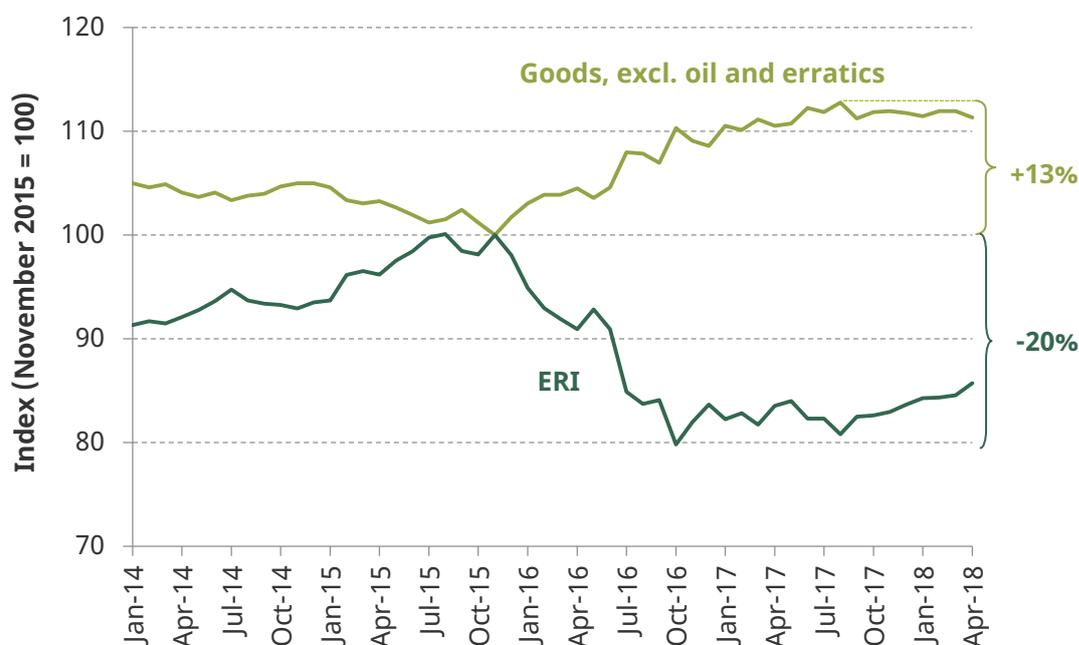
<sup>4</sup> Citi Research, ‘UK Economics Focus – referendum preview: base case “close remain”’, 2016, <https://www.citivelocity.com/rendition/eppublic/documentService/dXNlc9pZD1ESXI0R2IKUFhjVUxXNwtpZmx3NFJ3JmVtYWlsX3NlbnRfaWQ9Nzc4MzQ4NTY2JmJzX3ByaW9yaXR5X2VtYWlsPWZhbHNI/c3ViLWNoYW5uZWw9RW1haWwZG9jX2lkPTY2NzQ0NiZjaGFubmVsPURDTQ>.

In addition to the monetary policy and financial market response, there was also a fiscal one. Before the EU referendum, then-Chancellor George Osborne had planned a front-loaded fiscal tightening of a cumulative 4.3% of GDP over the next three years to keep him on course to meet his then fiscal targets.<sup>5</sup> His successor Philip Hammond diluted these targets and reduced the tightening plans for 2016–17 by half. In March this year, the OBR estimated that the fiscal stance effectively turned neutral from 2017–18 onwards (at least in terms of adjustments to the structural primary government balance). The swift reaction of the Bank of England and the loosening of fiscal austerity, but also the quick restoration of political leadership under Prime Minister Theresa May following David Cameron’s announcement that he would resign as PM, were key reasons, in our view, that financial markets settled quickly and supported growth.

**Sterling’s pass-through to inflation was faster than estimated** – Immediately after the EU referendum, the Bank of England expected CPI inflation to average 1.9% in 2017 and 2.4% in 2018, up from 1.5% and 2.1%, respectively, in the last pre-referendum forecast. Citi was more aggressive, expecting inflation to average 2.5% and 2.6% in those two years. However, both forecasts proved too low, and too late. CPI inflation peaked above 3% in Autumn 2017, averaging 2.7% that year and thus 0.2ppts above Citi’s and almost a percentage point above the Bank of England’s forecast.

It is difficult to disentangle the effect of sterling’s 20% EU-referendum-related depreciation since November 2015 on consumer prices from other factors (such as the concurrent rebound in the oil price and domestic inflation dynamics). However, a back-of-the-envelope calculation suggests that sterling’s depreciation pushed up prices by 1.4% over 18–24 months on the back of higher costs for non-energy imports (with prices up by 13%, as shown in Figure 2.9, and these imports making up 11% of CPI). The 20% extra rise

**Figure 2.9. UK broad effective Exchange Rate Index (ERI) and import prices (index)**



Source: ONS, Bank of England and Citi Research.

<sup>5</sup> We use the change in the structural primary general government balance to measure the fiscal impulse.

in UK oil prices due to sterling may have added another 0.3ppts to CPI over the first 12 months, leading to a total impact of 1.7%. The good news is that this year, inflation is falling as the sterling impact is fading. Consensus Economics reports an average CPI inflation estimate of 2.4% this year (Citi 2.5%).

**To sum up**, while the impact of the decision to leave the EU on the UK economy has accumulated to substantial levels, forecasters' implicit assumption that it would be frontloaded proved incorrect. The Brexit process did, and does, weigh on investment as expected and reduced consumption growth due to sterling-driven high inflation, but both effects unfolded over a longer-than-expected period. The support provided by monetary and fiscal policy as well as weak sterling and low interest rates helped, but was largely expected before the referendum. The swift handover from David Cameron to Theresa May, on the other hand, may have been a rather unexpected boost to stability, at least initially. These lessons can give some guidance on the potential impact of different scenarios on the months and years to come, with the Brexit deadline approaching and a failure to agree even just on a transition still well within the realm of possibility.

## 2.4 The short-term UK economic outlook

In the remainder of this chapter, we discuss the outlook for the UK economy. We start in this section with Citi's base case for the short-term and compare with other forecasters. In Section 2.5, we turn to the main alternative scenario – a 'no deal' outcome – and thoughts on the long-term prospects for Brexit Britain.

### Until 29 March 2019

While our base case is that the UK and the EU will strike a withdrawal treaty under Article 50 of the Treaty on European Union before 29 March 2019, including a transition period during which materially nothing will change for businesses, we expect the UK economy's resilience to be tested as the Brexit deadline approaches. Companies and households may postpone investments and spending while they wait for confirmation that there will not be a cliff-edge exit on 29 March 2019. And even thereafter, it may take some time for uncertainty to dissipate (before it rises again towards the end of the transition period anyway). For the remainder of 2018 and early 2019, that could mean GDP growth rates falling a little further, to 0.3% per quarter.

The impact of Brexit preparations themselves could be ambivalent: some companies and households will implement contingency plans for Brexit, which could mean capital and workers leaving the country, reducing demand and supply. But it could also mean stocking supplies and localising supply chains and thus more investment in the UK. With important export markets currently slowing (eurozone, China) or not further accelerating (US), additional external support to UK growth is also unlikely, in our view.

Could public and private consumption sustain growth? We would not bet against it (see lessons above). Inflation has faded somewhat, reducing the downward pressure on real wages, which probably caused the slowdown in consumer spending in 2017. On the other hand, as we argued above, households may have to use some of the financial space to replenish their savings, in particular against the background of higher interest rates. The Chancellor has (at least in the short run) some fiscal leeway to smooth growth around the UK's EU exit. Public sector net borrowing in the first five months of fiscal year 2018–19 was

**Table 2.2. Citi UK GDP forecasts, quarterly**

QQ annualised, %	2018 Q1	2018 Q2	2018 Q3	2018 Q4	2019 Q1	2019 Q2	2019 Q3	2019 Q4
GDP	0.9	1.5	1.7	1.2	1.3	1.4	2.3	1.8
Private consumption	0.9	1.3	1.4	1.4	1.4	1.4	1.4	1.4
Public consumption	1.5	1.7	1.1	1.5	1.4	2.8	2.8	0.9
Fixed investment	-5.3	3.4	0.6	-2.9	-3.3	2.4	8.1	2.6
Business investment	-1.7	1.9	0.0	-3.9	-3.9	0.0	10.4	2.4
Residential investment	5.9	4.4	0.0	-5.9	-7.8	8.2	8.2	2.8
Exports	0.2	-13.5	4.5	2.8	3.3	2.8	2.4	2.4
Imports	-0.7	-3.2	2.4	0.8	0.8	4.1	4.1	1.6

Source: ONS and Citi Research.

30% lower than in the same period in the previous fiscal year. Even if the downward trend in borrowing may be exaggerated somewhat, Citi currently expect borrowing to come in £5 billion (0.2% of GDP) lower this fiscal year than the OBR expected back in March. Chapter 3 provides a longer discussion on the outlook for the public finances.

On balance, we expect GDP to expand at a pace of around 1.5% annualised in the second half of 2018 and the start of 2019 (see Table 2.2). The Bank of England is a bit more optimistic at the moment, expecting GDP to expand by 0.5% QQ in Q3 and by 0.4% per quarter thereafter. Bloomberg consensus also sees GDP growth of 0.4% (1.6% annualised) for the coming quarters. Citi's full-year GDP growth forecast for 2018 is 1.3%, in line with Bloomberg and Consensus Economics consensus, but below the OBR's 1.5% forecast in March this year.

### After 29 March 2019

As outlined above, our base case is that the UK and the EU strike a deal for a transition period during which little changes for the economy. The uncertainty weighing on UK output growth at the moment should turn into relief once this deal is agreed. After the transition agreement has been signed and ratified by the UK and EU parliaments, companies and households should resume business as usual and in addition unblock some of the pent-up investment and spending. Similarly to the period immediately after the EU referendum, this may actually lead to a substantial growth rebound from Spring 2019 (the exact timing depends on when certainty about the immediate post-Brexit future is established), with business investment and likely consumption in the lead.

**Table 2.3. Citi UK GDP forecasts, annual**

<b>YY %</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>
GDP	1.7	1.3	1.5	1.9	2.0	1.9
Private consumption	1.8	1.1	1.4	1.5	1.6	1.6
Public consumption	-0.1	1.3	1.8	1.2	0.9	0.9
Fixed investment	3.4	0.4	0.5	3.2	2.6	2.6
Business investment	1.6	0.5	-0.2	3.2	2.4	2.4
Residential investment	9.6	6.3	-0.2	3.8	2.8	2.8
Exports	5.4	-0.7	2.0	2.8	3.1	2.6
Imports	3.2	-0.2	1.8	2.1	1.6	1.6
<b>Other forecasters (GDP only)</b>						
Consensus (Bloomberg)	1.7	1.3	1.5	1.6		
IMF	1.7	1.4	1.5	1.5	1.6	1.6
Bank of England	1.7	1.5	1.75	1.7	1.7	

Note: Bloomberg consensus taken on 2 October 2018.

Source: IMF World Economic Outlook (latest interim update), Bank of England August 2018 Inflation Report and Citi Research.

Once a Brexit deal has been struck, we also expect sterling to appreciate as investors adjust asset prices to the confirmation of a transition period and possibly some guidance on the future trade deal. Depending on the extent of this appreciation, some of the post-referendum effects may reverse post-Brexit. For example, stronger sterling may undermine export competitiveness and make the UK a little less attractive for international investors. By contrast, stronger sterling reduces the cost of imports, lowers inflation and thus boosts real purchasing power and real wages. That should support private consumption, at least temporarily, especially given the post-EU-referendum experience that the pass-through to consumer prices might be quicker than in the past.

Interest rates would probably rise across the spectrum of maturities. We would expect the Bank of England to look through short-term disinflationary effects of stronger sterling but respond to the confidence bounce and demand increase by hiking interest rates. Markets would reassess both the Bank of England's rate path and the terminal rate. With both short- and long-term interest rates moving higher, we would expect a significant

tightening of financial conditions, which would dampen growth prospects somewhat, in particular after the initial ‘relief rally’ following Brexit Day.

Specifically, we expect that after a very soft start to 2019, GDP growth rates will rally to up to 0.6% QQ in the second half of the year, which should help annual GDP growth to rise back to 1.5% in 2019 and around 2% from 2020 onwards. But that factors in a longer transition period than is currently envisaged, because otherwise any relief recovery in 2019 would be cut short if the next Brexit cliff edge looms just 21 months later.

Our view is that the Brexit transition phase will last considerably longer than the 21 months the UK and the EU agreed in March. In 2019, the EU will hold parliamentary elections in May, followed by the election of a new Commission, new EU Council President and possibly a range of other UK-relevant changes. That makes it rather unlikely that substantial negotiations about Brexit can resume before the end of next year. Since the ratification procedure of the future trade deal will almost certainly involve EU-27 national parliaments, and sometimes regional parliaments and possibly even referendums, it seems likely that the transition will have to be extended considerably to conclude a future trade deal. If the transition is extended by just 15 months, the UK would still be largely in the current arrangements by the next (scheduled) UK election. And then the next UK government may want to revise the Brexit strategy, making further delays likely. It is thus the basis of our forecast that not much will change in UK–EU trading arrangements throughout our forecasting horizon until 2022 at least.

That in part makes us significantly more optimistic than the OBR, which in March forecast 1.3% GDP growth for 2019 and 2020, followed by marginal upticks thereafter. Other forecasters are also more pessimistic than Citi, at least from 2020 onwards: Bloomberg consensus sees 2020 GDP growth at only 1.6%. The IMF expects GDP to grow at a trend rate of 1.5% for the foreseeable future, while the Bank of England comes closest to us with a 1¾% per year growth forecast.

As described, most of our relatively optimistic forecast is founded on our particular view of current and future fluctuations in Brexit uncertainty. However, our longer-term productivity view and our medium-term Brexit view probably also deviate from consensus assumptions.

We have already highlighted in Section 2.2 some (admittedly tentative) signs that productivity growth is recovering to historically more normal rates (1.5% YY in output per hour worked in 2018 Q2) as companies make production processes more efficient and more of the after-effects of the financial crisis fade. Labour input growth may be under pressure as immigration from EU countries seems to be receding (see Figure 1.10), but for the time being we expect free mobility of labour to continue and we also still see underemployment in the UK, which may leave scope for further growth in labour input. We therefore still see the UK’s potential growth rate as closer to 2% than to 1.5% over the medium term. This is above estimates by the Bank of England and the IMF (both 1.5%) and the OBR (1.4% until 2020).

### **Inflation outlook**

Current UK inflation continues to be pulled and pushed in different directions: the impact of the sterling depreciation in the wake of the EU referendum is fading, allowing core inflation to fall back to its underlying trend. At the same time, rising oil prices are pushing

energy inflation up. As a result of these opposing factors, headline CPI inflation stayed above target through the summer (with the latest release at 2.7% YY in August) and looks set to stay at roughly these levels until Spring 2019 before falling back below 2%.

### Monetary policy outlook

With inflation currently above target, unemployment at or below the Bank of England's natural rate estimate of 4.25%, GDP projected to grow above the Bank's potential growth rate estimate of 1.5% per year and the policy rate far away from the Bank's neutral rate estimate of 2–3%, the Monetary Policy Committee sees itself at the start of a gradual rate-hiking cycle, with probably one or two hikes per year. Having hiked in August 2018 to 0.75%, rate setters can now pause to observe the climax of Brexit negotiations. Provided the UK and the EU can agree to avoid a cliff edge, the next 0.25ppt hike could be as early as May 2019, or – as we think is likely – in August 2019 if Brexit uncertainty leads to a temporary dip in growth. We expect the Bank Rate to climb to 1.5% in 2020, at which point the Bank could start reducing the balance sheet through actively unwinding its programme of quantitative easing. This is a significantly steeper path than markets are currently pricing. If Brexit leads to a cliff-edge recession, we would instead expect the Bank to cut rates to zero and expand the balance sheet (an eventuality the markets may be placing some likelihood on).

### Fiscal outlook

Low and falling unemployment, rising wage growth, resilient growth in activity as well as evidence of public spending discipline have allowed the government to reduce borrowing by 30% YY in the first five months of the fiscal year. While this performance is unlikely to hold throughout the year, we do expect public sector net borrowing to fall from £39.9 billion in 2017–18 to £32 billion this fiscal year and £30 billion in 2019–20. In our base case of a relatively smooth but drawn-out Brexit, we would expect the Chancellor not to spend the borrowing undershoot and ease policy but to instead reduce debt. Hence we expect general government debt to fall below 80% of GDP by 2021. But as discussed in Chapter 4, this would require fresh tax rises to offset any decision to loosen the envelope for next year's Spending Review.

## 2.5 No deal

Our main alternative economic scenario in the short term is that the UK and the EU fail to strike a withdrawal and transition treaty, meaning EU treaties would abruptly cease to apply to the UK as of 30 March next year. All evidence at the moment suggests to us that, even if both sides make unilateral preparations for this scenario such as stockpiling key crucial supplies or grandfathering the validity of financial contracts, there would be severe short-term economic disruption in any sector reliant on trade in goods and services with the EU. Table 2.4 presents a summary of trade exposure to the EU, as well as the exposure to EU workers by sector; see Chapter 10 for a further discussion of the different channels that post-Brexit trade barriers can operate through. Manufacturing, financial and professional services, and transport account for 33% of output and nearly 10 million jobs. The disruption could be aggravated if – as is likely – the talks break down in acrimony and mutual cooperation turns into confrontation. Even sectors that do not trade directly with the EU, such as health and education, could be exposed to some disruption via their reliance on EU workers.

**Table 2.4. Exposure of different sectors of the UK economy to EU trade & immigration**

Sector	2016 GVA (£bn)	% of total GVA	2016 exports to EU (£bn)	2016 imports from EU (£bn)	EU trade intensity (% of GVA)	Employment ('000s, 2016 average)	Immigration law effect
Manufacturing	177	10.1	129.0	228.0	202	2,434	High
Accommodation and food	53	3.0	14.8	30.4	85	2,140	High
Agriculture, forestry and fishing	11	0.6	2.1	4.8	63	209	Medium
Mining and quarrying	21	1.2	10.0	2.8	61	54	Low
Financial and insurance activities	115	6.6	28.7	4.1	29	1,013	Medium
Information and communication	107	6.1	15.0	10.0	23	1,237	Low
Transportation and storage	77	4.4	5.6	10.8	21	1,395	High
Professional, scientific and technical activities	215	12.3	23.7	2.6	12	5,101	Medium
Utilities (electricity, water)	46	2.6	1.2	1.9	7	330	Low
Public administration and defence	81	4.6	0.5	1.2	2	1,264	Low
Construction	108	6.2	0.8	0.8	1	1,367	High
Wholesale and retail trade	191	11.0				4,702	High
Real estate activities	242	13.9				493	Low
Education	100	5.7				2,697	Low
Human health and social work	128	7.3				3,958	Low
Others	72	4.1	1.0	0.4	2	1,405	
<b>Sums/Averages</b>	<b>1,744</b>	<b>100</b>	<b>232</b>	<b>298</b>	<b>30</b>	<b>29,799</b>	

Note: Sectors ordered by EU trade intensity. 'GVA' stands for gross value added. Immigration law effect is 'high' in sectors where the share of EU workers exceeds 8% and 'medium' for 6–8%, according to 2016 GDP data.

Source: ONS and Citi Research.

There is inevitably a great deal of uncertainty about the size of the impact on GDP, but based on analysis presented in December 2017,<sup>6</sup> we would expect to slash our UK GDP growth forecast by around 5ppts over 2–3 years in case of such a ‘no deal’ outcome. According to a letter from the Chancellor to the Chair of the Treasury Select Committee,<sup>7</sup> the UK Treasury fears a 5.0–10.3% hit to GDP over 15 years from exit (as well as £80 billion more public sector borrowing by 2033–34) in such a scenario, an order of magnitude broadly confirmed by the International Monetary Fund in its latest Article IV consultations.

### **The UK’s new choices**

We stress that a failure to agree a withdrawal treaty and a transition phase is initially a one-off event, to which the economy will have to adjust. There would undoubtedly be long-term consequences of ‘no deal’ due to the deterioration of economic and potentially political relations with the EU and its 27 remaining members, but these consequences would also depend significantly not just on future trade deals but also on the choices future UK governments make about how Britain will import goods, services, capital and people in the future, as we highlighted in the above-mentioned December 2017 study into the effects of a no-deal Brexit. Looser relations with the EU and other trading partners – in the extreme, trading on World Trade Organisation (WTO) rules – can give more freedom to the UK to make its own choices on tariffs, regulation, immigration laws and property rights. The choices the UK makes could either improve or worsen its long-term economic outlook after the initial downward shock from Brexit (smooth or not). To highlight this, we specify two extreme (and in this purity unlikely) cases with very different choices.

### **Global Brexit: deregulation, lower tariffs, more immigration**

Some Brexit supporters, at least at times, advocate wide-ranging deregulation of the UK economy after Brexit and the unilateral abolition of import tariffs. While they usually want to restrict immigration, we would argue that a true global Britain would probably also relax immigration rules, at least for highly qualified workers from outside the EU (and not tighten rules for highly skilled EU workers too much). For example, the Migration Advisory Committee proposed in September to drop the cap on highly skilled immigration.<sup>8</sup>

Maximum liberalisation would expose the UK economy to the maximum of short-term competitive pressure. As discussed further in Chapter 10, UK goods and services exporters would not only face new tariffs and non-tariff barriers on their exports to the continent; reduced import tariffs would also allow competitors from the rest of the world to gain market share on British markets without the traditional hindrance from customs and other policy barriers. Expensive British producers might have to downsize or close unless a drop in sterling offset the entire production cost disadvantage the UK likely has compared with the cheapest global producers. Unemployment would rise at least temporarily. Deregulation of labour-intensive services may also weigh on profits, employment and wages at UK services firms. Even in financial services, deregulation may lead to further parts of the industry migrating to cheaper locations with potentially less burdensome rules and regulations.

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<sup>6</sup> Citi Research, ‘Brexit: economic and financial implications of “no deal”’, December 2017.

<sup>7</sup> <https://www.gov.uk/government/publications/chancellor-letter-to-chair-of-treasury-committee-on-no-deal-brex-it-economic-analysis>.

<sup>8</sup> Migration Advisory Committee, *EEA Migration in the UK: Final Report*, 2018, [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/741926/Final\\_EEA\\_report.PDF](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/741926/Final_EEA_report.PDF).

On the flipside, from the perspective of long-run economic growth, UK exporters would gain price competitiveness over time as labour costs adjust internally due to high unemployment and externally due to sterling devaluation. New trade agreements with important markets, low customs and other barriers to imports and investment as well as potential improvements in competitiveness might offset at least some of the considerable downside of new trade barriers to the EU and attract some foreign direct investment, which in turn would allow the UK to continue to run a current account deficit, at least temporarily, without destabilising sterling excessively. Domestically, cheaper imports from non-EU countries and deregulation would depress inflation and raise the spending power of most consumers. Non-tradable services would benefit and partly cushion the blow from the export sector. In the long run, increasing competitiveness may allow some sectors to overcome export hurdles, in particular if the UK succeeds in striking free trade deals.

Following this model in its entirety would have very substantial up-front costs and would involve significant unemployment and economic disruption in the short and medium run. However, we would not rule out that such a model might lead to relatively high levels of growth and average prosperity in the longer run, even though not necessarily better than in a scenario with continued EU membership. In any case, short- and medium-run impacts would need to be managed very carefully – for example, with long implementation periods.

### **Drawbridge Brexit: protecting and nurturing UK industry**

Alternatively, a future UK government may take a more protective stance. In order to prevent large increases in unemployment, future governments may erect relatively high customs and regulatory barriers. If the UK adopts, for example, the same or even higher tariffs than the EU at the moment (be that regularly or, as the US is currently doing, for specific reasons), or introduces quotas, EU exporters would face greater access restrictions on UK markets, while access for importers from the rest of the world would not improve or even deteriorate. This may sound far-fetched but is currently effectively the strategy of the US government under President Trump. Net exporters such as the financial services sector would still face the same troubles. But in net importing sectors such as manufacturing, import substitution would likely increase output and employment as they substitute imports. In fact, immigration control would likely reduce labour supply growth over time and could even trigger skills shortages, falling unemployment and rising wages. The UK would need less exchange rate depreciation to rebalance the external accounts.

On the flipside, import hurdles and new regulations, if they do not fix market failures, would over time lead to falling productivity and lead to expensive double regulation for many exporters. Over time, the UK's competitive position would erode, leading to rising trade deficits again and to downward pressure on the currency. After 2–3 years, the economic impact might be higher import tariffs, more regulation, lower productivity and lower immigration that would all lead to higher inflation but keep unemployment low. Potential growth would be likely to fall. Under pure inflation targeting, the Bank of England might hike interest rates, even sharply.

This scenario would involve less near-term economic disruption, but long-term decline and lower eventual average living standards, than under our global Brexit scenario.

### **The debate has not even started**

As highlighted above, the verdict on how much freedom future UK governments will have to set tariffs, regulations and immigration laws will depend on the future trade relationship with the EU, which we do not expect to be fully agreed within our forecasting horizon until 2022. So far, there seems to be remarkably little discussion about what the UK might do with any policy freedoms it would gain – for example, on services regulation – under the Chequers proposal. On the immigration side, a move towards ‘drawbridge Brexit’ currently seems more likely than one towards ‘global Brexit’, but that could change over time. We would expect a ‘global Brexit’ outcome to lead to more adjustment pain but higher future growth potential, while a ‘drawbridge Brexit’ would be more likely to yield the opposite. Future policy may also oscillate between the two or mix elements of both. On balance, we assume that Brexit will, in the long run, reduce potential growth due to less free trade and less free immigration from currently 1.9% to perhaps 1.6%. As this accumulates over time, the long-run cost of such an outcome would be substantial.

## **2.6 Conclusion**

Every now and again, we encounter investors saying ‘I would like to discuss the UK economy, but not Brexit’. That’s impossible. Output growth may look resilient to the daily flow of news on the process of leaving the EU, but it is currently low by historical standards and in international comparison. Forecasters at the time of the EU referendum in 2016 may have been wrong on the profile and many elements of economic growth, but the overall outcome so far is not much different from what was expected, with perhaps the most notable exceptions of the labour market and fiscal outcomes. We expect further growth weakness ahead of the 29 March 2019 deadline.

Our base case is that the UK and the EU will agree on a transition period during which trading relations with the EU will remain unchanged. That should unblock some of the investment and spending currently held back by uncertainty, raise the value of sterling and lower inflation in 2019. However, uncertainty will remain elevated as it looks likely that the EU and the UK will have to continue negotiating their future relations into the transition period. The final treaty on future relations will take time to be finalised, not least due to the political calendar on both sides and a possibly much more extensive and risky ratification procedure. In the meantime, we base our forecast on an economy where trade relations and immigration rules remain unchanged and where remaining slack in the economy (more in inefficient processes than in remaining unemployment and underemployment) support trend growth rates closer to 2% than common estimates of potential growth of around 1.5%.

### 3. Risks to the UK public finances

Carl Emmerson and Thomas Pope (IFS)

#### Key findings

- **Borrowing has now returned to pre-crisis levels, and is lower than successive post-referendum forecasts.** At £40 billion, or 1.9% of national income, the deficit in 2017–18 was the smallest annual borrowing figure since 2001–02. It was also over £18 billion lower than the OBR forecast in March 2017, and at a similar level to the last pre-referendum forecast in March 2016. This is not because the OBR’s economic forecasts were too gloomy in November 2016; rather, the public finances have proved more robust than expected given economic performance.
- **Developments since March suggest that the outlook for borrowing has improved.** Data from the first five months of 2018–19 suggest that borrowing this year might be around £5 billion lower than the OBR’s forecast of £37 billion. By 2022–23, it might be around £6 billion lower than the OBR’s forecast of £21 billion.
- **On the narrowest possible definition, ‘ending austerity’, as the Prime Minister has promised, would require the Chancellor to find £19 billion of additional public service spending relative to current plans by 2022–23.** That would leave unprotected day-to-day departmental spending just constant in real terms, and falling as a share of national income. It would still leave in place £7 billion of further cuts to social security.
- **Without much higher growth than forecast or substantial tax rises, ‘ending austerity’ is not compatible with eliminating the deficit by the mid 2020s.**
- **The deficit is down to pre-crisis levels, but debt is higher than it was by 50% of national income (over £1 trillion in today’s terms).** Running a deficit of 1.8% of national income (as forecast for 2018–19) in ‘good times’ could easily leave debt on a rising path as a share of national income over the long term, while in the past it would have been consistent with projected debt falling fairly quickly. This is due to a combination of low growth forecasts and student loan accounting flattering the headline borrowing measure.
- **There is a lot of uncertainty around any public finance forecast, but current levels of uncertainty are higher than usual.** Based on historical forecast accuracy, the central forecast implies a one-in-three chance that the deficit will be eliminated in 2022–23, but a similar chance that the deficit in that year will rise from its current level. Brexit uncertainties raise the chances of the deficit turning out a lot different from forecast.
- **We should worry that the Chancellor seems to treat forecast improvements and deteriorations differently.** Evidence since 2010 suggests that Chancellors are more willing to spend windfall improvements than to enact a fiscal tightening when the forecast worsens. If this pattern of behaviour were to continue, this effect would push up the central forecast of the deficit in 2022–23 by £10 billion.

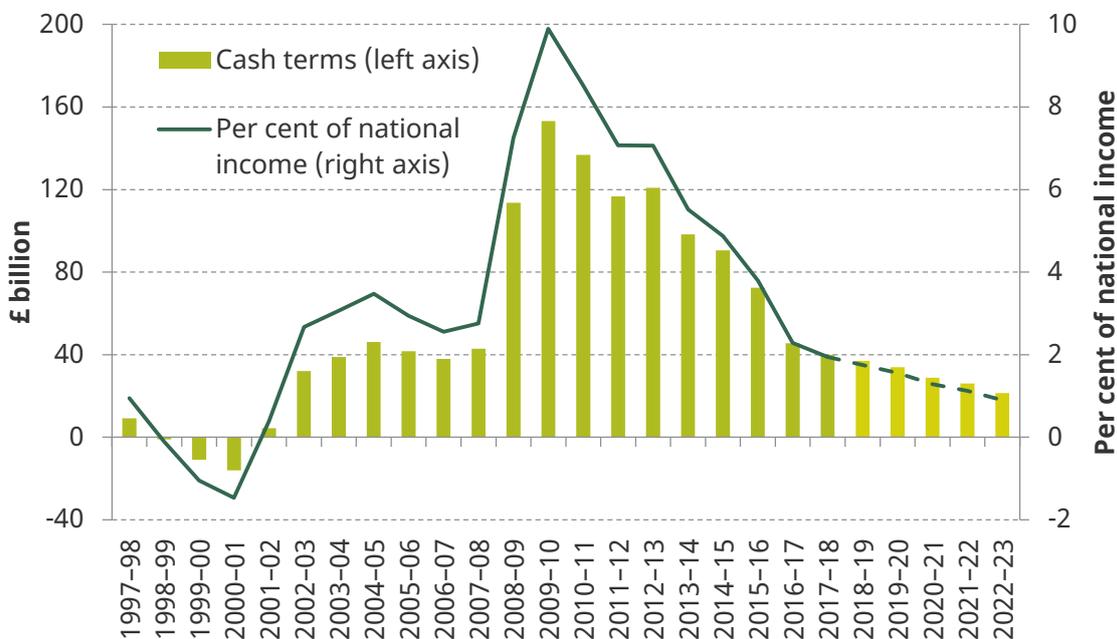
### 3.1 Introduction

Public sector net borrowing – the difference between how much the government spends and how much it raises in tax and non-tax revenues – has fallen substantially since its peak in 2009–10, when it stood at £153 billion or almost 10% of national income (see Figure 3.1). The latest estimates suggest that in 2017–18 this deficit was £40 billion. At 1.9% of national income, this is less than was borrowed in the years immediately prior to the financial crisis and associated recession and is in line with the average deficits run by UK governments over the 70 years prior to the crisis.

Despite this, the government’s stated aim requires that borrowing fall further: its overarching fiscal objective is to eliminate the deficit entirely by the mid 2020s. In recent times, UK governments have never had several successive years of budget surpluses: the last time there were four years in a row without a deficit was the period from 1948 to 1951.

The Office for Budget Responsibility (OBR) forecasts presented alongside the Spring Statement confirm that meeting the objective of eliminating the deficit will be far from easy. These imply that in 2022–23, some 13 years after then-Chancellor George Osborne first began cutting public sector borrowing, there will be a deficit of £21 billion or 0.9% of national income. With none of this deficit deemed to be due to temporary weakness in the economy – and with the ageing of the population projected to place increasing pressure on public spending – this implies further fiscal consolidation, for the next five years and beyond. And as set out in Chapter 4, there are considerable demands for more spending on public services than is implied by the Spring Statement plans: not least for the NHS

**Figure 3.1. Public sector net borrowing since 1997–98**



Note: Yellow bars and dotted line refer to the OBR’s March 2018 forecast.

Source: Office for Budget Responsibility, ‘Public finances databank’, September 2018, <http://obr.uk/data/>.

which, on its 70<sup>th</sup> birthday in June, was promised an additional £20 billion of spending by 2023.<sup>1</sup>

Given that making the necessary spending cuts or tax rises to eliminate the deficit would require short-term pain, one seemingly attractive option might be to abandon any further attempts at such consolidation altogether. However, despite the fact that borrowing is now back to normal levels, and is set to fall further in future years, public sector debt is over 85% of national income (compared with 35% of national income before the financial crisis) and is hardly set to fall over the next few years. This is due to a combination of forecasts for historically weak growth and accounting factors which mean that the stock of debt would rise even if the headline measure of the deficit suggests that 'borrowing' has been eliminated.

In this chapter, we set out the current state of the public finances, the outlook for the future and some of the key risks. We begin by assessing where the public finances stand – taking a detailed look at successive forecasts for borrowing in 2017–18, the latest full fiscal year, and the outlook for borrowing based on data so far this year (Section 3.2). The latest data suggest lower borrowing in both 2017–18 and 2018–19 than forecast by the OBR in March of this year.

Section 3.3 sets this in the broader context of the Spring Statement plans for the next five years for borrowing and debt, and compares these with the government's fiscal targets. It shows that debt is much higher as a share of national income than before the crisis, and highlights what different levels of borrowing and growth would imply for the projected ratio of government debt to national income (GDP) over the longer term. Even with the deficit eliminated, the public sector's debt-to-GDP ratio might be expected to fall only slowly over time.

Section 3.4 looks at how developments since March are likely to affect the medium-term fiscal outlook. These include changes to the underlying economic outlook, interest rates and equity prices. This section also includes estimates of some policy giveaways that previous commitments and practice might suggest are likely to be implemented. Overall (and depending on the extent to which the government continues to announce 'new' policy giveaways such as fuel duty freezes), this suggests that the UK public finances now appear to be in a slightly stronger position than was thought at the time of the inaugural Spring Statement in March. Chancellor Philip Hammond's speech then said this autumn's Budget would set the spending envelope for next year's Spending Review. If it does, a key decision will be the extent to which any loosening of this envelope is financed by fresh tax rises as opposed to increased borrowing.

Any forecast for the public finances is, of course, highly uncertain. But the substantial unknowns surrounding the nature of the UK's exit from the European Union and what effect that will have on the economy mean the forecasts accompanying the Autumn Budget will be more uncertain than most. Section 3.5 describes the extent to which different patterns of economic growth over the next few years – for example, any further deterioration in growth resulting from the UK's decision to leave the European Union – could be expected to affect the deficit and debt over the medium and longer term. These

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<sup>1</sup> Source: 'NHS funding: Theresa May unveils £20bn boost', 17 June 2018, <https://www.bbc.co.uk/news/health-44495598>.

uncertainties dwarf the expected improved outlook for the public finances seen since March.

The impact of any revision to the outlook for growth – either upwards or downwards – on the government’s finances would depend on how the Chancellor chooses to react to developments. Recent statements from Mr Hammond suggest an asymmetric approach. Specifically, on the one hand, he has described a desire to cut taxes or increase spending in the face of improvements in the fiscal outlook. But on the other hand, he has also stated a willingness to allow borrowing to increase when the fiscal position deteriorates. By examining how Mr Hammond and his predecessor as Chancellor, George Osborne, have reacted to public finance developments in the past, we quantify this tendency and consider the possible impact on the public finances going forwards. We estimate that continuing to react to fiscal developments in a similar way to which Mr Osborne and Mr Hammond have reacted to fiscal news since 2010 would add a further £11 billion to the deficit in five years’ time.

Section 3.6 concludes.

## 3.2 Where the public finances stand today

One of the key figures in any discussion of the public finances is the size of the deficit. This number – more formally known as public sector net borrowing – represents a measure of the difference between what the government spends and the total amount it receives in tax and non-tax revenues. Reducing the deficit has been a key fiscal aim of successive governments since 2010, when the deficit was almost 10% of national income. In this section, we look at borrowing in the latest fiscal year (2017–18) and consider how forecasts for borrowing in that year have evolved over time. This demonstrates the uncertainty that surrounds any one forecast for the public finances. We then turn to borrowing in the current year, describing the trends observed over the five months from April to August 2018, the impact they have had on the deficit so far this year, and the extent to which they might be likely to continue through to March next year.

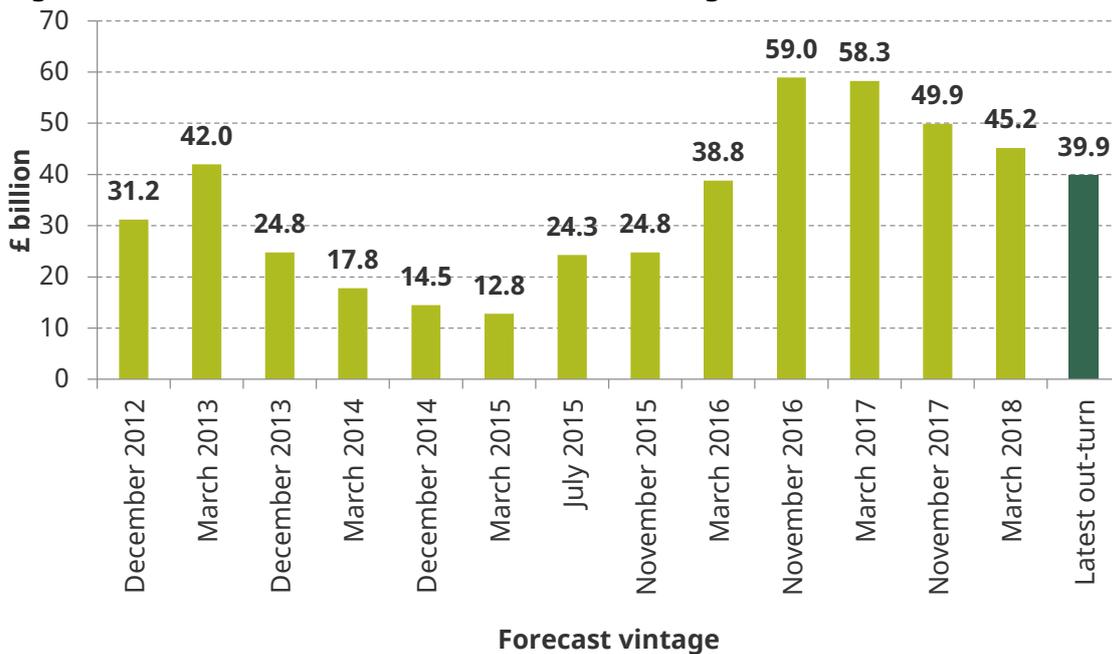
### Borrowing in 2017–18

The latest estimate for borrowing in the last full fiscal year (2017–18) is £39.9 billion, or 1.9% of national income. This is much reduced from a high of 9.9% of national income in 2009–10, and the deficit is now back to the long-run average that was run over the 60 years from 1948 to 2007. With public sector net investment in 2017–18 running at £41.2 billion, the current budget deficit (which ignores borrowing that has been used to finance investment spending) is estimated to have been in surplus – albeit by just £1.4 billion – for the first time since 2001–02. In contrast to total borrowing, this surplus on the current budget is smaller than the pre-crisis long-run average seen in the UK.<sup>2</sup>

Borrowing of £39.9 billion is lower than the estimate, made by the OBR and accepted by the Chancellor as the government’s own, at the Spring Statement in March. It is also

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<sup>2</sup> This is due to investment spending, which in 2017–18 is estimated to have been 2.0% of national income, being below the average of 3.0% of national income invested publicly over the 70 years up to 2016–17. In the 1960s and 1970s, there was much more substantial investment by nationalised industries and by local authorities (in particular on housing). See figure 7 of T. Clark, M. Elsby and S. Love, ‘Trends in British public investment’, *Fiscal Studies*, 2002, 23, 305–42.

**Figure 3.2. The fall, rise and fall of forecast borrowing in 2017–18**

Source: Office for Budget Responsibility, 'Historical official forecasts database' and 'Public finances databank', <http://obr.uk/data/>.

significantly lower than successive OBR forecasts since November 2016. Figure 3.2 shows every OBR forecast for borrowing in 2017–18 since December 2012 (when the first forecast for borrowing in that year was made). In March 2015, just prior to the May 2015 general election, the 2017–18 deficit was forecast to be only £12.8 billion. A combination of a somewhat weaker economic outlook and much policy loosening (as the newly elected Conservative government decided to shy away from its pre-election pledges to cut public spending, for example on social security) meant that a year later the forecast for borrowing in 2017–18 had increased to almost £39 billion.

In November 2016, there was a large downgrade to the economic forecast (and a corresponding increase in the deficit forecast) in the wake of the June 2016 vote to leave the European Union – which Mr Hammond decided not to offset with fresh tax rises or spending cuts. This led to the largest upwards revision to borrowing in 2017–18 between successive forecasts, with the forecast deficit rising by £20.2 billion.

Since then, however, the forecasts for borrowing in 2017–18 have been consistently revised downwards. The estimate at the time of the Spring Statement was £45.2 billion, while the latest estimated out-turn is even lower at £39.9 billion.

In effect, the public finance data are yet to reflect any worsening of the outlook since June 2016 – the latest estimate is that borrowing in 2017–18 was very close to that forecast in March 2016. This is despite the fact that – as set out in Chapter 2 – the economy has grown less quickly than had been forecast prior to the referendum. In particular, between the first quarter of 2016 and the first quarter of 2018, the economy is now estimated to have grown by 1.4 percentage points less in real terms (and a similar amount less in cash terms) than was forecast at the time of the March 2016 Budget (the last pre-referendum

forecast).<sup>3</sup> And in fact, this estimated growth is 0.2 percentage points below that forecast after the referendum in November 2016.

So the economy has performed worse than pre-referendum forecasts expected. And the better-than-expected public finance data are not explained by post-referendum OBR economic forecasts that were too gloomy. Based on its downgrade in economic growth compared with pre-referendum forecasts, we would expect government receipts in 2017–18 to have come in lower. But the March 2016 Budget forecast that government revenues in 2017–18 would total £745.8 billion was borne out almost exactly: the latest estimate is that they came in at £750.8 billion.<sup>4</sup>

What is particularly striking from Figure 3.2 is that borrowing in 2017–18 is now estimated to be over £18 billion (0.9% of national income) lower than was forecast in the March 2017 Budget, just before the start of that financial year. Errors of this size are not unprecedented for Spring forecasts of borrowing in the subsequent financial year, but this is bigger than the 0.7% of national income average absolute error in OBR forecasts at this stage of the year. It is notable that in the eight years to 2017–18, the OBR borrowing forecast from the March just prior to the financial year starting has been an overestimate on six occasions and an underestimate on just two.<sup>5</sup> This is some evidence that it has been consistently too gloomy about the public finances one year out.

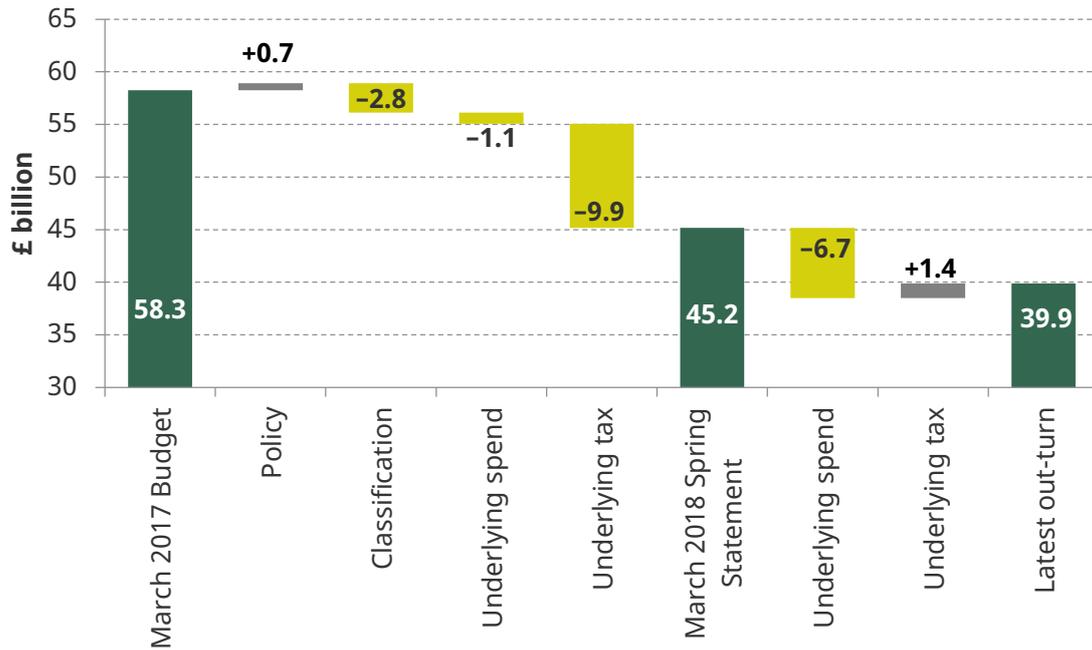
In Figure 3.3, we decompose the change in 2017–18 borrowing since the March 2017 Budget forecast into the net effect of new policy measures announced since March 2017, the net effect of classification changes, and the remaining ‘underlying’ changes (unrelated to policy or classification) which are perhaps best thought of as the true ‘forecast error’.

Between March 2017 and March 2018, new policy announcements had a relatively small impact on forecast borrowing, while a small reduction in forecast borrowing – of £2.8 billion – was due to classification changes (mainly the reclassification of English housing associations from the public sector to the private sector). The main driver of the overall reduction in forecast borrowing was an increase in forecast revenues of £9.9 billion (‘underlying tax’). This reflected greater receipts across a number of different taxes, including income tax, National Insurance contributions and VAT. A particularly important change was stronger-than-expected self-assessment receipts in January 2018, as the

<sup>3</sup> The economy is estimated to have grown by 3.0% in real terms and 7.1% in cash terms, relative to forecasts of 4.4% real-terms growth and 8.4% nominal growth. The size of the economy in cash terms is particularly important for the public finances (since a larger cash-terms economy would tend to increase cash receipts, while over the period up to March 2020 spending on public services is largely fixed in cash terms by the 2015 Spending Review and the rates of most working-age benefits are frozen in nominal terms).

<sup>4</sup> This increase in receipts relative to forecast is only very partially explained by new measures being announced and implemented since the March 2016 Budget: the net impact of changes over this period is estimated to have boosted receipts in 2017–18 by just £1.6 billion.

<sup>5</sup> The March 2012 forecast for 2012–13 and the March 2014 forecast for 2014–15 both underestimated borrowing. In the other direction, June 2010 (2010–11), March 2011 (2011–12), March 2013 (2013–14), March 2015 (2015–16), March 2016 (2016–17) and March 2017 (2017–18) all forecast greater borrowing than now appears to be the case. For a more detailed evaluation of in-year OBR forecasts – which in fact shows that, after adjusting for classification changes, the forecast from the March just prior to the financial year starting has been an underestimate seven times and an overestimate only once – see J. Taylor and A. Sutton, ‘In-year fiscal forecasting and monitoring’, Office for Budget Responsibility Working Paper 13, 2018, <http://obr.uk/download/working-paper-no-13-year-fiscal-forecasting-monitoring/>.

**Figure 3.3. Revisions to forecast public sector net borrowing in 2017–18 since March 2017**

Note: Yellow bars indicate a reduction in the borrowing forecast while grey bars indicate an increase. Underlying changes are forecasting changes not accounted for by policy or classification changes.

Source: Office for Budget Responsibility, 'Forecast revisions database', 'Historical official forecasts database' and 'Public finances databank', all available from <http://obr.uk/data/>.

knock-on effects of the April 2016 increase in the rate of dividend tax were weaker than expected.<sup>6</sup> By contrast, there was little revision to forecast spending.

While the reduction in the 2017–18 deficit, relative to forecast, was welcomed by the Chancellor, what matters for the long-run health of the public finances is the extent to which greater tax receipts and lower spending persist into future years. Between March 2017 and March 2018, the OBR revised down forecast borrowing in 2017–18 by £13.1 billion; however, its forecast for borrowing in 2021–22 was revised up by £9.2 billion. Underlying receipts, which in 2017–18 were revised up by £9.9 billion (as shown in Figure 3.3), were revised down by £15.7 billion in 2021–22. This was due to a downgrade in the economic forecast, reflecting a more pessimistic view of productivity growth and thus a smaller economy in the medium term. (By contrast, underlying spending, which in 2017–18 was revised down by £1.1 billion, was revised down by £2.2 billion in 2021–22.)

Since the March 2018 Spring Statement, the Office for National Statistics has released an estimated out-turn for the 2017–18 deficit. This has the 2017–18 deficit even lower than the March 2018 forecast (£39.9 billion rather than £45.2 billion). However, in contrast to the revision seen between March 2017 and March 2018, the improvement in the deficit between the March 2018 estimate and the latest estimated out-turn is entirely due to lower spending. Tax receipts are actually slightly below the forecast level (by £1.4 billion).

<sup>6</sup> The increase in the tax rate on dividend income from April 2016 was announced in the June 2015 Budget. As a result, some high-income individuals brought forward their dividend income from future years into 2015–16, boosting self-assessment receipts in January 2017 but depressing them in subsequent Januaries. Forecasting the scale of these kinds of responses is particularly difficult.

The main reason for lower-than-expected spending is lower local authority (LA) spending. While the OBR expected current spending by LAs to exceed their receipts last year, overall they added to their reserves by spending less on day-to-day expenditure than they received in income.<sup>7</sup> OBR analysis suggests this pattern of LAs adding to their reserves is unlikely to persist in the longer term given the funding pressures on, and statutory obligations of, local authorities.<sup>8</sup>

Overall, this exercise illustrates the difficulty of public finance forecasting, and the likelihood that the true borrowing outcome could be very different from forecast. While it is generally the path of the economy that will affect the public finances in the medium term, in the short term other factors can lead to economic forecasts deteriorating but public finance forecasts improving (and vice versa). We will return to the uncertainty surrounding fiscal forecasts later in the chapter, but first we ask whether this improvement to 2017–18 borrowing seems to be indicative of further improvements in the current fiscal year.

### **Borrowing so far in 2018–19**

Based on past experience, we should not be surprised if the public finances in 2018–19 differ substantially from the forecasts made in the March 2018 Spring Statement (which projected borrowing of £37.1 billion this year). And the public finance data so far this year indeed point to another downwards revision in the forthcoming Budget. Borrowing over the first five months of 2018–19 was 30% lower than the same five months of 2017–18.<sup>9</sup> If this pattern were to persist for the full year, borrowing would be around £28 billion. This would be £9 billion below the OBR forecast of £37.1 billion, and less than 1.5% of national income.

In fact, a significant part of the undershoot in borrowing over the past five months has been driven by lower investment spending and debt interest spending, both of which are likely to increase in the second half of the year to end up close to the OBR forecast for the year as a whole. On the other hand, lower day-to-day departmental spending may be more persistent: this might translate into departments underspending their budgets by perhaps around £1 billion more than the OBR currently assumes this year.

Total receipts from the three main taxes – PAYE income tax, National Insurance contributions and VAT – are all performing more strongly than expected. Because these receipts are collected consistently throughout the year, performance so far is a fairly reliable indicator of stronger-than-forecast full-year performance. If the strength of these revenues persists for the full year, they would contribute to total receipts being around £6 billion higher than forecast. However, weaker-than-anticipated receipts from corporation tax and stamp duty land tax will (if current weakness in receipts persists for the full year) offset this by around £2 billion.

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<sup>7</sup> Office for Budget Responsibility, 'Commentary on the public sector finances: August 2018', 2018, <http://obr.uk/monthly-public-finances-briefing/>.

<sup>8</sup> See box 4.4 of Office for Budget Responsibility, *Economic and Fiscal Outlook: March 2018*, <http://obr.uk/efo/economic-fiscal-outlook-march-2018/>.

<sup>9</sup> Source: Office for National Statistics, 'Public sector finances, UK: August 2018', Statistical Bulletin, 2018, <https://www.ons.gov.uk/economy/governmentpublicsectorandtaxes/publicsectorfinance/bulletins/publicsectorfinances/august2018>.

So based purely on the data so far this year, we might expect borrowing to be around £5 billion lower than forecast by the OBR in March – £1 billion from lower spending and £4 billion from a net improvement in tax receipts. This would leave the deficit at around £32 billion, or 1.5% of national income – below its long-run average and the lowest since the early 2000s.

If, as now seems likely, borrowing in 2018–19 does turn out lower than forecast in the March 2018 Spring Statement, then it would be the seventh occasion out of the nine fiscal years since the OBR began forecasting that the borrowing in the first year of the forecast horizon came out lower than anticipated.

### 3.3 The government’s fiscal objectives and the Spring Statement public finance forecasts

#### Revenues, spending and public sector net borrowing

The headline deficit this year is set to be the lowest as a share of national income since 2001–02 (when it was just 0.4% of national income), and the same will be true of the current budget deficit (which in 2001–02 was in surplus by 1.1% of national income).

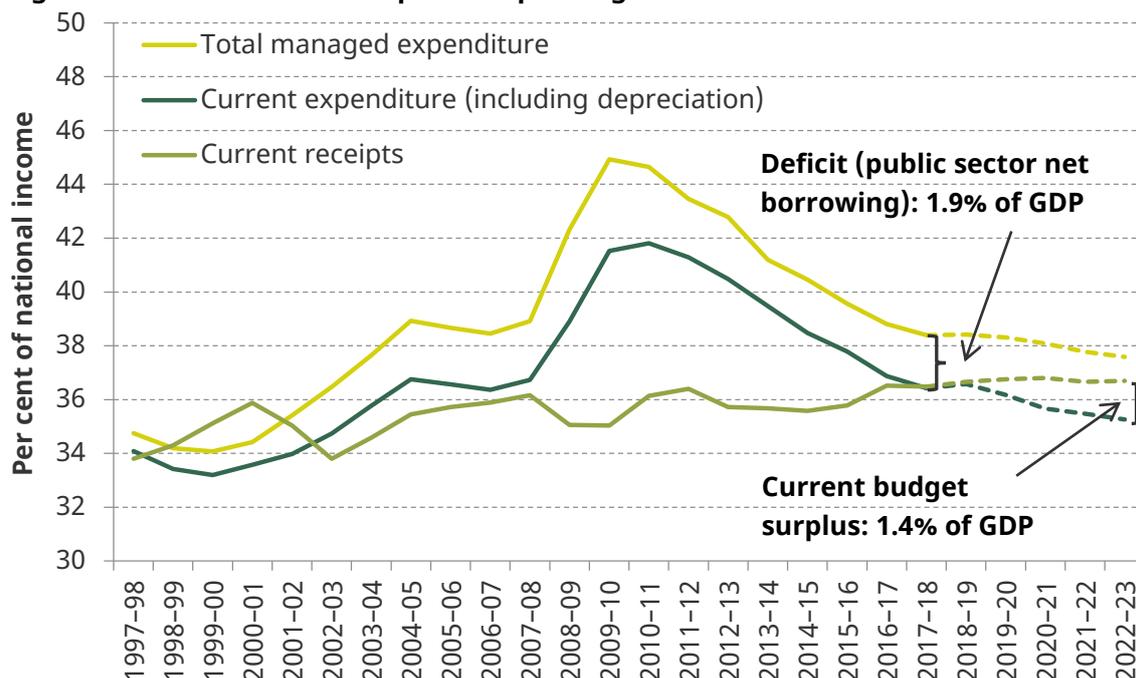
The government is planning further deficit reduction over the next few years. The plans set out in the Spring Statement are for the surplus on the current budget to grow to 1.4% of national income in 2022–23 (as shown in Figures 3.4 and 3.5).<sup>10</sup> This is set to be achieved by a further reduction in day-to-day spending as a share of national income (cutting this to its 2003–04 level as a share of national income) and a further small increase in government receipts as a share of national income (to a level not seen since the 1980s; for a longer-run time series of two potential measures of the tax burden, and a discussion, see Figure 5.1 of Chapter 5 and the surrounding text).

Over the next five years, the headline deficit is forecast to fall more slowly (by 1.0% of national income) than the current budget deficit. This is due to large increases to government investment pencilled in for 2020–21 and 2021–22 (as indicated by the growing gap between ‘total managed expenditure’, or overall government spending, and ‘current (day-to-day) expenditure’ in Figure 3.4). This increase in investment spending will boost the assets of the public sector (see Chapter 6) and – if spent well – will help contribute to economic growth.

The 1.0% of national income forecast fall in the deficit from 2017–18 would be sufficient to reduce it to 0.9% of national income in 2022–23 (£21.4 billion in that year). UK government borrowing (as a share of national income) has been lower than that level in only six years out of the last 40.

<sup>10</sup> Here we do not adjust the 2018–19 forecast from the Spring Statement, but graphs do incorporate the latest out-turn for 2017–18 borrowing.

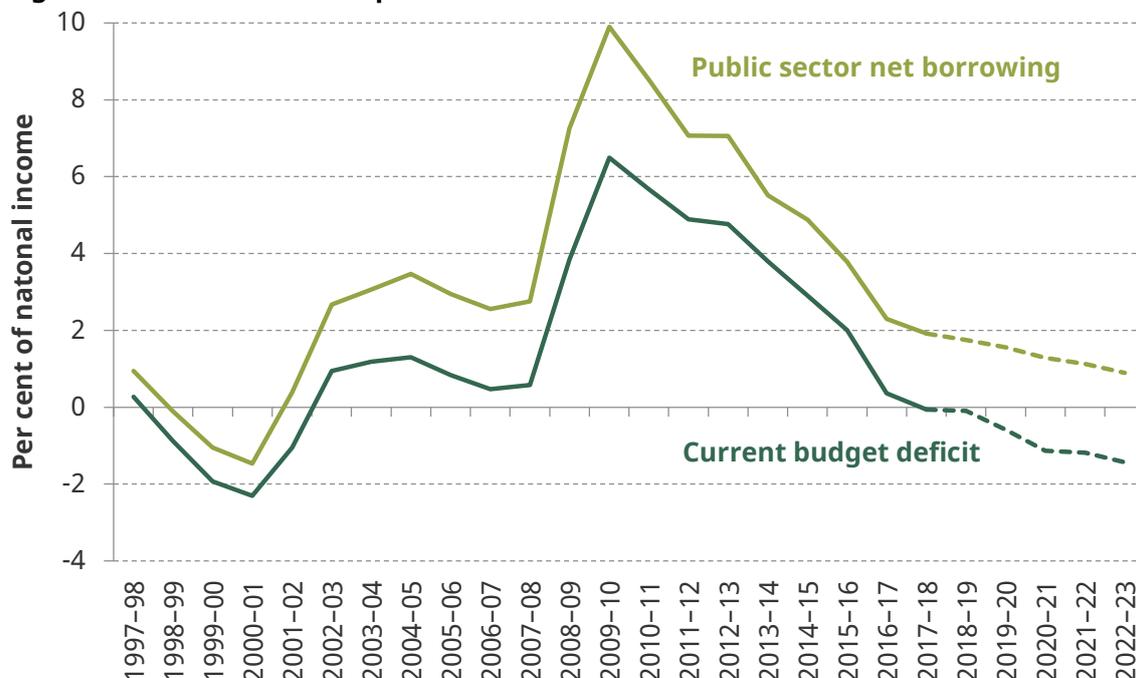
**Figure 3.4. Public sector receipts and spending since 1997-98**



Note: 'Total managed expenditure' is total government spending. 'Current expenditure' excludes spending on investment, while 'current receipts' encompasses total government revenue (from tax and non-tax sources). Public sector net borrowing is the difference between total managed expenditure and current receipts, while the current deficit is the difference between current expenditure and receipts.

Source: Office for Budget Responsibility, 'Public finances databank', July 2018, <http://budgetresponsibility.org.uk/data/>.

**Figure 3.5. Measures of the public sector deficit since 1997-98**



Note and Source: As for Figure 3.4.

### Box 3.1. Fiscal targets

#### The government's fiscal targets

The Charter for Budget Responsibility<sup>a</sup> sets out the government's fiscal targets, against which the OBR assesses compliance. The most recent update is from before the last general election and states that the government has three specific fiscal targets:

- cyclically adjusted public sector net borrowing – that is, headline borrowing adjusted for the estimated impact of the ups-and-downs of the economic cycle – to be less than 2% of national income in 2020–21;
- public sector net debt to be lower as a share of GDP in 2020–21 than in 2019–20;
- spending on 'welfare-in-scope' in 2022–23 to be below the cap set in November 2017, with compliance assessed in the first fiscal event of the next parliament.

There is no perfect fiscal target; there is no one measure that is best suited to guide policy in all time periods and in all circumstances. But there are some obvious issues with each of the targets set out above. There are sensible reasons to attempt to adjust for the economic cycle when looking at borrowing, but what about borrowing caused by other factors that are known to be temporary, such as one-off revenues or spending items? There are good reasons to want debt to fall as a share of national income over the longer term, but how can we be sure that there won't be good reasons why it should be higher in March 2021 than in March 2020? The government should carefully consider how best to respond to unintended increases in social security spending but, rather than wait until the next parliament, why not retain annual assessments as was the case with Mr Osborne's version of this fiscal target?

The Charter also says that the government's overall fiscal objective is 'return the public finances to balance at the earliest possible date in the next Parliament'. An oddity of this is that it links the timing of deficit reduction to the timing of general elections. Given the Charter was legislated in January 2017 – and knowing it was not intended to be a rolling target – it could be interpreted as meaning as soon as possible over the period June 2017 to May 2022 (which is what has turned out to be the 'next parliament') or the period May 2020 to May 2025 (what the Chancellor might have expected at the time to be the 'next parliament' given the Fixed-term Parliaments Act). This lack of clarity means the OBR assesses compliance against both of these timetables.

In fact, it appears that the government is not aiming to eliminate the deficit on either of these timescales. The Conservative party manifesto of 2017 stated that 'We will continue with the fiscal rules announced by the chancellor in the autumn statement last year, which will guide us to a balanced budget by the middle of the next decade';<sup>b</sup> the government's Autumn 2017 Budget used similar language.<sup>c</sup>

A key conclusion from this is that the government should review and update the Charter for Budget Responsibility as this would allow the OBR to assess compliance against the government's actual fiscal objectives.

**Labour's 'fiscal credibility rule'**

The Labour party has two fiscal rules which it intends to implement in the event of forming a government.<sup>d</sup>

The first is a rolling forward-looking target, which aims to run a current budget deficit of 0 five years out. This was adopted by Mr Osborne as Chancellor in 2010 and by Ed Balls as Shadow Chancellor in 2015. The forward-looking nature of the target has much to commend it (indeed it was recommended in successive IFS Green Budgets prior to 2010<sup>e</sup>), allowing a Chancellor time to respond flexibly to shocks while still returning the deficit to its planned path over the medium term. By targeting a current budget balance, the target would allow for borrowing to fund investment spending – this allows the government to invest more, for example if new opportunities arise or interest rates fall. But on its own it would not place any constraint on public sector net debt.

Labour's second rule requires that the debt-to-GDP ratio is lower at the end of the next parliament than at the beginning. This suffers from the same problem as the government's debt target – depending on circumstances, it may be better for debt to be a greater share of national income at the end of a parliament than at the start. As with the target set out in the Charter for Budget Responsibility, it is also a fiscal target based on the length of a parliament which, to say the least, is odd.

Labour acknowledges one reason why these rules might not be appropriate – they would be suspended if the Monetary Policy Committee of the Bank of England deemed monetary policy to be at its effective lower bound. This is sensible, though there might be other circumstances when it would be better to suspend (or break) the rules rather than keep to them.

Under the plans set out in their 2017 manifesto, Labour would not find it easy to meet their fiscal targets. First, their planned nationalisation programme would add substantially to debt (see Chapter 6), breaching their second target. Even if the additional liabilities acquired from the newly nationalised bodies were ignored (perhaps on the basis that the assets acquired at the same time would generate a flow of substantial revenues), Labour's plan to increase public sector net investment – by an additional £250 billion over 10 years – would require a current budget surplus to be delivered (i.e. their first fiscal rule to be met with room to spare), and maintained, if debt is to fall as a share of national income over time.<sup>f</sup>

<sup>a</sup> HM Treasury, 'Charter for Budget Responsibility: Autumn 2016 update', legislated January 2017, <https://www.gov.uk/government/publications/charter-for-budget-responsibility-autumn-2016-update>.

<sup>b</sup> Page 14 of the Conservative party's general election manifesto, 2017, <https://www.conservatives.com/manifesto>.

<sup>c</sup> Paragraph 1.33 of HM Treasury, *Autumn Budget 2017*, <https://www.gov.uk/government/publications/autumn-budget-2017-documents>.

<sup>d</sup> <https://labour.org.uk/manifesto/> and <http://labour.org.uk/wp-content/uploads/2017/10/Fiscal-Credibility-Rule.pdf>.

<sup>e</sup> See, for example, R. Chote, C. Emmerson and C. Frayne, 'The fiscal policy framework', in R. Chote, C. Emmerson, R. Harrison and D. Miles (eds), *The IFS Green Budget: January 2006*, <https://www.ifs.org.uk/green-budget/2006>.

<sup>f</sup> See Labour's general election manifesto, 2017, <https://labour.org.uk/manifesto/manifesto-resources/>.

### End austerity and yet still eliminate the deficit?

The Chancellor has set out three fiscal targets: to keep cyclically adjusted borrowing below 2% of national income in 2020–21; to have debt falling as a share of national income in that same year; and to have spending on ‘welfare-in-scope’ in 2022–23 below a prescribed cap. These are described in Box 3.1; but a key fact is that, under current forecasts, all are on course to being met.

More challenging is the government’s overarching fiscal objective: to eliminate the deficit by the mid 2020s (see Box 3.1 for details of the confusion over the actual timescale for this). Meeting this objective would represent a significant break from the past; the UK government has only run an overall budget surplus seven times in the last 60 years. Keeping the budget in surplus (which would presumably be the intention) would be an even more significant change: the last time an overall budget surplus was delivered for four consecutive years was the period from 1948 to 1951.

At the same time, Prime Minister Theresa May has recently promised an end to austerity: in her speech to the Conservative party conference, she stated: ‘A decade after the financial crash, people need to know that the austerity it led to is over and that their hard work has paid off’.<sup>11</sup>

Could a commitment to end austerity be consistent with one to eliminate the deficit by the mid 2020s? This will depend on what is meant by austerity. If ‘austerity’ is defined as reducing the (cyclically adjusted) deficit then, on these forecasts, ending austerity now is incompatible with the government’s overarching fiscal objective. There are good reasons for defining it as such. Reducing the deficit means the government is effectively taking money out of the economy this year relative to last year. As shown in Figure 3.5, despite 13 years of deficit reduction, the Spring Statement forecasts suggest we will still be running a deficit in 2022–23. And if the deficit fell in the years beyond 2022–23 at the same rate as it is forecast to fall on average over the previous four years, we would not eliminate the overall deficit until 2027. So – if these forecasts are correct – meeting the government’s overarching fiscal objective requires not just further deficit reduction, over and above that already planned, but a faster pace of deficit reduction too.

But there are other possible definitions of austerity. The spending plans through to 2022–23 imply a continued squeeze on the day-to-day spending budgets of central government departments in the period to be covered by the next Spending Review (see Chapter 4 for more details): spending commitments to the NHS, defence and aid imply that the day-to-day budgets of those departments will increase by £13 billion in real terms between 2019–20 and 2022–23 (see Table 4.2). Over that period, overall day-to-day spending of government departments is set to fall by £2 billion, so that would imply cuts of £15 billion to the day-to-day budgets of unprotected departments over those three years. If ‘ending austerity’ means no further real cuts to unprotected departments beyond 2019–20 then this would require an additional £15 billion of spending by 2022–23. To meet this level of spending while keeping deficit reduction on course over this period would require tax rises of a similar size (see Chapter 5 for possible tax-raising options).

<sup>11</sup> <https://www.telegraph.co.uk/politics/2018/10/03/theresa-mays-conservative-party-conference-speech-full-transcript/>.

Of course, even this might not be considered an end to austerity for public spending. Overall day-to-day departmental spending is set to fall by £3 billion in real terms between 2018–19 and 2019–20, with unprotected departments (i.e. those outside of Health & Social Care, Defence and International Development) set to experience real-terms cuts of £4 billion. Furthermore, cuts to working-age benefits are affecting still more families – not least with the final year of the four-year freeze to most working-age benefits scheduled to occur in April 2019. Social security policies already announced, and mostly in place, are set to save a further £7 billion in 2022–23 in today’s terms over and above the savings in 2018–19.

In addition, on these forecasts, further fiscal consolidation (in the form of spending restraint or tax rises) would still be required beyond the forecast horizon to eliminate the deficit by the ‘middle of the next decade’. On current forecasts, a deficit of 0.9% of national income is forecast to remain in 2022–23. As Table 3.1 shows, eliminating this solely through real cuts to day-to-day department spending (i.e. leaving receipts and other spending unchanged as a share of national income) would require a further cut of £4½ billion in real terms: a £6½ billion cut between 2019–20 and 2025–26. A real cut of this size would see day-to-day departmental spending fall by 1.6% of national income between 2019–20 and 2025–26, equivalent to £34 billion in today’s terms. This would come on top of the 0.3% of national income (£7 billion) cut to day-to-day spending as a share of national income next year.

**Table 3.1. Potential departmental spending cuts if deficit is to be eliminated in 2025–26**

	<b>Spring Statement plans: 2019–20 to 2022–23</b>	<b>Potential scale of further cuts, 2022–23 to 2025–26</b>	<b>Total: 2019–20 to 2025–26</b>
Real cut to day-to-day DEL (implied by Spring Statement / required to eliminate a 0.9% of national income deficit between 2022–23 and 2025–26)	£2bn	£4½bn	£6½bn
Cut to day-to-day DEL as a % of national income	0.7% of GDP £15bn	0.9% of GDP £19bn	1.6% of GDP £34bn
<i>Memo: Estimated pressure on public spending from an ageing population</i>	<i>0.2% of GDP £4bn</i>	<i>0.4% of GDP £9bn</i>	<i>0.6% of GDP £13bn</i>

Note: The pressures on public spending from an ageing population are projected to be more acute over the five years from October 2020 onwards largely because no increases in the male or female state pension age are legislated for that period, whereas increases are scheduled until October 2020. The first and second rows of the table are not additive: the cut to day-to-day spending as a share of national income by 1.6% of national income in the final column (for example) incorporates the £6½ billion real-terms cut.

Source: Authors’ calculations using data from Office for Budget Responsibility, *Fiscal Sustainability Report: July 2018*, <http://obr.uk/fsr/fiscal-sustainability-report-july-2018/> and Office for Budget Responsibility, *Fiscal Sustainability Report: July 2012*, <http://obr.uk/fsr/fiscal-sustainability-report-july-2012/>.

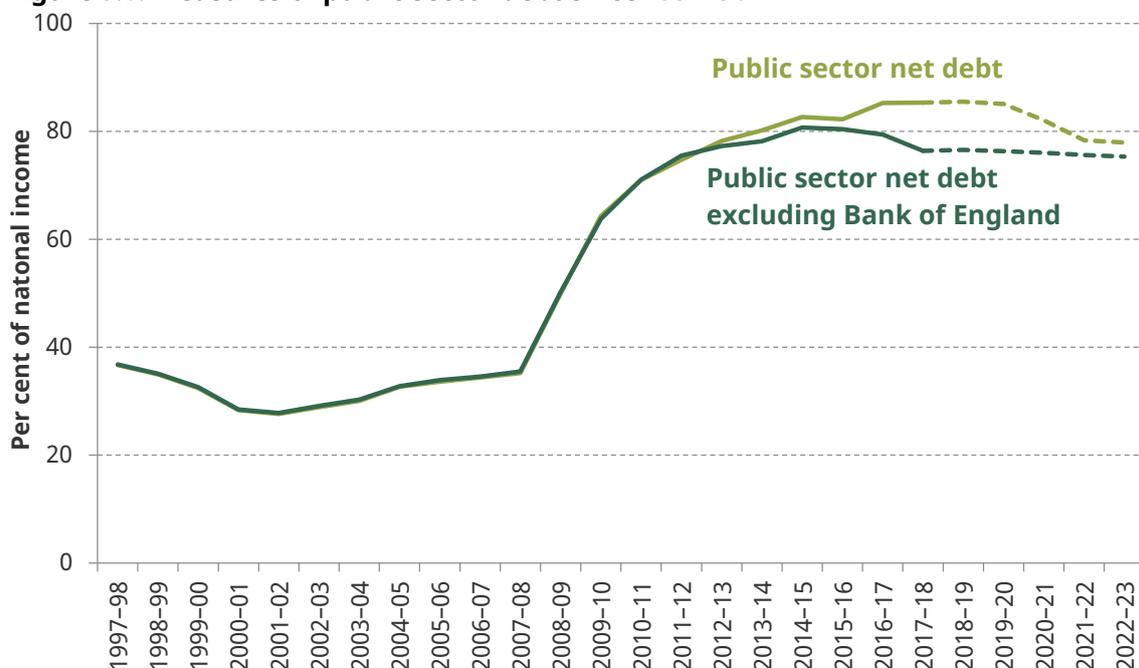
This means that, if 'austerity' is defined as maintaining day-to-day spending on public services as a share of national income at its 2018–19 level, then a substantial increase in the overall tax burden (or, potentially, deep cuts to social security spending) – totalling £41 billion (£34 billion + £7 billion) would be required to 'end austerity' for public services and still be on course to eliminate the deficit by the mid 2020s.

This is happening in the context of an ageing population adding to pressures on public spending. The baby boomers – born around 1950 – are reaching the stage in their lives where they make greater use of NHS and social care services. Furthermore, once the male and female state pension ages have risen to 66 in October 2020, they are not planned to increase again until 2026–27. These ageing pressures, ignoring any other cost pressures, are projected to add 0.4% of national income to public spending between 2022–23 and 2025–26. In today's terms, this is around £9 billion. This is greater than the equivalent pressures between 2019–20 and 2022–23, which have been projected to amount to 0.2% of national income (or around £4 billion). So even if the deficit is reduced to 0.9% of national income in 2022–23, another 0.4% of national income of fiscal tightening would be required just to offset the increase in spending arising from the ageing of the population over the subsequent three years.

### Public sector net debt over the next five years

If one were to focus purely on the deficit as a measure of the health of the public finances, one would conclude that things were now 'back to normal' after eight years of consolidation. Public sector net debt – broadly the sum of all government borrowing to date – on the other hand is now around 85% of national income (Figure 3.6). This is more than twice its 2008 level as a share of national income and at its highest level since 1967.

**Figure 3.6. Measures of public sector debt since 1997–98**



Source: Office for Budget Responsibility, 'Public finances databank', July 2018, <http://budgetresponsibility.org.uk/data/>; chart 4.14 of Office for Budget Responsibility, *Economic and Fiscal Outlook: March 2018*, <http://obr.uk/efo/economic-fiscal-outlook-march-2018/>.

Debt has been higher before: during the Second World War it grew to a peak of just over 250% of national income, and it remained above 100% of national income for the 80 years from 1779 to 1858 and the 47 years from 1916 to 1962.<sup>12</sup> But outside of World Wars the increase in debt as a share of national income experienced over the last decade is unprecedented in modern times.

While the headline measure of debt is due to fall as a share of national income between 2019–20 and 2021–22, this is in fact driven by the effect of Bank of England loans made to private sector banks. When the loans were offered to banks in 2016–17 and 2017–18, this measure of debt rose: the liabilities incurred by the public sector to make the loans added to debt, but the assets that were acquired did not reduce it (since public sector net debt is only net of short-term financial assets, which did not include these loans). There will be a corresponding fall in public sector net debt when the loans are repaid, which is due to occur in 2020 and 2021. This will help the Chancellor meet his target of ensuring public sector net debt (as a share of national income) is lower in March 2021 than in March 2020. However, as Figure 3.6 shows, stripping out the effect of the Bank of England, debt is forecast to fall by only 1.2% of national income between 2018–19 and 2022–23. It would not take much by way of lower-than-forecast growth or higher-than-forecast deficits for it not to fall at all: for example, if growth in 2020–21 were just 0.2ppt lower than forecast, then this would be expected to wipe out the 0.3% of national income fall in public sector net debt (excluding the effect of the Bank of England) forecast between March 2020 and March 2021.<sup>13</sup>

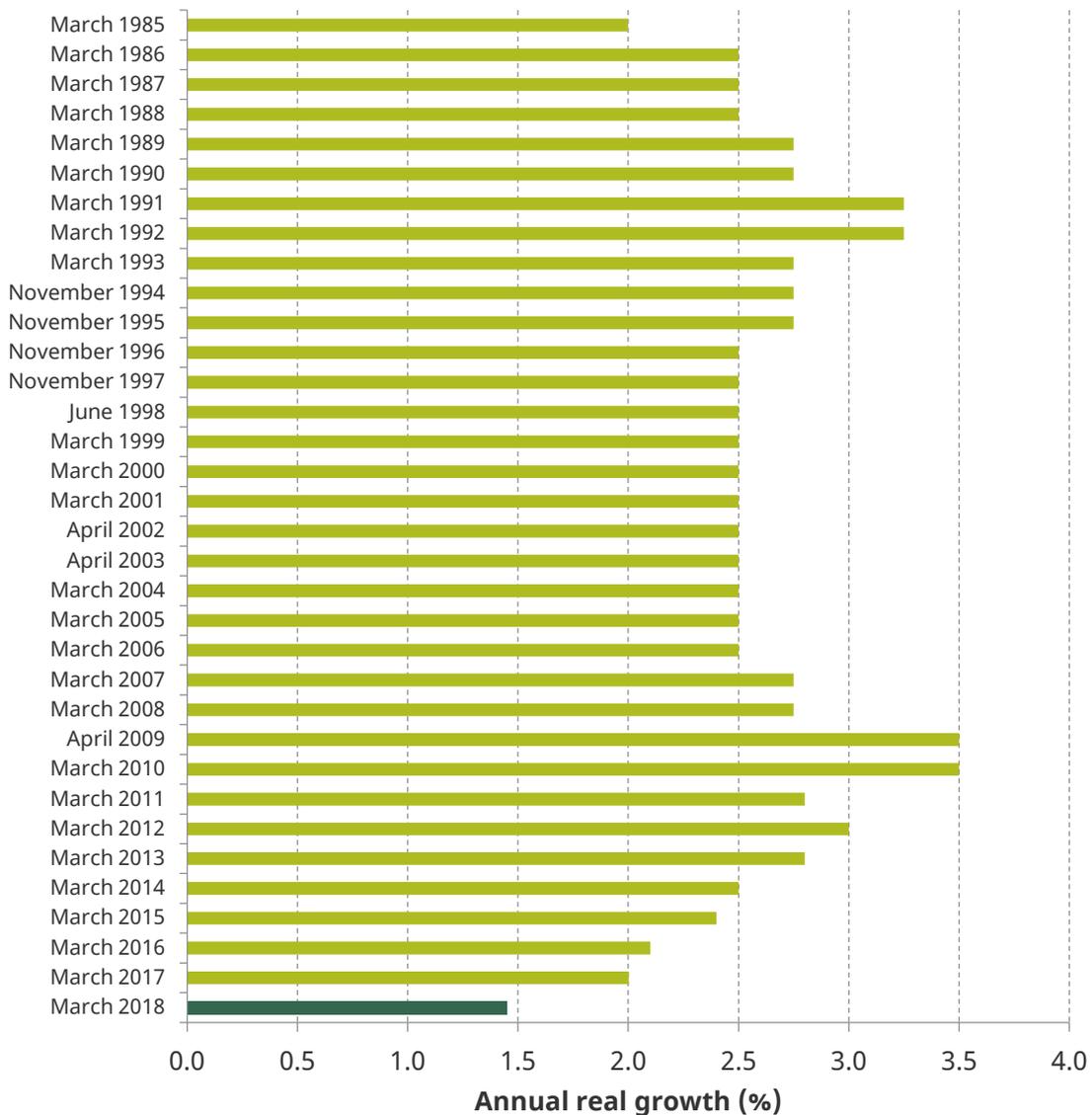
It is unusual that the burden of government debt is set to fall so slowly when the deficit is forecast to be so small. In 2022–23, the deficit is forecast to be only 0.9% of national income, but the debt-to-GDP ratio is set to fall by just 0.3% of national income. In 1990–91, when the deficit was also 0.9% of national income, public sector net debt fell by 1.4% of national income. There are two factors driving this slow fall in the debt-to-GDP ratio: growth is forecast to be extremely sluggish and the headline statistic of public sector net borrowing does not fully capture all of the increase in debt each year. Between them, these mean that if public sector net borrowing in 2022–23 were 1.2% of national income (i.e. just 0.3% of national income, or £6 billion in today's terms, larger than currently forecast) – easily low enough to be consistent with falling debt in the past – debt would not fall between March 2022 and March 2023.

### Very weak growth forecast for the next five years

Faster economic growth would, all else equal, reduce the UK's debt as a share of national income. However, cumulative real GDP growth in the five years from 2017 to 2022 is forecast to average only 1.5% per year, with no faster growth in sight even at the end of this period. This is significantly slower medium-term growth than has typically been forecast. Figure 3.7 shows the final year-of-forecast GDP growth rate for medium-term forecasts since the mid 1980s. The March 2018 forecast is more pessimistic than previous forecasts by some distance: it was a substantial downgrade on that made 12 months earlier, which itself was the most pessimistic Spring forecast for final year-of-forecast growth since March 1985.

<sup>12</sup> Source: Bank of England, 'A millennium of macroeconomic data', version 3.1, August 2018, <https://www.bankofengland.co.uk/statistics/research-datasets>.

<sup>13</sup> Source: Authors' calculations based on table 5.5 of Office for Budget Responsibility, *Economic and Fiscal Outlook: March 2018*, <http://obr.uk/efo/economic-fiscal-outlook-march-2018/>.

**Figure 3.7. Final year-of-forecast real growth forecasts since 1985**

Note: One forecast per calendar year is shown. This is the Spring forecast unless the Autumn forecast covers a longer time horizon.

Source: Office for Budget Responsibility, 'Historical forecasts database', <http://obr.uk/data/>.

If, rather than growing in line with the OBR forecast, the economy grew in line with the average in the 50 years to 2008 (2.7% per year), just the 'denominator effect' of higher national income (i.e. ignoring the fact that faster growth would also deliver greater tax receipts) would mean debt would be 73.8% of national income in 2022–23 (rather than 77.9%). That would almost quadruple the projected fall in the debt-to-GDP ratio (ignoring the impact of Bank of England loans) between now and then, even if the government borrowed exactly as much as it is planning to now. Put another way, if the economy were to grow at its long-run average, the government could borrow an extra £27 billion a year for the next four years (£107 billion in total) and still have the same debt-to-GDP ratio in 2022–23 as is currently forecast. Sluggish growth is thus playing an important role in slowing the rate at which the debt ratio is set to fall over the next few years.

### Public finance treatment of student loans<sup>14</sup>

Weak forecast growth is an important determinant of why historically low levels of public sector net borrowing are not translating into the debt-to-GDP ratio declining quickly. Another important factor is a mismatch between public sector net borrowing and the annual increase in the cash value of debt. Much of this is driven by the treatment of student loans in the public finances. New loans to students in 2022–23 are forecast to total £22.0 billion. These loans are income-contingent (the repayments due depend on the graduate's earnings), and are written off entirely 30 years after graduation. Based on earnings projections, only around half of the principal being loaned out is expected to be repaid. So these loans come with a considerable taxpayer subsidy.<sup>15</sup>

Despite this, at the point when loans are taken out by students, they do not add at all to public sector net borrowing. Furthermore, as loans accrue interest over time – at a high rate of up to RPI plus 3 percentage points for high-income graduates – the amount of money owed to the government rises, which in turn reduces public sector net borrowing (since the interest owed is scored as a non-tax receipt of government). But the majority of interest is expected never actually to be paid to the government: interest on the loans only begins to be paid off after principal is paid off in full, and many loan recipients will never pay any accrued interest. This accrued interest is rising quickly over time to substantial levels: while it reduced public sector net borrowing by £3.2 billion in 2017–18, it is forecast to reduce the deficit by £7.5 billion in 2022–23.

Because the stock of student loan debt increases over time, the impact of this accrued interest is set to increase further, reducing the deficit by 0.7% of national income (£15 billion in today's terms) by 2035. The fact that loans are not fully repaid would only be reflected in government borrowing when the loans are written off (in over 30 years' time). Overall, the borrowing numbers will continue to be flattered by this treatment of student loans over the longer term – and in perpetuity as long as the current student loans system remains in place.

In many ways, the treatment of student loans for the headline measure of debt is the reverse of the treatment for borrowing. Student loans only affect public sector net debt when cash transfers are made – either from the government to students or from graduates to the government. As a result, debt increases by the full value of the loan in the year it is made (even though the government has acquired a financial asset with some considerable value), and is only reduced in future years as repayments are made. Debt is not affected by loan write-offs or the accrual of interest on the loans.

In 2022–23, when the outstanding stock of student debt will have reached £190 billion,<sup>16</sup> new student loans are forecast to *increase* public sector net debt by £19.1 billion

<sup>14</sup> The analysis in this section ignores a further twist which occurs if the student loan book is sold by the government. If that happens, public sector net debt is reduced by the amount the loan book is sold for. But since the sale would count as a financial asset, it would not affect public sector net borrowing. As a result, remarkably, the subsidy to students would not increase borrowing at any point in time – in other words, student loans would flatter the headline deficit measure indefinitely, with write-offs never affecting borrowing.

<sup>15</sup> Source: Chapter 5 of C. Belfield, C. Farquharson and L. Sibieta, *2018 Annual Report on Education Spending in England*, IFS Report R150, 2018, <https://www.ifs.org.uk/publications/13306>.

<sup>16</sup> Supplementary table 2.1 of Office for Budget Responsibility, *Fiscal Sustainability Report: July 2018*, <http://obr.uk/fsr/fiscal-sustainability-report-july-2018/>.

(£22.0 billion of new loans, net of £2.9 billion of loan repayments) but to *reduce* public sector net borrowing by £7.5 billion (due to the accruing interest on the student loan book). Neither of these numbers reflects the true economic cost of the student loan system in that year. The borrowing treatment fails to recognise that a substantial loan has been made that is not expected to be repaid in full and therefore effectively represents a subsidy to students of around £10 billion.<sup>17</sup> However, the debt treatment fails to recognise that the government is effectively purchasing an asset – the expected future stream of student loan repayments – which, while equal to far less than the full value of the loan, still has considerable value (worth around £12 billion on the £22.0 billion of loans made in 2022–23). Debt will more fully reflect the true economic impact in future years as repayments increase.

This rather odd accounting treatment of student loans results from the fact that they are treated as a financial asset, and that the Office for National Statistics (ONS) follows international guidance on how this should be done. The ONS is working with international organisations to change the accounting guidance for these types of assets,<sup>18</sup> and has been supported by a recent OBR working paper laying out alternative accounting guidelines.<sup>19</sup> However, while the current system remains in place, the borrowing numbers will continue to flatter the public finances in this respect, while the debt figures will be excessively gloomy. Specifically, a more reasonable treatment would count about half of student loans as borrowing – adding around £10 billion a year (0.5% of national income) to this measure – and around half of the outstanding liability as an asset likely to be repaid – which would take around 4% of national income off the measure of debt in 2022–23.<sup>20</sup>

### Public sector net debt over the longer term

One reason to be concerned about debt at high levels (currently 85% of GDP) is that it may leave the UK with limited fiscal space to deal with unexpected adverse economic events in the future. All else equal, a lower level of debt would mean that the government could allow debt to rise by more without being at risk of exhausting its fiscal space. In 2009, the then-Labour government allowed the deficit to rise in the face of a weakening economic situation, both through the ‘automatic stabilisers’ (such as greater spending on benefits for those not in paid work and on in-work tax credits) and through an active fiscal stimulus package – a combination of discretionary tax cuts and spending increases aimed at helping limit the length and depth of the recession. As we have shown, the deficit has only now been returned to pre-crisis levels. Public sector net debt has increased by 50% of national income since 2008 and we might worry about whether the option to allow it to rise by a similar (or even greater) amount should another substantial adverse shock hit is still available.

Obviously we don’t know when the next significant downturn will hit. The OBR’s inaugural Fiscal Risks Report – published in July 2017 – judged that, based on past experience ‘the

<sup>17</sup> 46.8% of £22.0 billion. Source: Chapter 5 of C. Belfield, C. Farquharson and L. Sibieta, *2018 Annual Report on Education Spending in England*, IFS Report R150, 2018, <https://www.ifs.org.uk/publications/13306>.

<sup>18</sup> See <https://www.ons.gov.uk/economy/governmentpublicsectorandtaxes/publicsectorfinance/articles/lookingaheaddevelopmentsinpublicsectorfinancestatistics/2018#treatment-of-student-loans>.

<sup>19</sup> J. Ebdon and R. Waite, ‘Student loans and fiscal illusions’, Office for Budget Responsibility Working Paper 12, 2018, <http://cdn.obr.uk/WorkingPaperNo12.pdf>.

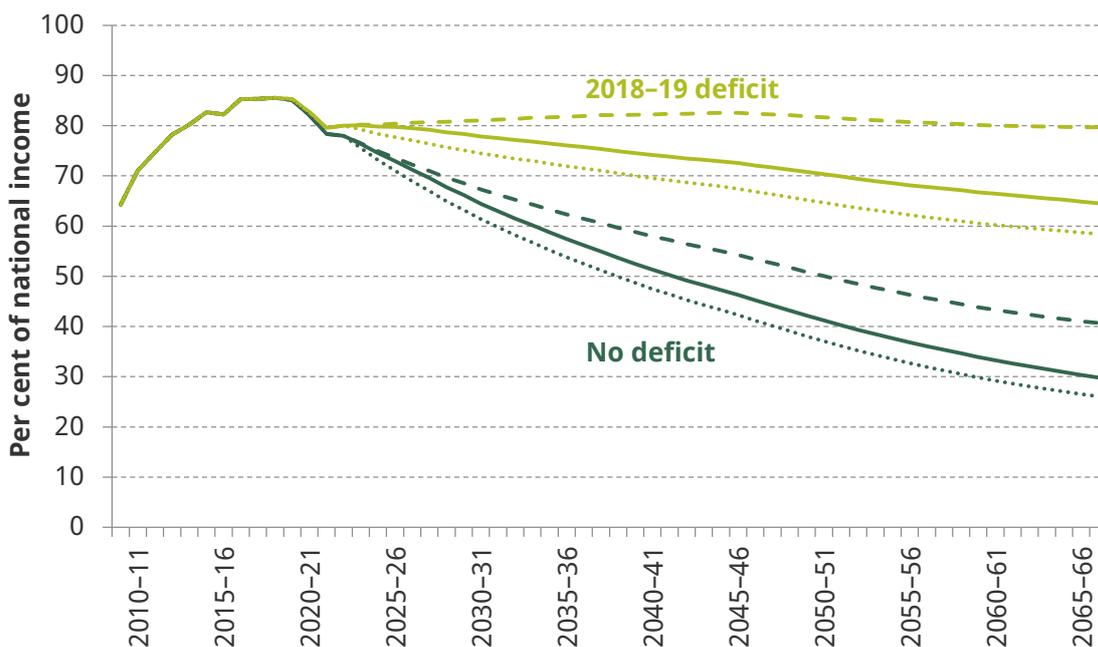
<sup>20</sup> Source: Supplementary table 2.1 of Office for Budget Responsibility, *Fiscal Sustainability Report: July 2018*, <http://obr.uk/fsr/fiscal-sustainability-report-july-2018/>.

chance of a recession in any five-year period is around one in two' and 'one might expect the UK to experience a financial crisis roughly every 20 years', although, of course, the next recession and financial crisis may not (and hopefully will not) be as large as the most recent one.

Figure 3.8 sets out what different levels of the deficit would imply for the path of debt going forwards. The solid lines take the OBR's central estimates of the UK's growth rate (which averages 2.1% a year over the next 50 years, compared with 2.7% a year over the 50 years to 2008).<sup>21</sup> The dashed lines take a more pessimistic scenario where the weak growth forecast for 2022–23 (of just 1.45%) is assumed to persist over the longer term, while the dotted lines present an optimistic scenario in which the economy grows at 2.7% per year, in line with the long-run pre-crisis average. In all scenarios, we assume that borrowing outside that counted against public sector net borrowing remains unchanged as a share of national income.

The different coloured lines denote different paths for public sector net borrowing. The light green lines show what would happen were the deficit to fall to 1.8% of national income this year and then remain at this level thereafter. The dark green lines show what

**Figure 3.8. Paths for debt under alternative assumptions for the deficit and economic growth**



Note: The solid lines take GDP projections from the OBR's July 2018 Fiscal Sustainability Report. The dashed lines assume instead that the real growth rate in 2022–23 in the Spring Statement forecast (1.45%) persists in the longer term, while the dotted lines assume a real growth rate of 2.7% per year (the long-run pre-crisis average) after 2022–23. '2018–19 deficit' assumes the deficit remains at 1.8% of national income from 2018–19 onwards. 'No deficit' assumes that from 2023–24 onwards the deficit is 0. The figure takes non-PSNB effects on debt from the January 2017 Fiscal Sustainability Report. Principally, this reflects the impact of student loans.

Source: Authors' calculations using Office for Budget Responsibility, *Fiscal Sustainability Report: January 2017* and *Fiscal Sustainability Report: July 2018*, <http://obr.uk/fsr/fiscal-sustainability-report-july-2018/>.

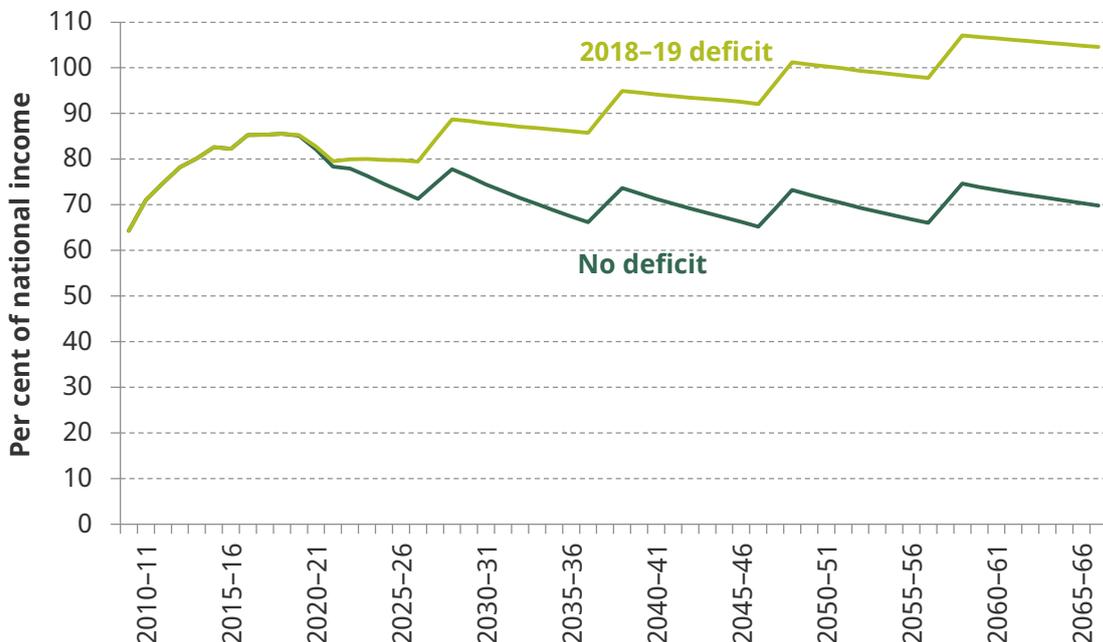
<sup>21</sup> We also take the OBR's long-run assumptions for interest rates and economy-wide inflation.

would happen were the deficit to be eliminated in 2022–23 and no deficit (or surplus) to be run thereafter.

Maintaining a deficit of 1.8% of national income would see public sector net debt fall slowly as a share of national income over time. However, even by 2040, it would still be above 70% of national income under the OBR’s central growth forecast, only just below 70% of national income under the high growth scenario, and would remain virtually flat under the more pessimistic growth forecast in Figure 3.8. Eliminating the deficit entirely would see public sector net debt fall faster, such that it would be just above 50% of national income under the OBR’s central growth forecast and just below 60% of national income under the more pessimistic growth forecast in 2040.

Of course, growth will not be smooth, as suggested in Figure 3.8. To illustrate the possible impact of recessions on the profile for public sector net debt, Figure 3.9 takes the two different profiles of the deficit from Figure 3.8 and assumes that in non-recession years the economy grows in line with the OBR’s central forecast for growth (as with the solid lines in Figure 3.8). But now we assume that a recession strikes in 10 years’ time (i.e. 20 years since the last recession), with another occurring every 10 years thereafter. Specifically, we assume that the debt-to-GDP ratio increases by 10 percentage points over two years when we experience a recession – this is somewhat lower than the impact of the 1990s recession on debt, much lower than the impact of the 2000s recession on debt, but more severe than the effects of the 1960s, 1970s and 1980s recessions.

**Figure 3.9. Paths for debt under alternative assumptions for the deficit, with recessions every decade**



Note: As for Figure 3.8. Every 10 years, we assume a recession event occurs and the debt-to-GDP ratio increases by 5% of national income per year for two years relative to the pre-recession path. This gap is then maintained thereafter.

Source: As for Figure 3.8.

Every recession will be different, and recessions will not arise at regular 10-year intervals. However, this provides an illustration of the sensitivity of the long-run public finances to future economic shocks. In some respects, it may be too pessimistic – for example, because it assumes growth in ‘normal times’ is no higher than the OBR central scenario, despite there being periods of lower growth (so this is ‘bust’ without the ‘boom’). However, as the OBR suggests in its Fiscal Risks Report, ‘unexpected downturns tend to surprise more on the downside than unexpectedly strong upswings surprise on the upside’,<sup>22</sup> which provides a rationale for why economic booms do not generate a symmetric reduction in net debt compared with recessions. The impact of the recessions assumed in Figure 3.9 may also be too conservative because, while the recessions of the 1960s and 1970s were associated with higher inflation (which put downwards pressure on the debt-to-GDP ratio), more recent recessions have tended to be in low-inflation environments, with more adverse public finance consequences.

Taking this scenario, Figure 3.9 shows that even under the scenario where the deficit is eliminated, debt would remain above 60% of national income throughout the next 50 years. Furthermore, maintaining the deficit at its 2018–19 level over the longer term (what might be deemed to be an immediate and permanent end to austerity) might not be sustainable: while debt would fall as a share of national income between recessions, it would ratchet up by more each time a recession hit. Indeed, for debt to be stable under this scenario, with a recession every decade, we would require growth (in the years outside of recessions) to be more than 1ppt per year higher than projected by the OBR: i.e. to average 3.1% a year, considerably greater than the 2.7% a year seen over the 50 years to 2008.

This analysis explains the Chancellor’s keenness to reduce the deficit further. Of course, even if one accepts it in full, it doesn’t mean that borrowing reductions necessarily need to be made immediately. In particular, if one believed that there was (or was about to be) a large amount of spare capacity in the economy, there would be a case for delaying this consolidation.

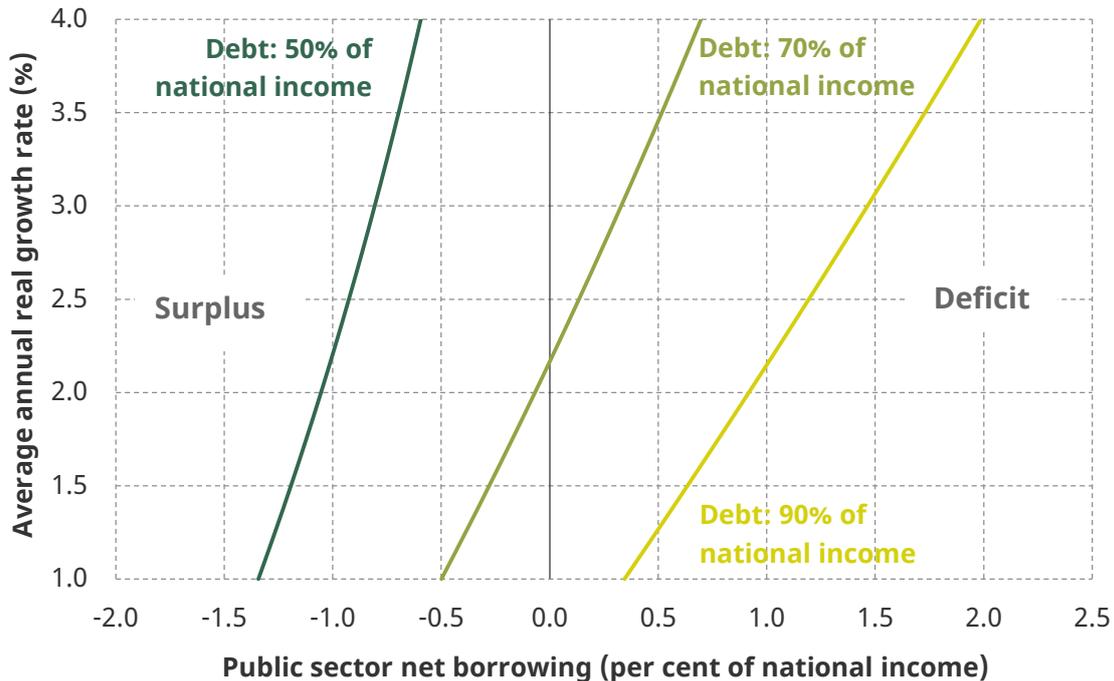
Indeed an important caveat is that, thus far, we have assumed that fiscal policy and the underlying rate of growth are unrelated. In practice, there are many ways in which fiscal policy will affect the supply side of the economy – which is what matters for long-term economic performance. For example, a fiscal tightening might lead to unemployment, which in turn eroded skills, making it harder for individuals to return to the labour market. A fiscal tightening achieved by increasing the corporation tax rate might translate into lower private sector investment, and thus lower growth. On the other hand, higher public sector investment would be expected to increase growth.

For a given level of public sector net borrowing, and for a given target for future public sector net debt, it is possible to calculate the level of growth required for the target to be met. Conversely, for a given level of growth, and for a given target for future public sector net debt, it is possible to calculate the level of public sector net borrowing that needs to be maintained. Figure 3.10 presents this trade-off, again assuming that recessions hit at regular 10-year intervals as in Figure 3.9. As before, we assume that borrowing outside that counted against public sector net borrowing remains unchanged.

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<sup>22</sup> Paragraph 3.42 of Office for Budget Responsibility *Fiscal Risks Report: July 2017*, [http://cdn.obr.uk/july\\_2017\\_fiscal\\_risks.pdf](http://cdn.obr.uk/july_2017_fiscal_risks.pdf).

**Figure 3.10. Combinations of long-run growth rates and deficit levels that achieve different debt-to-GDP ratios in 2066–67 (assuming recessions at 10-year intervals)**



Note: Assumes recessions have the same effects on debt as in Figure 3.9 and that they occur at 10-year intervals. Assumes that growth and deficit are held at stated level in all non-recession years. As in Figure 3.8, this takes the non-PSNB effects on debt from the January 2017 Fiscal Sustainability Report. Principally, this reflects the impact of student loans.

Source: As for Figure 3.8.

If (outside of recessions) growth were to average just 1.5% a year going forwards, then a budget surplus of 1.2% of national income would need to be maintained for the debt-to-GDP ratio in 2066–67 to be projected to be 50%. Were growth to instead average 3.0% a year, the required budget surplus would fall to 0.8% of national income. If the objective was only to stabilise the projected debt-to-GDP ratio at around its current 90% level, then growth of 3.0% a year would allow a deficit of 1.5% of national income to be maintained, while growth of 1.5% a year would instead be consistent with running a deficit of 0.6% of national income.

The Labour 2017 general election manifesto planned extra investment to the tune of £250 billion over 10 years<sup>23</sup> – roughly equal to an extra 1% of national income per year. It also announced sizeable tax rises that were intended to cover a proposed significant increase in day-to-day spending. The most expensive spending increase was the proposed abolition of tuition fees and, with them, the associated student loans. As well as being a substantial giveaway to students, this would also reduce – and eventually eliminate – the ‘fiscal illusion’ arising from the treatment in the public finances of student loans for tuition fees, and thus much of the non-borrowing additions to debt going forwards.<sup>24</sup> (In addition, Labour propose nationalisation of Royal Mail and publicly owned companies operating in rail, energy and water industries – which would also push up debt substantially. In what

<sup>23</sup> <https://labour.org.uk/manifesto/manifesto-resources/>.

<sup>24</sup> In effect, this would mean that a deficit of 1.9% of national income in this scenario is ‘tighter’ than a 1.9% of national income deficit when student loans are subject to their current treatment.

follows, we abstract from that effect. See Box 3.1 and, in particular, Chapter 6 for a discussion.)

If we assume that under Labour's plans the current budget surplus were maintained at its forecast 2022–23 level as a share of national income and capital spending were increased by 1% of national income, this would imply public sector net borrowing of 1.9% of national income (but with, in the long run, perhaps around 1% of national income less borrowing not scored in public sector net borrowing). On the OBR's current growth forecasts, and given the stylised impact of recessions assumed in Figure 3.9, this would imply that over the longer term debt would be projected to be around the same share of national income as it is today (roughly speaking it would be around halfway between the two lines presented in Figure 3.9).

Of course, the OBR's current growth forecasts might be affected by Labour's proposed policies. Labour's significant increase in infrastructure spending would, if spent well, increase the productive capacity of the UK economy. This would help push debt as a share of national income on a projected downwards path. However, Labour's other policies – such as increased rate of corporation tax, increased labour market regulations and four additional bank holidays – would have the opposite effect.

Taking the longer-term view does suggest that, given current debt levels, forecast growth and the current government's desire to borrow in ways that do not affect the headline deficit, a long-term fiscal objective that targeted a lower deficit than the current 1.8% of national income would be appropriate. Labour's policies would involve greater public sector net borrowing and, unless their overall package of policies led to the OBR revising up its forecast of long-run growth, could be expected to leave debt being projected to be around its current share of national income over the longer term. (The cost of financing any nationalisations – plus the substantial liabilities of the organisations brought under state control – would also push debt up further.)

### **3.4 Revisions to the March outlook**

The previous section considered the longer-run public finances, and how debt would evolve over the longer term under different realisations of growth or borrowing. However, a key part of the Chancellor's Budget announcement will be focused on how the economic and public finance outlook has changed since the March Spring Statement and how he has chosen to respond to this.

There are two broad sources of revisions to public finance forecasts. First, the public finance outlook will change – not least as the economic forecast changes. Second, changes to tax or spending policy will also affect the outlook for government borrowing.

In Section 3.2, we noted that the public finance data for 2018–19 point towards a downwards revision to 2018–19 borrowing of around £5 billion. Here we consider other ways in which the outlook may differ from March – both in terms of changes to the economy and in terms of likely policy changes – and we focus on the five-year period to 2022–23.

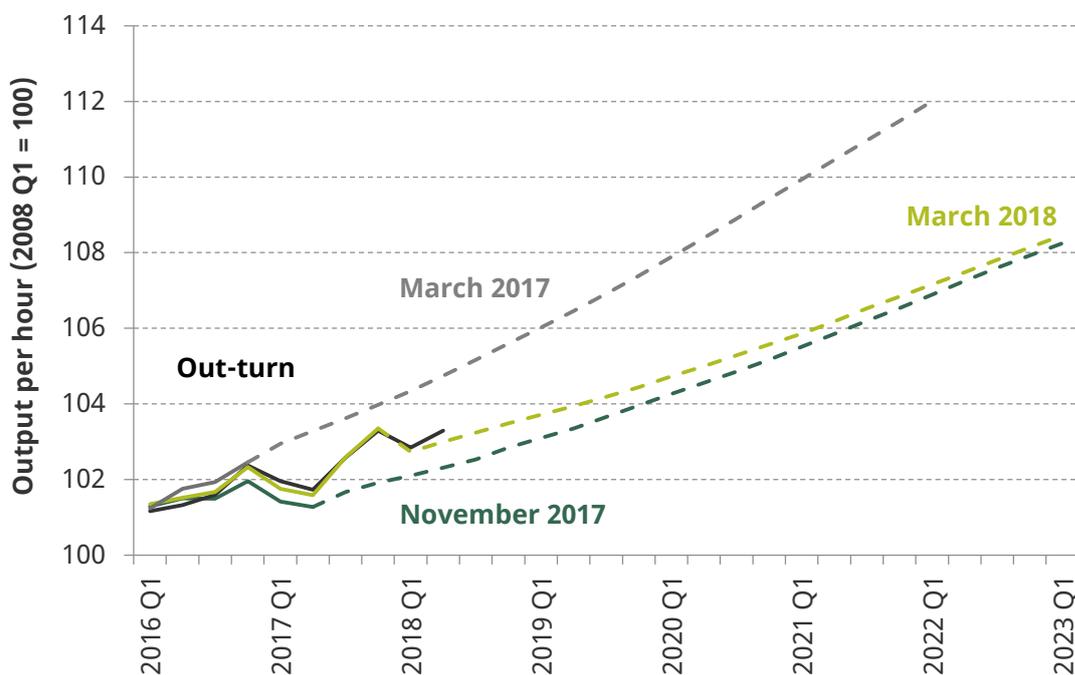
## The economy

Economic growth is the most important determinant of the public finances. The OBR forecasts sluggish growth over the next five years, driven by its view that productivity growth will be slow – a view it has held since November 2017, when it revised downwards significantly its outlook for productivity growth. Previously, it had persistently predicted a return to pre-recession trends, which had repeatedly failed to materialise.

Successive OBR forecasts for productivity growth are shown in Figure 3.11. Between March and November 2017, the OBR revised its assumed annual productivity growth rate down from 1.6% to 1.0%. While a substantial downgrade, this forecast still assumed that productivity growth would exceed recent performance, which has averaged just 0.5% per year since 2010. Between November 2017 and March 2018, the out-turn data were revised and provided a rosier view of the UK’s most recent productivity performance. However, this did not lead the OBR to revise its medium-term view of productivity, and data since then have been slightly above, but close to, the revised March 2018 forecast.

The OBR is more pessimistic than most other economic forecasters about future growth prospects. A natural comparator is the Bank of England – the other independent public sector forecaster. Figure 3.12 shows that the Bank downgraded its forecast for economic growth slightly between February and August 2018. However, it continues to anticipate higher growth than the OBR in the medium term – the Bank is forecasting growth of 1.7% in 2021 (the last year of its forecast), compared with the OBR’s 1.4% in that year. This puts

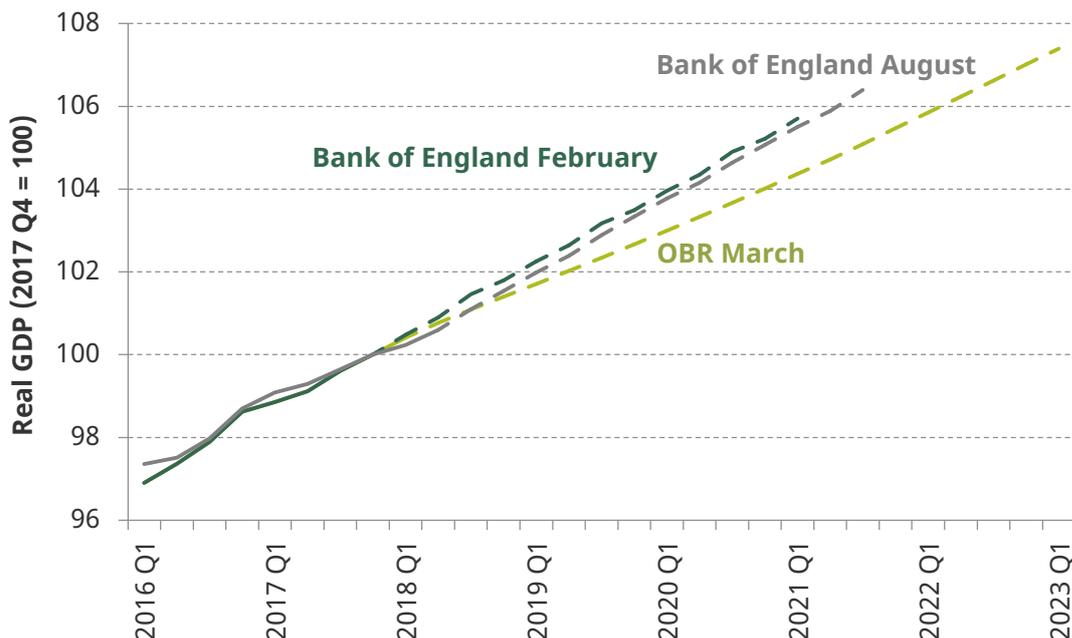
**Figure 3.11. Successive OBR forecasts for productivity**



Note: Output per hour calculated as non-oil gross value added at market prices (ONS series KLS2) divided by total number of hours worked (ONS series YBUS). All series indexed to 2008 Q1 as this was the last pre-recession quarter.

Source: Office for National Statistics; Office for Budget Responsibility, *Economic and Fiscal Outlook: November 2017*, <http://obr.uk/efo/economic-fiscal-outlook-november-2017/>; Office for Budget Responsibility, *Economic and Fiscal Outlook: March 2018*, <http://obr.uk/efo/economic-fiscal-outlook-march-2018/>.

**Figure 3.12. Real GDP forecasts: Office for Budget Responsibility and Bank of England, 2018**



Note: Bank of England forecasts are modal GDP growth forecasts based on market expectations for interest rates.

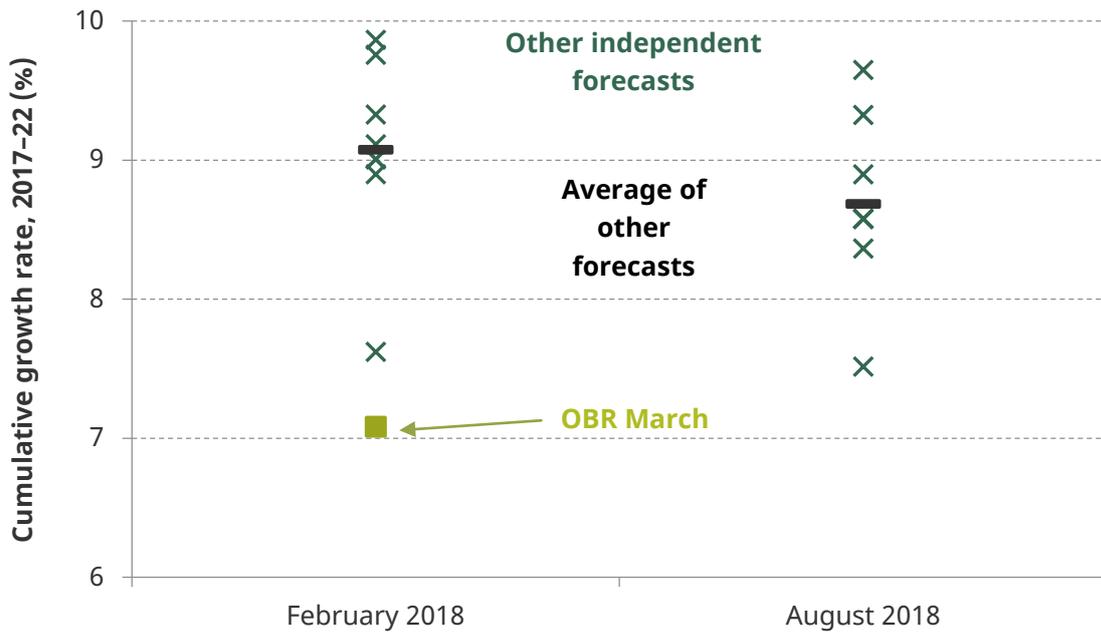
Source: Office for Budget Responsibility, *Economic and Fiscal Outlook: March 2018*, <http://obr.uk/efo/economic-fiscal-outlook-march-2018/>; Bank of England, *Inflation Report: February 2018*, <https://www.bankofengland.co.uk/inflation-report/2018/february-2018>; Bank of England, *Inflation Report: August 2018*, <https://www.bankofengland.co.uk/inflation-report/2018/august-2018>; and authors' calculations.

UK economic policy in a situation where the public finance forecasts are based on a more pessimistic outlook for the economy than the forecasts produced by those setting monetary policy.

A similar picture emerges when looking at forecasters surveyed by HM Treasury (Figure 3.13). Medium-term growth forecasts are, on average, lower in August than they were in February, but the OBR Spring Statement forecast remains more pessimistic about medium-term growth prospects than any of the other independent forecasters considered. The average of independent forecasters implies a growth rate in 2022 of 1.9% as opposed to an OBR forecast of 1.5%. The latest forecast from Citi – as set out in Chapter 2 – is one example of this, with growth in 2022 forecast to be 1.9%.

Despite being an outlier in terms of its forecasts, there seems little reason to think the OBR will significantly change its forecasts this Autumn, not least because productivity data since March are broadly in line with its latest forecast.

Nonetheless, it is informative to consider how different the public finance outlook might be if the OBR adopted a growth forecast in line with other independent forecasters. The Bank of England's economic forecast provides a natural alternative 'central outlook' for the public finances. Adopting the Bank's forecast through to 2020–21, and then assuming growth in line with the average of independent forecasters thereafter, would mean an economy in 2022–23 that is 1.9% larger than forecast by the OBR. As a result, we would

**Figure 3.13. Independent forecasts for cumulative real GDP growth, 2017–22**

Note: Includes all forecasters for whom a new five year growth forecast was provided in February and August: Beacon, Citigroup, Commerzbank, EY ITEM, Kern Consulting, Natwest, NIESR and Oxford Economics.

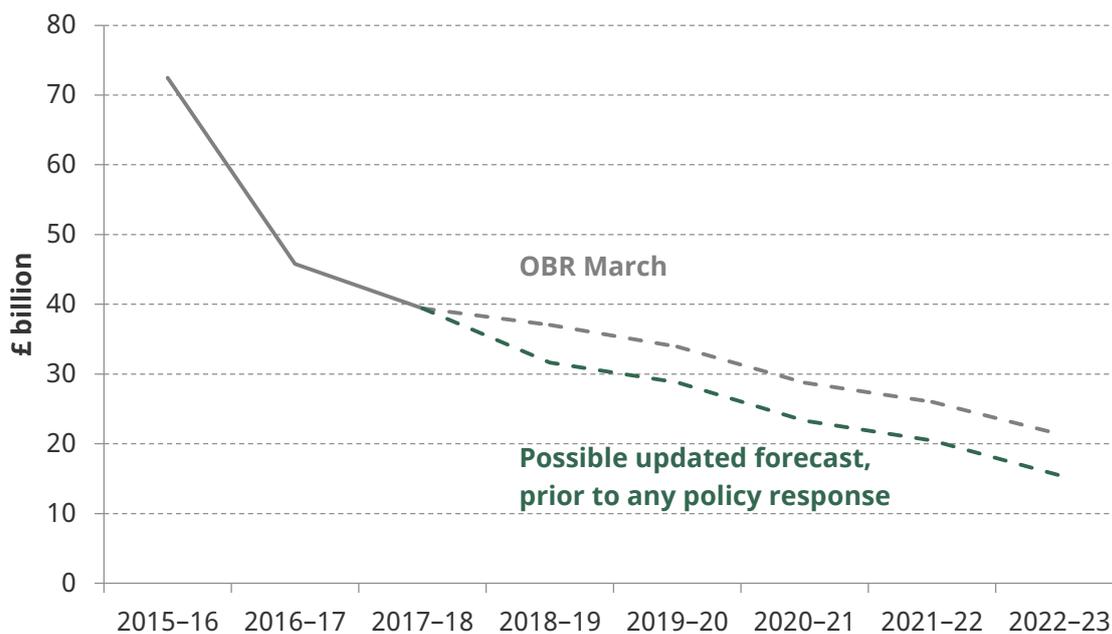
Source: Office for Budget Responsibility, *Economic and Fiscal Outlook: March 2018*, <http://obr.uk/efo/economic-fiscal-outlook-march-2018/>; HM Treasury, *Forecasts for the UK Economy: August 2018*, <https://www.gov.uk/government/statistics/forecasts-for-the-uk-economy-august-2018>.

expect borrowing to be around £23 billion (0.9% of national income) lower. A downwards revision to forecast borrowing of this magnitude would put the government on course to eliminate the deficit entirely in that year, allowing the Chancellor to meet his fiscal objective of eliminating the deficit by the middle of the next decade.

Other economic factors impact the public finances independently of any change to economic growth. Since March, there have been modest changes to the outlook for interest rates and the stock market, both of which slightly improve the outlook for the deficit and will automatically be reflected in the OBR's new forecast.

Changes to market expectations of the base rate, set by the Bank of England's Monetary Policy Committee, also affect the OBR's public finance forecasts. The headline deficit is currently flattered by the Bank of England's programme of quantitative easing. Under this programme, £435 billion of gilts have been purchased by the Bank of England through its Asset Purchase Facility (APF), which is almost a quarter of the £1.8 trillion of outstanding public sector net debt in March 2018. The interest rate scored against this borrowing is equal to the Bank of England's base rate – currently 0.75%. This is very low, depressing debt interest payments. If those gilts were instead held by the private sector, debt interest spending would be more than £13 billion higher in 2018–19 and more than £6 billion higher in 2022–23 (the forecast reduction in debt interest spending diminishes as the base rate is assumed to increase in line with market expectations, bringing it closer to the interest rate that would have been paid had those gilts been held in the private sector).

**Figure 3.14. A new central outlook for public sector net borrowing**



Note: Forecast prior to any policy response takes into account stronger-than-expected tax receipts so far this year and revised paths for the stock market and the base rate.

Source: Office for Budget Responsibility, *Economic and Fiscal Outlook: March 2018*, <http://obr.uk/efo/economic-fiscal-outlook-march-2018/>.

In the short term, this also means the public finance forecasts will vary with changes in the forecast for the base rate. Medium-term market expectations over the base rate have fallen slightly since March, which will lower recorded borrowing by reducing the debt interest scored against the gilts held by the APF.

Receipts of taxes such as capital gains tax and stamp duty on share transactions will rise and fall with equity prices. The stock market has performed more strongly than expected since March – this will be reflected in the OBR’s forecast and will lead to higher receipts from these taxes in the medium term. Combined, updated paths for the base rate and equity markets could reduce forecast borrowing by around £1½ billion in 2022-23.

Combining information on receipts so far this year and the evolution of the economy, we can arrive at a new ‘central outlook’ for the public finances absent any changes to policy relative to that assumed at the time of the Spring Statement. This is shown, alongside the OBR’s March forecast, in Figure 3.14.

This updated scenario assumes that stronger-than-expected tax receipts so far this year (which suggest receipts could be £4 billion higher than forecast) reflect a permanent improvement to the public finances and therefore persist throughout the forecast period, but that the £1 billion lower spending this year is a one-off 2018-19 effect. Combined with the lower borrowing implied by revised paths for equity markets and the base rate, these underlying factors combine to reduce forecast borrowing in 2022-23 by £6 billion.

## Policy changes

This revised outlook does not take into account ways in which policy might depart from the path assumed in the Spring Statement. But policy changes are likely. Under the OBR's remit, it cannot take these likely policy changes into account in its central forecast; however, they can have a substantial impact on the public finances.

For one thing, the Chancellor has said that he will announce the total spending envelope for the next Spending Review in the Budget. As Chapter 4 describes, it is likely that this will involve more spending than is currently pencilled in given that those plans would involve real cuts averaging more than 3% a year across the unprotected departmental budgets (i.e. outside the NHS, defence and aid).

There could also be tax cuts in some areas.

Rates of fuel duties have remained frozen in cash terms since April 2011, despite being due to rise by at least RPI inflation every year. In the Autumn 2017 Budget, the OBR described the announcement of another freeze as 'traditional' and 'inevitable'.<sup>25</sup> Despite this, the OBR has no choice but to produce a forecast that continues to assume that fuel duties will increase in line with RPI each April. In her speech to the Conservative party conference, the Prime Minister announced that rates of fuel duties would again be frozen in April 2019. This will reduce revenues by £0.8 billion in 2019–20. If fuel duties remain frozen in cash terms for the foreseeable future, revenues would be reduced by a further £2½ billion (i.e. on top of the £0.8 billion reduction in 2018–19) in 2022–23.

The Conservative party 2017 general election manifesto retained a long-standing commitment to increase the personal allowance to £12,500 and the higher-rate threshold to £50,000 by April 2020. Higher-than-anticipated inflation since the commitment was originally made in the 2015 general election manifesto means that meeting this policy is now only expected to cost £1.1 billion, but this is a £1.1 billion increase in borrowing not currently factored into the OBR forecasts.

If both of these tax cuts (freezing rates of fuel duties and raising income tax thresholds) happened, they would use up two-thirds of the possible £6 billion underlying improvement in 2022–23 suggested above and illustrated in Figure 3.14. But it is perhaps more likely that announcements of increases in income tax allowances and freezes to fuel duty rates beyond April 2019 will be left for subsequent Budgets. In any case, any significant loosening of the spending plans (for example, if austerity is to be ended for public services) would, unless accompanied by fresh tax rises, lead to the borrowing forecast for 2022–23 being higher on 29 October than it was back in the Spring.

## 3.5 Risks surrounding the central outlook

Strong public finance data so far this year mean that a downwards revision of £6 billion in forecast borrowing for 2022–23 (before taking into account any policy changes) seems plausible. This would constitute only a modest revision to the central outlook given the amount of uncertainty surrounding the public finances. Indeed, past forecasting

<sup>25</sup> Office for Budget Responsibility, *Economic and Fiscal Outlook: November 2017*, <http://obr.uk/efo/economic-fiscal-outlook-november-2017/>.

performance would suggest that there is around a one-in-three chance that the budget will be in surplus in 2022–23. But there is a similar chance that the UK would instead run a deficit of over 2% of national income (around £50 billion), higher than the current level.

In fact, the Budget forecast this year will be even more uncertain than would be suggested by previous forecast errors. We neither know what form Brexit will take nor can we say with any certainty how big the economic hit will be from leaving the EU. This is a set of risks that come on top of the ‘usual’ economic uncertainties.

Another source of risk surrounds how Chancellors use policy to respond to changes in the fiscal forecasts. For example, if they tend to respond to changes in the fiscal outlook with offsetting policy measures – by implementing giveaways such as spending rises or tax cuts in response to fiscal improvements and takeaways in response to fiscal deteriorations – then the outlook for the deficit would be more certain. But if Chancellors tend to respond differently to forecast improvements and forecast deteriorations, then this would have implications for the likely central path of the deficit over time.

This section first illustrates the sensitivity of the public finances to different types of economic shock – the main source of public finance uncertainty. It then looks at how policy has tended to respond to fiscal forecast revisions since 2010 and evaluates what this might mean for government borrowing and Chancellors’ fiscal targets.

### Economic shocks

There are upside and downside risks to growth. On the upside, productivity growth could return to pre-crisis trends. On the downside, growth may be hit by a disorderly Brexit. Rather than consider the public finance implications of precise alternative economic scenarios – of which there are many possible candidates – here we instead illustrate the sensitivity of the medium-term public finances to different types of unexpected negative economic events. In each case, the reverse would apply were a favourable economic shock to occur.

Broadly, adverse changes to the path of the economy can be of three types, each with different implications for the public finances. Table 3.2 provides illustrations of how each of these types of change might be expected to increase short-, medium- and longer-term borrowing (the primary deficit, which is public sector net borrowing excluding debt interest receipts and spending) and debt (assuming that the borrowing increases are not offset).<sup>26</sup>

- First, the impact may be purely temporary – the economy underperforms to a greater extent for a period of time, but its underlying potential is unaffected. Economic growth would be slower in the short term, but would then speed up at some later date such that the economy returned to its previous path. Borrowing would be higher in the short

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<sup>26</sup> It is important to note that these numbers are illustrative, and the public finance impact of a change to the path of the economy will depend on the composition of growth. In particular, if sectors of the economy, or activities within the economy, that are more heavily (lightly) taxed are more adversely affected by a given shock, the effect on borrowing may be larger (smaller). For the impact on borrowing, we present the effect on the primary deficit – this can be thought of as the amount of extra fiscal consolidation that would be necessary to return the deficit to its previous path should such a shock hit. The impact on debt, on the other hand, reflects the increase in the debt-to-GDP ratio if none of the borrowing increase were offset (and therefore allows for increased debt to push up debt interest spending).

term (2019–20), but no higher in the medium term, while debt would be slightly higher due to the earlier additional borrowing.

- Second, the adjustment may be one-off but permanent. As in the case of a temporary shock, growth would slow in the short term. However, rather than growth subsequently being greater, the growth rate would return to its pre-crisis level and the ‘lost output’ would never be regained. In this case, borrowing would be higher in the short and medium terms, and the impact on debt would grow over time.
- Finally, the adjustment may be to the rate of growth itself. The economy would evolve along a new, lower growth path. Unlike the other two types of adjustment above, the gap between the new growth path and the previous trend would continue to grow over time. This only leads to a modest increase in short-term borrowing, but a growing impact as national income diverges further from its previous path. While in 2022–23 the impacts of a permanent 1% hit to national income and a 0.25ppt fall in the growth rate on borrowing are the same, the impact of a lower growth rate on both borrowing and debt in 2034–35 is much larger.

In practice, these three types of changes are not mutually exclusive, and most adverse economic shocks combine these different features. For example, the OBR noted in its most recent Fiscal Risks Report that it is rare that cyclical slowdowns do not also have some permanent impact on borrowing – several years after recessions, potential output is normally lower than implied by the pre-recession trend.<sup>27</sup> Economic performance since the financial crisis and associated recession reflects both a large permanent reduction to GDP relative to trend and a reduction in the growth rate, such that the gap between actual GDP and the pre-crisis trend continues to grow.

**Table 3.2. Increase in borrowing and debt under different adverse economic shocks**

Change relative to forecast	Increase in 2019–20		Increase in 2022–23		Increase in 2034–35	
	Primary deficit	Debt (% GDP)	Primary deficit	Debt (%GDP)	Primary deficit	Debt (%GDP)
Temporary 1% fall in GDP in 2019–20 and 2020–21	£11bn	1.4%	£0	1.1%	£0	0.6%
Permanent 1% fall in GDP	£11bn	1.4%	£11bn	2.9%	£8bn	5.9%
Permanent 0.25ppt fall in annual GDP growth rate	£3bn	0.4%	£11bn	2.2%	£33bn	12.7%

Note: Assumes that a 1% smaller economy leads to a 0.5% of national income increase in borrowing (primary balance) during the forecast period, and 0.4% of national income thereafter. The precise impact of these changes is uncertain. The OBR assumes a 1% cyclical fall in national income leads to a 0.7% of national income increase in the deficit, but the reduction in the forecast path of the economy in November 2016, and resulting change in borrowing, implied a 1% fall in national income only led to a 0.35% of national income increase in the deficit. Primary balance changes all presented in 2018–19 terms.

<sup>27</sup> Page 54 of Office for Budget Responsibility, *Fiscal Risks Report: July 2017*, <http://obr.uk/frr/fiscal-risk-report-july-2017/>.

## The impact of Brexit on the public finances

In light of this discussion of economic shocks, how might we assess the possible impact of Brexit on the public finances? There are two main ways in which the public finances are affected by Brexit – the direct effect of a change to flows between the UK and the EU (set out in Box 3.2) and indirect effects through the impact on the economy.

### Box 3.2. Financial flows between the UK and the EU

#### The OBR forecasts

In its Spring Statement forecast, the OBR maintained its ‘fiscally neutral’ assumption that any money that the UK would have sent to Brussels over the forecast period would be recycled and spent elsewhere. The OBR has also forecast a path for likely ‘divorce payments’ in the medium term based on the agreement between the government and the EU in December 2017.

Chapter 4 sets out these flows for the final year of the forecast, 2022–23. These suggest that, after making payments to the EU and replacing spending that would otherwise have been done by the EU in the UK, there would be less than £1 billion remaining to reduce the deficit or to spend elsewhere.

In the longer term, the divorce payments are forecast to become smaller, which would allow the government to replace spending that would have occurred in the UK and have money left over (an amount equal to the UK’s net contribution of around £9 billion) to spend elsewhere or reduce the deficit, though of course this ignores any impact of Brexit on tax receipts or on public service pressures.

#### Flows under different Brexit deals

The government has indicated that, should it fail to reach a deal with the EU, it might not pay these ‘divorce payments’.<sup>a</sup> In that case, the direct fiscal benefits could be enjoyed more quickly. However, the detrimental consequences for the economy would almost certainly more than outweigh this public finance benefit.

Alternatively, the UK could choose to continue to make contributions to the EU budget. It may wish, for example, to participate in certain EU-wide schemes such as the EU’s spending on overseas aid (see Chapter 8 for a discussion). Additionally, part of the UK’s contribution pertains to tariff revenues that the UK collects on the EU’s behalf – depending on the customs arrangement that is reached, a transfer of tariff revenues from the UK to the EU may continue. This would mean a smaller direct benefit to the public finances from leaving the EU, but one that is likely to come alongside a smaller adverse hit to the UK economy and therefore stronger public finances overall.

<sup>a</sup> Source: ‘Dominic Raab: Britain will refuse to pay £39 billion divorce bill to Brussels if the EU fails to agree trade deal’, *The Telegraph*, 21 July 2018, <https://www.telegraph.co.uk/politics/2018/07/21/dominic-raab-britainwill-refuse-pay-39-billion-divorce-bill/>.

Source: Annex B and supplementary fiscal table 2.26 of Office for Budget Responsibility, *Economic and Fiscal Outlook: March 2018*, <http://obr.uk/efo/economic-fiscal-outlook-march-2018/>.

The UK's exit from the EU could conceivably lead to all three types of economic shock considered above. A sudden departure on 29 March 2019 (in the event of failing to reach a deal), with little time for firms and individuals to prepare, would cause a hit to the economy. A protracted period without an effective trade agreement and with associated uncertainty would almost certainly result in slower growth over time.

Estimates from the Centre for Economic Performance (CEP), NIESR and HM Treasury suggest the long-run effect could be to reduce the size of the economy by between 2.6% and 7.8% relative to what it would otherwise have been.<sup>28</sup> The current OBR forecasts implicitly assume that the UK's vote to leave the European Union will mean an economy that is 2% smaller than it would otherwise have been. This was the initial assessment in November 2016, the first post-referendum forecast – an assessment that has not been updated since.<sup>29</sup> Importantly, this assessment is predicated on a relatively smooth exit, and the OBR's long-term projections assume that the economy's long-term growth rate is unaffected. Other studies suggest that even such a smooth Brexit would mean that, overall, the UK is a less open economy and the result would likely be a permanently lower trend growth rate.<sup>30</sup> As illustrated in Table 3.2, small changes in the trend rate of growth have big effects on the public finances over time.

The OBR's assumed one-off hit to national income of 2% as a result of Brexit resulted in it attributing a £15 billion increase in borrowing in 2020–21 to Brexit. Even if it is right about the relatively modest effect on the economy that it assumes as a result of Brexit, this may understate the long-run public finance impact. A large predicted fall in investment actually increases tax receipts in the short term (as investment costs are deducted from corporate profits for corporation tax purposes), but would be expected to affect medium-term receipts as lower investment fed into lower profits and wages.

While there is considerable uncertainty over the precise impact of Brexit, economic analyses generally find that scenarios where the UK is in a closer relationship with the EU would be expected to have smaller negative impacts on the economy. For example, NIESR, CEP and HM Treasury have all predicted much larger negative effects under a scenario in which the UK trades on World Trade Organisation (WTO) terms with the EU than if the UK were to remain inside the European Economic Area (EEA).

Importantly, this means that a scenario that provides a greater direct benefit to the public finances (due to smaller net contributions to Brussels) would in all likelihood be worse for the public finances overall (due to more adverse economic effects). A no-deal Brexit in which the UK did not make planned 'divorce payments' would most likely lead to a worse long-term public finance outcome than a scenario in which the UK remained in the Single Market and continued to make some financial contributions to the EU budget, even if the latter scenario implied only slightly higher growth in the medium term.

<sup>28</sup> For a survey, see D. Mackie, 'Brexit: wealth effects much larger than income effects', JP Morgan Research Note, 28 April 2016.

<sup>29</sup> Source: Annex B of Office for Budget Responsibility, *Economic and Fiscal Outlook: November 2016*, <http://obr.uk/efo/economic-and-fiscal-outlook-november-2016/>.

<sup>30</sup> See S. Dhingra, G. Ottaviano, T. Sampson and J. van Reenen, 'The consequences of Brexit for UK trade and living standards', Centre for Economic Performance (CEP), *Brexit Analysis 2*, 2016, <http://cep.lse.ac.uk/pubs/download/brexit02.pdf>.

## Policy responses to changes in the underlying public finances

Public finance forecasts are revised. It matters how Chancellors respond to these revisions. If they respond symmetrically to improvements and deteriorations – for example, by always using policy to offset any underlying change in the deficit, or by always allowing the deficit to rise and fall as the economy improves and worsens – there would be no systematic effect on the path of the deficit. And where their response is to offset the underlying change, the amount of uncertainty over the actual path of the deficit would, in the medium term, be reduced.

However, if Chancellors tend to spend windfall gains, but allow the deficit to increase when the forecast deteriorates, this will lead to systematic increases in the deficit relative to forecast over time.

Indeed, Mr Hammond’s statements at fiscal events imply that he is likely to view improvements and deteriorations differently. In the Spring Statement, he said:

And if, in the Autumn, the public finances continue to reflect the improvements that today’s report hints at. Then, in accordance with our balanced approach, and using the flexibility provided by the fiscal rules. I would have capacity to enable further increases in public spending and investment in the years ahead.<sup>31</sup>

Yet in the Autumn Budget last November, citing the same ‘balanced approach’, the Chancellor responded to a deterioration in the forecast by saying:

I reaffirm our pledge of fiscal responsibility and our commitment to the fiscal rules I set out last Autumn. But now I choose to use some of the headroom I established then. So that as well as reducing debt, we can also invest in Britain’s future. Support our key public services. Keep taxes low. And provide a little help to families and businesses under pressure.<sup>32</sup>

In one instance, the Chancellor is promising to spend the windfall should the public finances improve, loosening policy in response to a better forecast. Yet in response to a worse forecast in the second instance, Mr Hammond advocates allowing the deficit to rise without offsetting it with policy measures. This is exactly the type of asymmetric behaviour that would lead to a ratchet effect, with the deficit rising over time: improvements in the forecast feed through into lower taxes and higher spending, but deteriorations in the forecast are not offset by equivalent tax increases or spending cuts.

In this section, we look for evidence of asymmetric behaviour by Chancellors since 2010 (Mr Hammond and his predecessor Mr Osborne) and evaluate the possible impact of such behaviour on the likely path of borrowing going forward.

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<sup>31</sup> Philip Hammond’s Spring Statement speech, March 2018, <https://www.gov.uk/government/speeches/spring-statement-2018-philip-hammonds-speech>.

<sup>32</sup> Philip Hammond’s Autumn Budget speech, November 2017, <https://www.gov.uk/government/speeches/autumn-budget-2017-philip-hammonds-speech>.

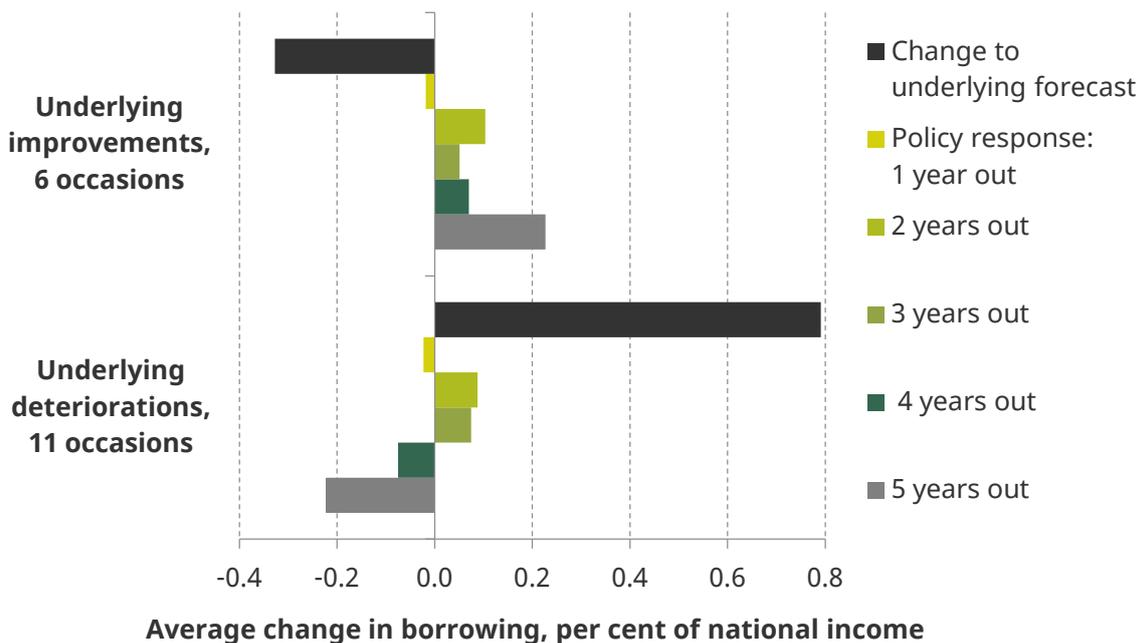
### Forecast changes since 2010

It is possible to divide changes in successive deficit forecasts between changes resulting from policy and other ‘underlying changes’ unrelated to policy decisions.<sup>33</sup> Underlying borrowing changes between successive forecasts are often large – the average absolute change in (underlying) forecast for the final year of the forecast (five years after the fiscal event) is 0.6% of national income, or £13 billion in today’s terms. Since 2010, public finance changes have been more likely to be deteriorations than improvements (focusing on the final year of the forecast horizon, there have been 11 forecast deteriorations and only six improvements). The average size of deteriorations has also been larger than the average size of improvements.

Figure 3.15 shows how policy has responded to these forecast changes, splitting the fiscal events into ‘improvements’ and ‘deteriorations’ based on the underlying change in the final-year borrowing forecast. The government may respond with measures that reduce the deficit or increase it. The figure shows the following:

- In the short term – two and three years out – on average the net effect of policy has been a small giveaway (i.e. increasing the deficit). This is true regardless of whether the forecast has improved or worsened, or whether the net effect of policy in the medium term is a giveaway or a takeaway.

**Figure 3.15. Average policy response to changes in the underlying forecast**



Note: Positive (negative) values represent a deterioration (improvement) in the forecast, i.e. an increase (decrease) in public sector net borrowing.

Source: Office for Budget Responsibility, ‘Forecast revisions database’, <http://obr.uk/data/>; authors’ calculations.

<sup>33</sup> We disregard classification changes in this analysis.

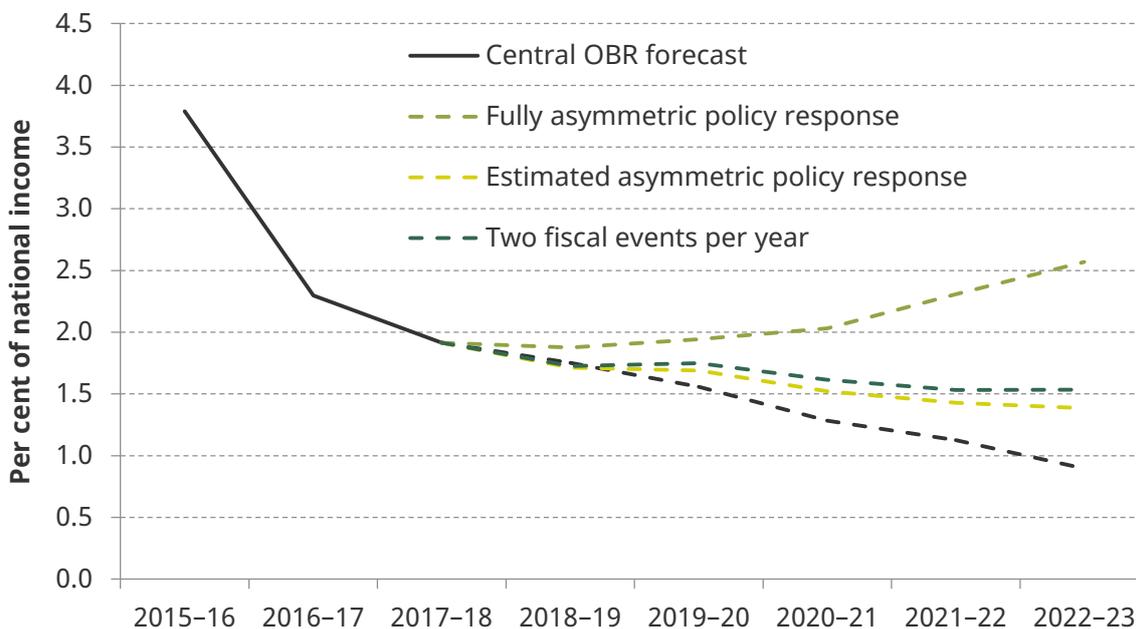
- In the medium term, on average policy has partially offset underlying changes to the forecast. In periods when the underlying forecast has improved, policy has on average been loosened in the medium term (i.e. acted to increase the deficit), while forecast deteriorations have been met with fiscal tightening (i.e. action to reduce the deficit).
- However, the response to forecast improvements and deteriorations is not symmetric. On average, two-thirds of the total value of windfall forecast improvements in the final year of the forecast has been offset with extra spending or tax cuts, while only around one-quarter of the total value of fiscal deteriorations is counteracted by fiscal tightening.

### Implications for borrowing

If a higher proportion of windfalls are spent than deteriorations are offset, on average we can expect borrowing forecasts to increase rather than fall over time.

Figure 3.16 shows the OBR central forecast from the March 2018 Spring Statement, and alternative central scenarios based on different policy responses. Forecast changes are assumed to be equally likely to improve and worsen the forecast, and so the OBR central forecast is also equivalent to a ‘no policy change’ central scenario and a ‘symmetric policy change’ central scenario, in which improvements and deteriorations are treated in the same way on average.

**Figure 3.16. Central borrowing forecast under different policy assumptions**



Note: Policy response series are based on 100,000 simulations of forecast errors and subsequent policy responses. ‘Full asymmetric policy response’ assumes that any underlying reduction in the deficit is reversed by spending increases or tax cuts, while there is no policy response to a deterioration in the forecast. ‘Estimated asymmetric response’ takes values of policy response based on Figure 3.15 for underlying improvements and deteriorations respectively.

Source: Authors’ calculations using Office for Budget Responsibility, ‘Forecast revisions database’, <http://obr.uk/data/>.

The extreme case would be that any windfall from a forecast improvement is fully spent while deteriorations are not offset at all. This is the ‘fully asymmetric policy response’ scenario in Figure 3.16, and such behaviour would put the public finances on an unsustainable course over the longer term. Effectively, this would mean that the deficit could never fall below the forecast level (as any improvement is spent), while any negative shock would feed through into higher borrowing. If that were to happen, the central expectation would be that borrowing would be over £50 billion (2.5% of national income) in today’s terms in 2022–23.

In practice, we do not find that Chancellors’ responses to improvements and deteriorations have been anywhere near so extreme. The ‘estimated asymmetric policy response’ scenario assumes that policy responds to upgrades and downgrades in the way it has on average since 2010 (shown in Figure 3.15).<sup>34</sup> Even this behaviour would lead to a substantial increase in the expected path of the deficit such that by 2022–23 it would be 0.5% of national income (£10 billion in today’s terms) higher than currently forecast. This suggests that treating public finance improvements and deteriorations differently can have a substantial impact on the path of the deficit, and is a genuine risk to the Chancellor’s plans, and his fiscal targets, going forward.

Since changes in fiscal forecasts result in asymmetric behaviour by Chancellors, the frequency of fiscal events matters for policy outcomes. Having more fiscal events would mean more revisions to forecasts that would then, in turn, induce a policy change. Alternatively, having fewer fiscal events would provide more opportunity for the impact of different developments in the public finances between successive forecasts to offset each other rather than induce a policy response. So one further implication of this analysis is that the Chancellor’s move from two fiscal events per year to one will have been (on average) a deficit-reducing measure. The ‘two fiscal events per year’ scenario in Figure 3.16 assumes the same policy responsiveness as the ‘estimated asymmetric policy response’ scenario, but instead allows the Chancellor to adjust policy twice a year rather than once.<sup>35</sup> Because policy responds differently to improvements and deteriorations, on average this reduces the deficit (albeit by a modest 0.15% of national income in 2022–23, or £3 billion in today’s terms). This is perhaps a further reason, on top of a number of others,<sup>36</sup> why the Chancellor should be encouraged to persist with one fiscal event per year, something that his predecessors have failed to do.

### 3.6 Conclusion

While borrowing has now returned to pre-crisis levels, the impact of the Great Recession is still evident in national debt, which as a share of national income is 50 percentage points higher than it was in 2007–08. Given the benefits of a lower debt-to-GDP ratio, sluggish

<sup>34</sup> Specifically, in order to quantify the possible impacts of this asymmetric treatment, we simulate series of forecast-to-forecast underlying revisions based on the distribution of such revisions since 2010. As we now have only one fiscal event per year where policy will be announced, we look at autumn-to-autumn changes in the underlying forecast since 2010. We model alternative policy responses to these shocks, allowing for improvements and deteriorations to be treated differently.

<sup>35</sup> In this scenario, shocks have a narrower distribution, reflecting the distribution of past forecast-to-forecast shocks rather than 12-month shocks.

<sup>36</sup> See recent joint work by researchers at the Chartered Institute of Taxation, Institute for Fiscal Studies and Institute for Government, *Better Budgets: Making Tax Policy Better*, <https://www.instituteforgovernment.org.uk/publications/better-budgets-making-tax-policy-better>.

growth prospects and the ‘fiscal illusion’ from the accounting treatment of student loans in public sector net borrowing, there are good reasons for the government to target a lower borrowing level than the current 1.8% of national income over the longer term (though not necessarily immediately). This is especially the case when considering potential future downturns and the fact that recessions tend to be associated with sharp increases in debt as a share of national income.

On the other hand, reducing the deficit back to normal levels from a peak of 10% of national income has required an eight-year period of substantial fiscal consolidation since 2010. An ageing society is set to place increasing upwards pressures on public spending for the foreseeable future (and in particular over the few years after October 2020). All of this makes delivering the fiscal plans set out in the Spring Statement – which include continued large implied real-terms cuts to the day-to-day spending for ‘unprotected’ areas – extremely difficult.

Meeting the overarching fiscal objective of eliminating the deficit entirely by the mid 2020s looks very challenging: it requires not just an extension of fiscal consolidation, over and above that already planned through to 2022–23, but an acceleration of the pace of fiscal consolidation.

The Chancellor has said that, at the Budget, he will set out the total spending envelope for a 2019 Spending Review. It would not be a surprise if this loosened policy relative to the path assumed for government spending in the Spring Statement, especially given commitments made by the Prime Minister on NHS funding in the summer, and her conference speech statement celebrating the apparent end of austerity. The Chancellor might find it difficult to fund any such increase entirely through tax rises given political constraints (and government revenues are already at their highest level relative to the size of the economy since the mid 1980s). This suggests that policy measures might be likely to represent a net giveaway in the Budget on 29 October.

One factor that may be in the Chancellor’s favour is that the public finance data so far this year point towards an improvement in the underlying (i.e. pre-policy-measures) forecast. Forecast borrowing in 2022–23 could be £6 billion lower than forecast in the Spring Statement, which might provide the Chancellor with welcome fiscal wiggle room. Such an improvement could allow him to loosen, at least partly, the spending squeeze without needing to deliver tax rises, while keeping the deficit on a path similar to the one set out in the Spring Statement.

However, an improvement of £6 billion is a modest revision relative to the amount of uncertainty surrounding public finance forecasts, and that is especially true of this forecast. Given uncertainties surrounding the nature of the post-Brexit deal, and the knock-on effect of that deal onto the economy and the public finances, it is reasonable to expect large revisions to the forecasts over the next few years. While it may seem innocuous for the Chancellor to increase spending if the underlying forecast improves, it is a threat to fiscal sustainability if Chancellors are systematically more willing to spend windfall gains than to tighten policy in response to deteriorations in the forecast.

This asymmetric treatment of forecast improvements and deteriorations is strongly suggested by the Chancellor’s statements to the House of Commons and we find evidence of this approach in his and his predecessor’s behaviour since 2010. It is true that

uncertainty can go both ways – forecasts could improve as well as worsen over the next five years. But the asymmetric response of policy means the risks are skewed – when things get better, this is only partly reflected in the deficit, while deteriorations pass through more fully into borrowing.

This may provide a further reason to be sceptical that the government's target of eliminating the deficit by the mid 2020s will be met, on top of the challenges of delivering further consolidation measures. Based on past forecast errors, there is an almost one-in-three chance that the deficit will be eliminated by 2022–23 without further policy action being required. But this fails to take into account the fact that much of any public finance windfall might be used to finance giveaways (either through spending increases or tax cuts). The history of fiscal rules and targets in the UK since 1997 is one of rules being broken and targets being missed. If the Chancellor and his successors continue to respond asymmetrically to good and bad public finance news, then it is more likely than not that the government's overarching fiscal objective will go the same way.

## 4. Trade-offs for the forthcoming Spending Review

Rowena Crawford and Ben Zaranko (IFS)

### Key findings

- **The Chancellor faces extremely tough choices over next year's Spending Review.** Keeping to the provisional spending totals used in the Spring Statement would mean continued cuts for many areas of public service spending. But increasing spending relative to these provisional plans would push him further away from his target of eliminating the deficit by the mid 2020s unless taxes are increased or spending cut elsewhere.
- **The government recently announced an increase in NHS spending of £20.5 billion over five years (£12.0 billion between 2019–20 and 2022–23).** Existing commitments on overseas aid and defence also mean that day-to-day spending on these areas is expected to increase by £0.6 billion between 2019–20 and 2022–23, and a continuation of the existing agreement with the Democratic Unionist Party (DUP) could entail an additional £0.3 billion a year of day-to-day funding for Northern Ireland.
- **These commitments would imply cuts to other areas of day-to-day spending amounting to £14.8 billion in 2022–23 if the provisional spending totals from the Spring Statement are kept to.**
- **After eight years of cuts to spending on public services, making more would be extremely difficult.** Increasing real earnings growth in the public sector also means future cuts to service spending would imply large reductions in government employment, after six years of relative stability.
- **The Chancellor may well therefore decide to increase overall spending on services relative to the provisional totals set out in March.** But doing so would require some combination of tax increases, higher borrowing and/or cuts to other spending, such as social security. None of these are easy options.
- **The additional uncertainty over the form and effects of Brexit make these decisions and trade-offs even harder.** Even ignoring the likely adverse effects of leaving the EU on economic growth and consequently tax revenues, there is likely to be virtually no 'Brexit dividend' over the next Spending Review period that could be diverted to fund public services. In 2022–23, net savings from contributions to the EU could be less than £1 billion a year, and higher UK administration costs – for customs, for example – could easily exceed this saving.

## 4.1 Introduction

According to his Spring Statement speech, at this year's forthcoming Budget the Chancellor will set a firm overall path for public spending for the years beyond 2019–20. At some point next year – perhaps in the Autumn 2019 Budget – this will be followed by a Spending Review to set detailed allocations for individual departments. The Chancellor described this two-stage approach as being 'how responsible people budget: first, they work out what they can afford; then they decide what their priorities are; and then they allocate between them'.<sup>1</sup>

Total public spending in 2017–18 amounted to £789.5 billion, or 38.4% of national income. Within that, government spending on social security (such as pensions and welfare) and on debt interest payments amounted to around 10.7% and 2.2% of national income, respectively. Public sector net investment (capital spending on things such as roads and buildings) amounted to a further 2.0% of national income. The remainder, around three-fifths of the total, can be broadly referred to as 'day-to-day public service spending' and will be the focus of this chapter.

Figures 4.1 and 4.2 illustrate how these components of overall public spending (also known as total managed expenditure, or TME) have changed over time and how they are forecast to change based on the government's provisional (Spring Statement 2018) plans through to 2022–23. Between 2009–10 and 2017–18, day-to-day public service spending fell by 0.2% in real terms (6.0% in real per-person terms), falling to 23.6% of national income, the lowest level since 2002–03. Under the provisional Spring Statement plans, spending on day-to-day public services is forecast to fall further to 22.9% of GDP by 2022–23. This would be a slightly higher share of national income spent on day-to-day public services than experienced for much of the late 1980s and 1990s, but is low by the standards of the 1970s and similar to those of the 1950s and 1960s.

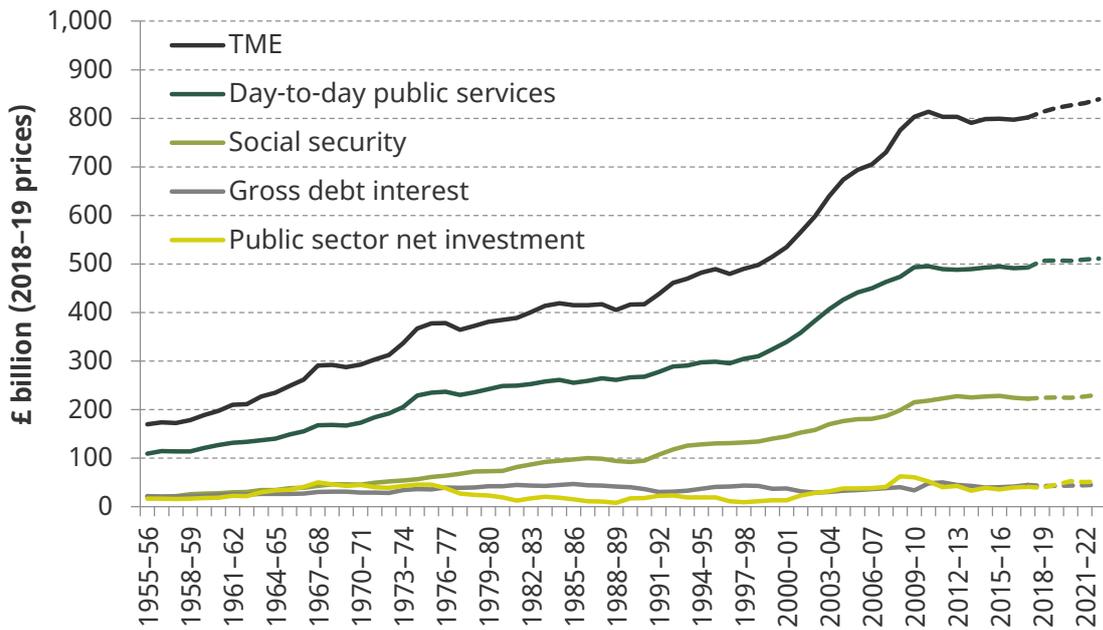
At the 2017 general election, the Labour party proposed substantial increases in public spending (and taxation). Their manifesto costed their public service policies as increasing day-to-day spending by £44 billion in 2021–22 (£41.9 billion in 2018–19 prices).<sup>2</sup> (This included a considerable increase in state funding for early years education and childcare support, real increases in per-pupil school funding, the scrapping of tuition fees and increased funding for social care.) A potential future Labour government would most likely update these plans in light of recent spending announcements and economic developments, but would almost certainly provide a very different offer on public services spending from the current government – one entailing a higher level of spending (funded through a combination of higher taxes and higher borrowing).

There is some evidence that there is an increased willingness from the public to pay more in tax to increase public spending. Figure 4.3 shows that support for increased tax and spending often exceeded 60% in the 1990s, before falling to a low of 32% in 2010. Since then, support for higher levels of tax and spending has grown, most sharply since 2014, and in 2017 reached 60% – the highest level in 15 years. Chapter 5 outlines possible

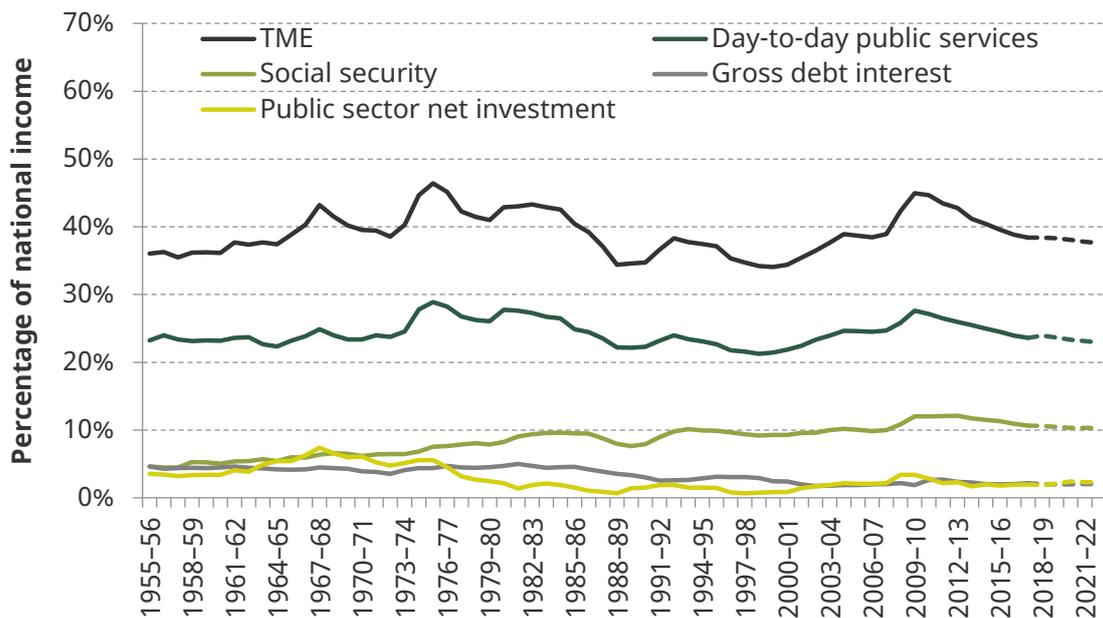
<sup>1</sup> *Hansard*, 13 March 2018, volume 637, <https://hansard.parliament.uk/Commons/2018-03-13/debates/CB15DC39-DCB5-4290-9045-73BFCEFDAC16/SpringStatement>.

<sup>2</sup> R. Crawford, 'General election 2017, manifesto analysis: spending on public services', IFS, 2017, <https://www.ifs.org.uk/publications/9258>.

**Figure 4.1. Total managed expenditure and its components over time in real terms**

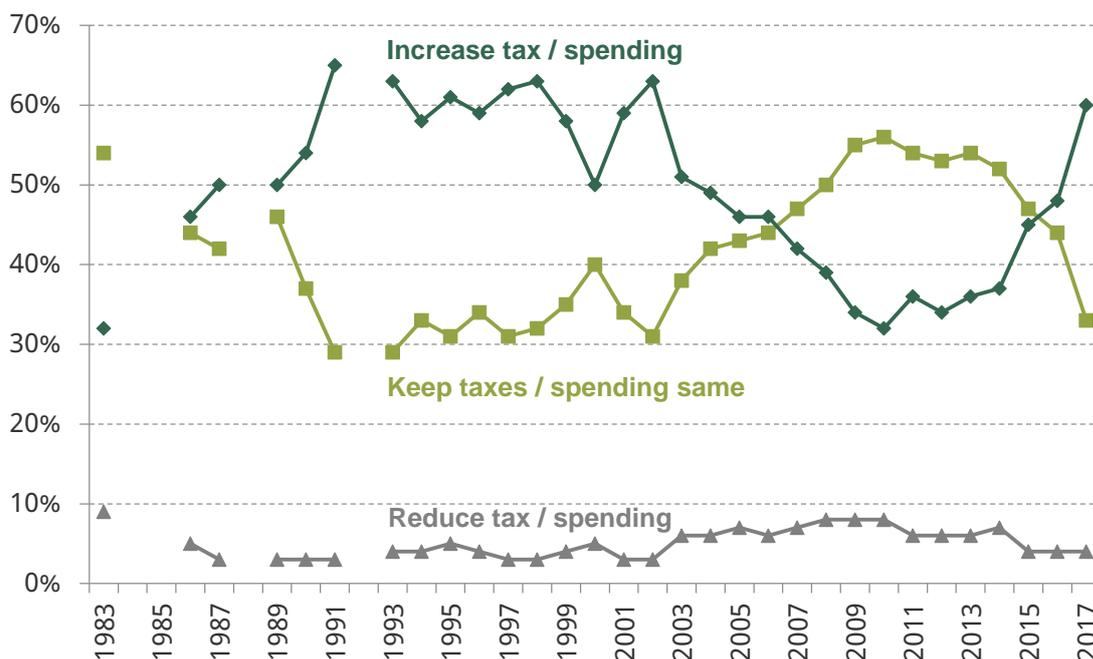


**Figure 4.2. Total managed expenditure and its components over time as a percentage of GDP**



Note for Figures 4.1 and 4.2: Day-to-day public service spending is defined here as total managed expenditure less spending on social security, gross debt interest and public sector net investment. Dotted lines show forecasts on the basis of March 2018 provisional spending plans.

Source for Figures 4.1 and 4.2: Total spending, net investment and nominal GDP are from the OBR's Public Finances Databank (accessed 20 July 2018). GDP deflators are from HM Treasury, June 2018 release, <https://www.gov.uk/government/statistics/gdp-deflators-at-market-prices-and-money-gdp-june-2018-quarterly-national-accounts>. Social security spending is from DWP benefit expenditure tables 2018, <https://www.gov.uk/government/publications/benefit-expenditure-and-caseload-tables-2018>. Gross debt interest is ONS series JW2P, with forecasts from supplementary fiscal table 2.38 of the OBR's March 2018 Economic and Fiscal Outlook.

**Figure 4.3. Percentage of people reporting different preferences for levels of tax and spending**

Source: British Social Attitudes Survey, <http://www.bsa.natcen.ac.uk/latest-report/british-social-attitudes-34/key-findings/context.aspx>; 2017 figures from <http://natcen.ac.uk/news-media/press-releases/2018/september/support-for-more-tax-spend-at-fifteen-year-high/>.

options for tax rises and the revenue they might raise. Nevertheless, the final decision on how to strike a balance between tax rises and spending cuts lies with the government.

In the coming months, the Chancellor will need to make a number of difficult choices. First, in setting the overall spending envelope (or, in his words, deciding what he can afford), Philip Hammond will have to balance carefully any extra spending against the additional tax or borrowing required to fund it. He will then need to trade off spending on public services against spending on social security, and balance the competing demands of ministers and departments, to determine his priorities and set detailed plans for the years ahead.

This chapter sets out the context for the spending choices facing the Chancellor, considers the necessary trade-offs and describes some of the possible implications for public service spending.

The last Spending Review, published alongside the Autumn Statement in November 2015, laid out plans for day-to-day departmental spending for the four years up to and including 2019–20.<sup>3</sup> At next year's Spending Review, the Chancellor has indicated that plans will be set for 2020–21 onwards, but he has not confirmed which years will be covered. A longer review period has the advantage of giving departments greater certainty over their likely

<sup>3</sup> With the exception of the NHS, the Ministry of Defence and the Security and Intelligence Agencies, for which resource budgets were also set for 2020–21. All departments' capital budgets were also set up to 2020–21 at the 2015 Spending Review.

<sup>4</sup> Of course, in practice, the government can – and does – alter departmental budgets relative to the 'firm and

future resources, which can aid long-term planning and lead to better policymaking. The downside, however, is that ‘locking in’ spending plans for a longer period can mean the government has less ability to respond to changes in economic, fiscal and/or societal circumstances.<sup>4</sup> This might be a particular concern at the moment given the uncertainty surrounding the UK’s forthcoming departure from the European Union. The government may also be reluctant to make spending commitments beyond the end of the parliament, with the next general election timetabled for May 2022, since such plans are typically seen as less credible (as there is nothing binding a future government to stick to them). Given that, we proceed under the assumption that a Spending Review in 2019 would primarily be focused on setting departmental allocations for 2020–21, 2021–22 and 2022–23. But it is quite possible the Chancellor will decide that the forthcoming Spending Review should cover a shorter period.

We start in the next section by discussing what the government’s latest fiscal plans, set out in the March 2018 Spring Statement, imply for public services. Section 4.3 looks at recently announced and existing spending commitments, and the implications those have for other areas of public service spending. Section 4.4 discusses how the government could choose to alter the overall level of spending on public services, while Section 4.5 examines the prioritisation of different spending areas in past Spending Reviews and the implications of the government’s plans for some public services. Section 4.6 concludes.

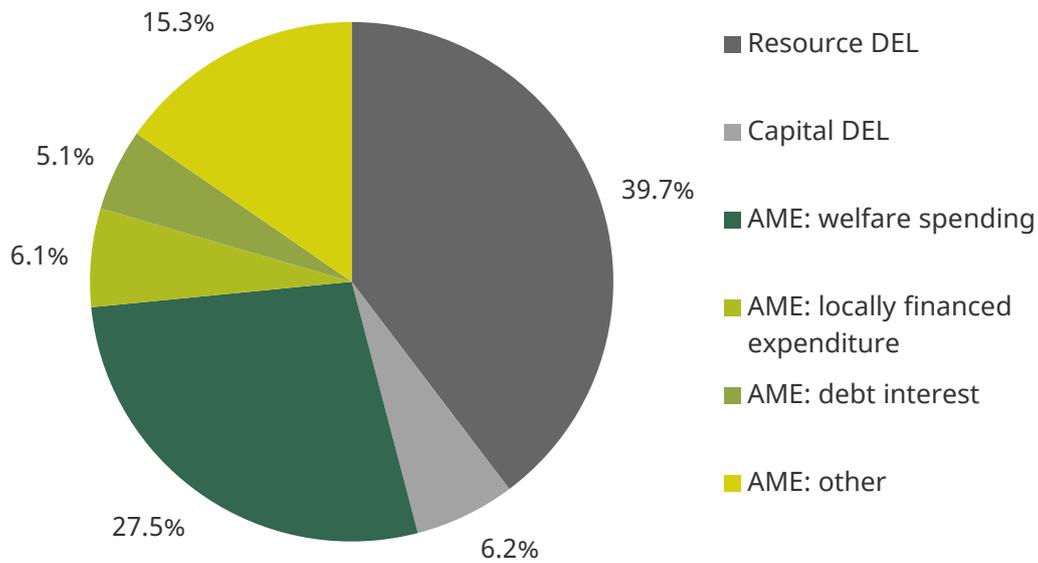
## 4.2 What do current fiscal plans imply for public service spending?

For planning spending on public services, the government uses a definition of public spending known as ‘departmental expenditure limits’, or DEL. This can broadly be thought of as central government spending by departments on the delivery and administration of public services. In 2017–18, it accounted for 45.9% of total government spending. Each department’s budget (or DEL) is split into a resource (day-to-day) and capital (investment) budget, which are referred to as RDEL and CDEL. Box 4.1 describes in more detail how DEL sits within total public spending.

### Box 4.1. Total public spending, DEL and the ‘Spending Review envelope’

**Departmental expenditure limits** (DEL) are intended to encompass spending that can be controlled (rather than being driven by, for example, the economic cycle) and are what is allocated between departments in multi-year settlements in Spending Reviews. The remainder of spending – that which the government argues cannot reasonably be subject to firm multi-year limits – is classified as **annually managed expenditure** (AME), and includes the components of spending that are more difficult to plan in advance, such as debt interest payments, social security and tax credits. The portion of local authority spending that is financed through local sources (such as business rates and council tax) is also included within AME as ‘locally financed expenditure’. DEL and AME sum to give **total managed expenditure** (TME), or overall public spending. Figure 4.4 shows the breakdown of TME into these components in 2017–18.

<sup>4</sup> Of course, in practice, the government can – and does – alter departmental budgets relative to the ‘firm and fixed’ plans set out in Spending Reviews when the need or desire arises. See R. Crawford, P. Johnson and B. Zaranko, *The Planning and Control of UK Public Expenditure, 1993–2015*, IFS Report R147, 2018, <https://www.ifs.org.uk/publications/13155>.

**Figure 4.4. Components of TME in 2017–18**

Source: Table 4.16 of the OBR's March 2018 Economic and Fiscal Outlook. Other components of AME include, for example, net public service pension payments, spending by the BBC and public corporations, current VAT refunds and expenditure transfers to EU institutions.

The autumn Budget is expected to announce a path for public spending for a number of years beyond 2019–20 (as discussed in Section 4.1, potentially the three years 2020–21 to 2022–23 inclusive). However, it is not clear which elements of public spending will fall within the scope of these plans. The Chancellor has not yet announced whether he is planning to set out a firm total DEL envelope for that period, or whether he will set out a firm envelope for DEL plus some items of AME such as social security, or even a firm envelope for TME.

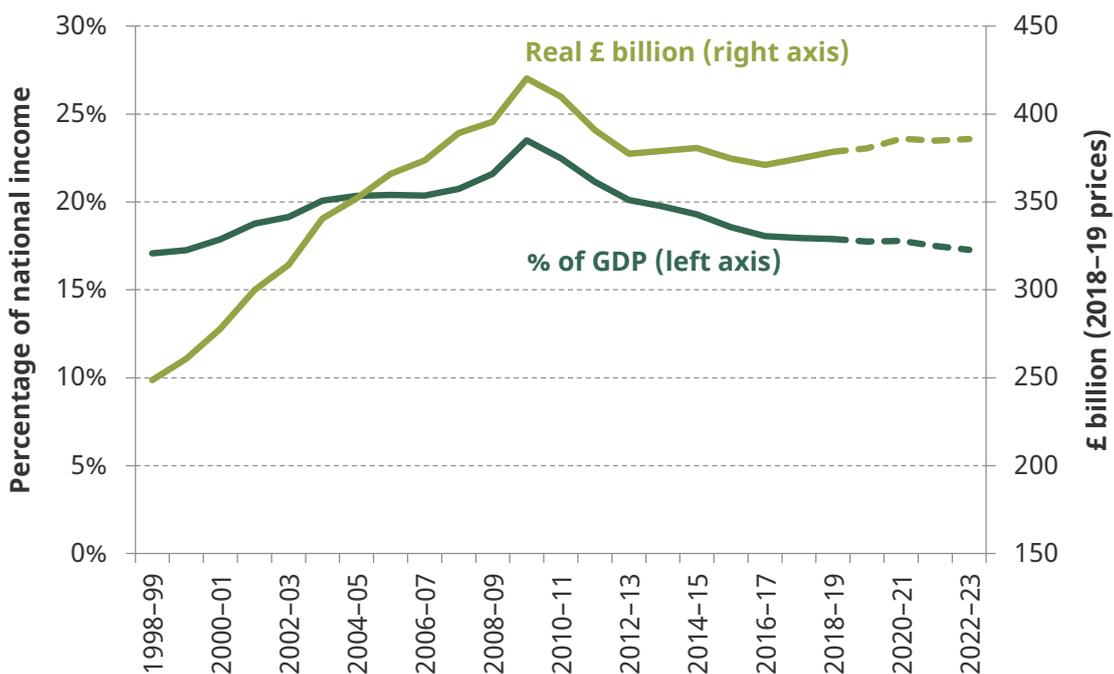
The last option is perhaps unlikely, as it would mean that future deviations in AME from what is forecast would automatically have to be offset by changes to other spending, rather than leaving open the option of responding to unforeseen future events by changing taxes or borrowing. However, including aspects of AME in the spending envelope set in the Budget leaves open the option of making changes to those areas at the time of the Spending Review next year – as happened in the 2010 and 2015 Spending Reviews.<sup>a</sup> On the one hand, it makes sense to consider all public spending together and trade off extra spending on benefits with extra spending on public services when decisions on priorities are being made. On the other hand, if the government is not considering further changes to benefit spending, it would be more transparent to set out the total DEL envelope in advance.

For the purposes of this chapter, we describe the process as the Chancellor setting the DEL envelope – by trading off additional DEL spending relative to provisional plans against the ‘cost’ in terms of lower spending elsewhere or higher taxes or borrowing – and then allocating the spending between departments within that DEL envelope. However, this is essentially just an expositional choice. The set of decisions that need to be made between now and the publication of the 2019 Spending Review, the trade-offs involved, and our quantitative analysis of the implications of those decisions are the same irrespective of precise timing of the decision over whether or not to change AME relative to current plans set out in the 2018 Spring Statement.

<sup>a</sup> The 2013 Spending Round covered one year of DEL budgets only (2015–16).

Figure 4.5 shows that departmental spending increased steadily over the course of the 2000s: between 1998–99 and 2009–10, total DEL (or TDEL, which is the sum of RDEL and CDEL) grew by an average rate of 4.9% per year in real terms, increasing from around £250 billion to more than £420 billion (in 2018–19 prices). This trend was then reversed: between 2009–10 and 2017–18, total DEL fell by more than £45 billion, equivalent to a cut of 10.9% in real terms, or an average cut of 1.4% per year.

**Figure 4.5. Total departmental expenditure**



Source: Authors’ calculations using the OBR’s March 2018 Economic and Fiscal Outlook, HM Treasury’s Public Expenditure Statistical Analyses (various) and June 2018 GDP deflators.

Going forwards, the government has firm plans for TDEL up to and including 2019–20 (and for CDEL up to and including 2020–21), with spending plans for individual departments having been set out in the 2015 Spending Review. However, the Spring Statement in March 2018 also included ‘provisional totals’ for DEL for the years up to and including 2022–23. While these are not firm plans for how much the government is going to spend in those years – the overall path for public spending is expected to be confirmed in the

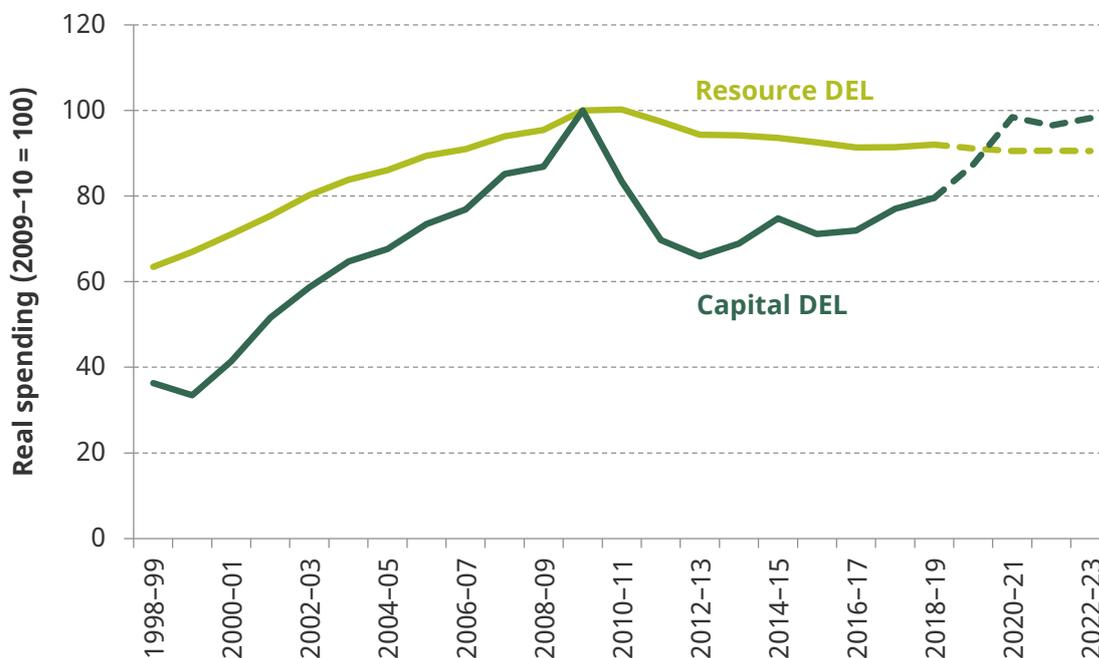
upcoming Budget and will influence departmental allocations – they are still a valuable benchmark. These provisional plans are what are assumed in the Office for Budget Responsibility (OBR)'s latest forecasts for government borrowing. Therefore, while the government is free to set a different path in the upcoming Budget, any change in DEL relative to these provisional totals would require a change in borrowing relative to what is currently forecast, new tax policies and/or other policies that alter non-DEL ('AME') spending.

On the basis of the provisional totals set out in the 2018 Spring Statement, total DEL is forecast to grow by 0.6% per year in real terms between 2017–18 and 2022–23 (0.5% per year between 2019–20 and 2022–23).

Departmental spending can also be measured against the size of the population to whom services are provided or the overall size of the economy. In per-person terms, TDEL is forecast to stay flat between 2017–18 and 2022–23 (and fall by 0.1% per year between 2019–20 and 2022–23). As a share of national income, departmental expenditure is forecast to fall back to around the level it was at the end of the 1990s.

Resource (day-to-day) spending accounts for the lion's share of departmental expenditure, with RDEL representing 86% of TDEL in 2017–18.<sup>5</sup> Figure 4.6 shows that in the run-up to 2009–10, capital spending increased at a more rapid rate than resource spending. In the years after 2010, while the majority of the cuts in cash terms came from the resource budget (owing to its greater size), the cuts made to capital spending were

**Figure 4.6. Resource and capital departmental expenditure limits**



Source: Authors' calculations using the OBR's March 2018 Economic and Fiscal Outlook, HM Treasury's Public Expenditure Statistical Analyses (various) and June 2018 GDP deflators.

<sup>5</sup> Note that here, and throughout, RDEL and CDEL stand for resource and capital departmental expenditure limits, respectively, and refer to OBR definitions (PSCE in RDEL and PSGI in CDEL) rather than Treasury definitions.

**Table 4.1. Spending changes implied by Spring Statement 2018 provisional totals**

	2019–20 to 2022–23		2010–11 to 2022–23	
	Average annual real growth	Change (£ billion, 2018–19 prices)	Average annual real growth	Change (£ billion, 2018–19 prices)
TME	+0.7%	+18.3	+0.3%	+25.7
<i>of which:</i>				
AME	+1.0%	+13.0	+1.0%	+49.8
DEL	+0.5%	+5.3	-0.5%	-24.1
<i>of which:</i>				
RDEL <sup>a</sup>	-0.2%	-2.0	-0.8%	-34.0
CDEL <sup>a</sup>	+4.0%	+7.2	+1.4%	+10.0

<sup>a</sup> RDEL and CDEL stand for resource and capital departmental expenditure limits, respectively, and refer to OBR definitions (PSCE in RDEL and PSGI in CDEL) rather than Treasury definitions. A reconciliation is published by the OBR: see supplementary fiscal table 2.18 at the March 2018 Economic and Fiscal Outlook.

Note: Figures may not sum due to rounding.

Source: Authors' calculations using table 4.16 in the OBR's March 2018 Economic and Fiscal Outlook, June 2018 GDP deflators and the OBR's Public Finances Databank (accessed 20 July 2018).

deeper in percentage terms. However, since 2012–13, CDEL has been gradually increased in real terms, while RDEL has continued to be cut.

On the basis of the provisional plans in the 2018 Spring Statement, resource and capital DEL are set to follow very different paths between 2019–20 and 2022–23. Capital spending is forecast to grow at an average real rate of 4.0% per year, while resource DEL is facing cuts of an average 0.2% per year. This is summarised in Table 4.1. Given expected population growth, these would equate to cuts in per-person spending of an average 0.7% per year for RDEL and increases of 3.4% per year for CDEL. To hold RDEL constant in per-person terms would require a £5.1 billion real-terms increase in spending (0.5% per year).

This divergence reflects the fact that, amidst wider spending constraint and cuts to departments' day-to-day spending, the Chancellor has consistently prioritised investment spending. The 2016 Autumn Statement announced a new National Productivity Investment Fund (NPIF) to target spending at areas the government judges to be critical for productivity: housing, research and development (R&D), and economic infrastructure, including transport and digital communications.<sup>6</sup> The NPIF was then expanded at the 2017 Autumn Budget. A detailed breakdown is not available, but of the £31.2 billion announced by November 2017, the Treasury had allocated £7.1 billion for R&D, £4.9 billion for transport, £11.6 billion for housing and £740 million for digital infrastructure.<sup>7</sup> Accordingly, the departments set to see substantial increases in their capital budgets include the

<sup>6</sup> HM Treasury, *Autumn Statement 2016*, <https://www.gov.uk/government/publications/autumn-statement-2016-documents>.

<sup>7</sup> Table 4.1 of HM Treasury, *Autumn Budget 2017*, <https://www.gov.uk/government/publications/autumn-budget-2017-documents>.

Department for Transport and the Ministry for Housing, Communities and Local Government.

On the face of it, the planned cuts to resource budgets of 0.2% per year, or £2.0 billion between 2019–20 and 2022–23, might appear relatively modest. However, it is important to bear in mind two things. First, cuts to departments' day-to-day budgets between 2019–20 and 2022–23 would come on the back of the considerable cuts already made since 2010, which amount to £32.0 billion. While the scale of the planned further cuts is much smaller, additional cuts to departmental budgets could have important consequences for the quality and delivery of public services – and therefore for whether those cuts could be sustained politically; this is discussed in more detail in Section 4.5.

Second, the government recently announced a significant increase in spending on the NHS beyond 2019–20, and already has a number of other spending commitments which, if kept, would together tie up a significant chunk of public service spending. This means that, for overall resource spending to fall in line with the figures set out in Table 4.1, the cuts to unprotected public service spending need to be substantially greater than 0.2% per year. This is discussed in more detail in the next section.

### 4.3 A responsible way to budget?

In March, Mr Hammond indicated that he intended to set a firm overall spending limit before making individual departmental allocations, suggesting that this is 'how responsible people budget'.<sup>8</sup>

Despite this assertion, the government has subsequently announced a generous funding settlement for the NHS between 2018–19 and 2023–24 (in advance of setting any overall spending envelope). This is not the first time the NHS has received special treatment in the context of public spending decisions. But the scale of the planned increase in NHS spending is so large that the path for overall spending may need to be revised to accommodate it. That would rather be a case of the NHS tail wagging the fiscal dog.

It is not immediately obvious that the Chancellor's originally proposed two-stage approach is in fact the optimal way to budget. Of course, affordability is a key consideration; spending decisions should not be made without thought for the consequences, in terms of the taxes or borrowing required to pay for them. However, it also seems odd to decide what is 'affordable', and to fix total spending at that level, without considering what the consequences would be for individual services. The additional taxes that the public would be prepared to pay may well depend on the quantity and quality of public services that they would receive in return. In any case, the way the government has deviated from the approach outlined in March – announcing a substantial NHS settlement without seeming to factor in how it will be funded, or the implicit consequences for other public services if no additional funding is found – certainly leaves a lot to be desired. If the government is to have a Spending Review, all public spending should be considered at the same time – ideally alongside the related issue of how much to raise in taxes and how much it is sensible to plan on financing through borrowing.

<sup>8</sup> *Hansard*, 13 March 2018, volume 637, <https://hansard.parliament.uk/Commons/2018-03-13/debates/CB15DC39-DCB5-4290-9045-73BFCFEDAC16/SpringStatement>.

The government also has pre-existing commitments over the level of some other areas of spending, including defence and overseas aid. The detail of these commitments is described below (and discussed further in Chapters 7 and 8 respectively) but, all in all, these ‘protected’ areas amount to almost half of the total resource budget. Spending on these areas will need to increase in real terms if the government is to honour its commitments. The implied cut to unprotected departments is therefore far greater than that to overall DEL, as set out in the following subsection.

## Recent announcements and other spending commitments

### NHS

The 2015 Spending Review provided a five-year settlement for the Department of Health, setting budgets up to 2020–21. The 2017 Autumn Budget announced additional funding for the NHS up to 2022–23, and in June 2018 the government set out a new five-year funding plan for the NHS in England.<sup>9</sup> It was announced that funding for front-line services in England would increase by an average real rate of 3.4% over the five years, meaning an extra £20.5 billion of spending in real terms in 2023–24 relative to 2018–19. Over the period we assume is covered by the next Spending Review (2019–20 to 2022–23), the plans imply a £12.0 billion increase in spending (3.3% per year), with an estimated additional £2.1 billion (in 2018–19 prices) of implied funding for Scotland, Wales and Northern Ireland as a result of Barnett consequentials.<sup>10</sup>

The 3.4% increases apply only to the NHS England resource budget; capital budgets are not covered, and nor are the non-NHS elements of the Department of Health and Social Care, such as public health initiatives and medical research. The government has not yet indicated whether spending outside of the NHS England resource budget will be protected; however, history suggests this is unlikely. NHS capital budgets have repeatedly been raided in recent years to fund additional day-to-day spending,<sup>11</sup> and non-NHS health spending has been cut while NHS spending has increased.<sup>12</sup>

### Overseas aid

The government has a longstanding commitment to meet the United Nations target of spending 0.7% of gross national income on official development assistance (ODA) each year. This target, and the changes in the UK’s ODA spending over time, are discussed in further detail in Chapter 8. In line with the government’s legislative commitments and a cross-party consensus, we assume that ODA remains at 0.7% of national income over the Spending Review period and that, within the total, capital spending on ODA increases in

<sup>9</sup> ‘Prime Minister sets out 5-year NHS funding plan’, HM Treasury and DHSC press release, 18 June 2018, <https://www.gov.uk/government/news/prime-minister-sets-out-5-year-nhs-funding-plan>. Further details of the financial settlement were published alongside the press release ([https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/717765/nhs-settlement-numbers.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/717765/nhs-settlement-numbers.pdf)).

<sup>10</sup> Barnett consequentials refer to the additional funding that would be allocated to Scotland, Wales and Northern Ireland as a result of increased public service spending in England (which the devolved governments would not necessarily have to spend on health).

<sup>11</sup> At least £1 billion was switched from Department of Health CDEL to RDEL in 2015–16, 2016–17 and 2017–18. Source: Chapter 3 of Public Expenditure Statistical Analyses 2016, 2017 and 2018, <https://www.gov.uk/government/collections/public-expenditure-statistical-analyses-pesa>.

<sup>12</sup> D. Luchinskaya, P. Simpson and G. Stoye, ‘UK health and social care spending’, in C. Emmerson, P. Johnson and R. Joyce (eds), *The IFS Green Budget: February 2017*, <https://www.ifs.org.uk/uploads/publications/budgets/gb2017/gb2017ch5.pdf>.

line with overall CDEL at 4.0% a year.<sup>13</sup> This implies that resource spending on ODA within DEL would grow by 0.2% per year in real terms. While most UK ODA spending is within DEL, some ODA done by the EU (broadly the proportion funded by UK contributions) also (sensibly) counts towards meeting the UK's 0.7% commitment. In 2017, this amounted to around £0.9 billion. Future UK–EU arrangements over aid spending are uncertain, but should a proportion of EU ODA spending no longer count towards the UK target, it would need to be replaced by additional UK ODA spending if the government is to continue to meet its 0.7% of national income commitment.

## Defence

Members of NATO commit to a target of spending 2% of GDP on defence. The UK government has met this target in each of the last eight years.<sup>14</sup> The NATO definition of spending is broader than the core Ministry of Defence (MoD) budget and includes, for example, the cost of current military operations (which have in recent years been met from the Treasury Special Reserve), pensions for military personnel, and spending by intelligence services in support of military activities. (This is discussed in more detail in Chapter 7.) In our analysis, we assume that the MoD budget and the Single Intelligence Account (SIA), which funds the UK's intelligence agencies, increase in line with GDP. Assuming that MoD and SIA capital budgets grow by 4.0% per year (in line with overall CDEL), this implies real growth of 0.5% per year in RDEL for those departments.

## Northern Ireland

The 2017 Confidence and Supply Agreement between the Conservatives and the Democratic Unionist Party (DUP) included additional financial support for Northern Ireland. The agreement promised approximately £910 million in extra funding over two years, with almost half of this going towards infrastructure projects.<sup>15</sup> The 2018–19 budget settlement, published in the absence of an Executive and Assembly in Northern Ireland, includes £410 million from the Confidence and Supply Agreement.<sup>16</sup> Looking forward, a continuation of such an agreement could entail additional funding for Northern Ireland. We make the illustrative assumption that the government would provide an additional £500 million in each of the years of the Spending Review period, but that this would be time-limited and not cumulative. Of that extra funding, we assume that roughly half is for capital projects (in line with the 2017 Confidence and Supply Agreement) and found from within the existing CDEL budget, leaving around £250 million of additional day-to-day spending allocated to Northern Ireland.

## Implications for unprotected areas

In total, spending on NHS England, official development assistance, defence and intelligence is estimated to account for almost half of total budgeted resource spending in 2019–20, and the government's existing commitments imply an increase of 2.6% per year across these protected areas. Table 4.1 showed that under current plans, total RDEL will

<sup>13</sup> We have made the additional assumption that the capital intensity of the ODA budget is the same as that for the Department for International Development.

<sup>14</sup> N. Dempsey, 'UK defence expenditure', House of Commons Library Briefing Paper CBP 8175, 2018, <https://researchbriefings.parliament.uk/ResearchBriefing/Summary/CBP-8175>.

<sup>15</sup> Cabinet Office, 'UK government financial support for Northern Ireland', June 2017 [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/621797/UK\\_Govt\\_financial\\_support\\_for\\_Northern\\_Ireland.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/621797/UK_Govt_financial_support_for_Northern_Ireland.pdf).

<sup>16</sup> 'Written Ministerial Statement: Northern Ireland finances', 8 March 2018, <https://www.gov.uk/government/news/written-ministerial-statement-northern-ireland-finances>.

fall by 0.2% per year in real terms over the next Spending Review period. However, given the government's pre-existing commitments outlined above, the implied cuts to 'unprotected' departments are far greater: to maintain existing plans for RDEL, while meeting the commitments to the NHS, defence, intelligence and overseas aid, day-to-day spending on everything else would need to fall by 3.1% per year on average. That is equivalent to a cut of £14.6 billion between 2019–20 and 2022–23, rising to £14.8 billion if the government provides an additional £250 million of resource funding to Northern Ireland each year as part of a new confidence and supply agreement. This is summarised in Table 4.2.

Between 2010–11 and 2018–19, day-to-day spending on roughly these 'unprotected' areas was reduced by around 3% per year.<sup>17</sup> The government's Spring Statement provisional

**Table 4.2. Real-terms changes to departments' DEL, 2019–20 to 2022–23, implied by Spring Statement 2018 provisional totals**

	2019–20 to 2022–23		
	Average annual real growth	Cumulative real growth	Change (£ billion, 2018–19 prices)
Total DEL	+0.5%	+1.4%	+5.3
<i>of which:</i>			
CDEL	+4.0%	+12.3%	+7.2
RDEL	–0.2%	–0.6%	–2.0
<i>of which:</i>			
NHS England RDEL	+3.3%	+10.1%	+12.0
Defence and intelligence RDEL	+0.5%	+1.7%	+0.5
ODA RDEL	+0.2%	+0.7%	+0.1
RDEL less NHS-E, defence and ODA	–3.1%	–9.0%	–14.6
Additional Northern Ireland funding			+0.3
Unprotected RDEL	–3.1%	–9.3%	–14.8

Note: Calculated on the basis of assumptions outlined in the text. Growth rates are calculated using departmental resource budgets excluding depreciation. Figures may not sum due to rounding.

Source: Authors' calculations using the OBR's March 2018 Economic and Fiscal Outlook, HM Treasury's Public Expenditure Statistical Analyses 2018 and June 2018 GDP deflators. Details on the NHS England funding settlement are taken from HM Treasury note published alongside the announcement ([https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/717765/nhs-settlement-numbers.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/717765/nhs-settlement-numbers.pdf)).

<sup>17</sup> This past growth rate is calculated for 'unprotected' RDEL defined as PSCE in RDEL less resource spending on ODA, defence, the Department of Health (since figures on spending by 'NHS England' are not available back to 2010–11) and intelligence (where intelligence spending is assumed to have grown at the same rate as defence spending between 2010–11 and 2011–12).

plans therefore imply three further years of cuts to ‘unprotected’ spending at around the same pace as experienced since 2010.

#### 4.4 Options for cutting by less

The scale of cuts required to unprotected departments, on top of the squeeze they have experienced since 2010–11, means that cutting spending to meet the 2018 Spring Statement provisional totals would be extremely challenging. The Chancellor might instead wish to reduce the scale of cuts planned. This would require additional spending relative to his March 2018 provisional plans, however, and that spending would need to be funded from somewhere – either through higher borrowing, tax rises, or cuts to spending elsewhere (such as social security, investment or contributions to the European Union).

Of course, this assumes that forecasts for economic growth turn out as forecast in the March 2018 Spring Statement. We maintain that assumption throughout this chapter, but it is important to note that the most important factor determining the health of the public finances is the performance of the economy. Should economic growth turn out better than forecast, tax revenues are likely to be higher, AME spending potentially lower, and any given cash amount of expected borrowing would represent a smaller proportion of national income. If this improvement is thought to be permanent, the Chancellor could decide to use some of the windfall to boost spending on public services. In March, Mr Hammond indicated his willingness to do just that,<sup>18</sup> and Chapter 3 shows that this is how chancellors have tended to respond to underlying improvements in the borrowing forecast since 2010.

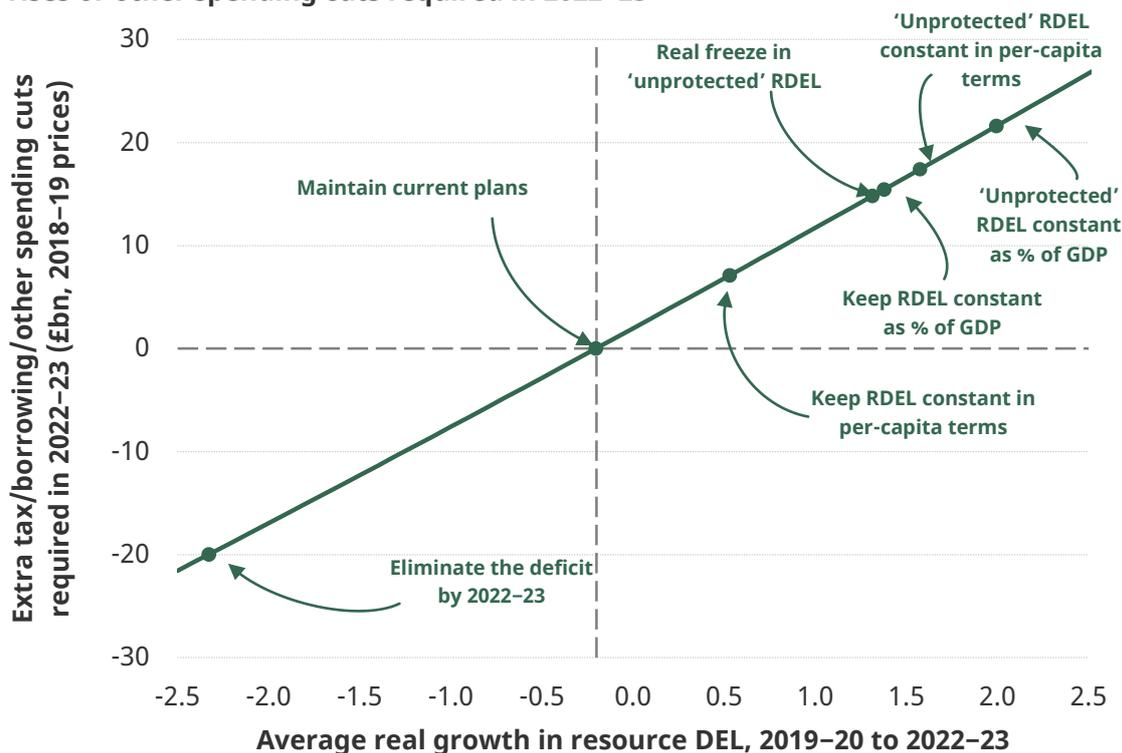
However, the converse is also true: if the performance of the economy is expected to be weaker in future than was forecast in the Spring Statement, then the Chancellor may have even less scope for spending on public services than our figures in this chapter suggest. Given the UK’s forthcoming departure from the European Union, and the resulting highly uncertain nature of economic forecasts for the next few years, this is a particularly difficult time for the government to be making firm plans for spending on public services.

#### Alternative spending scenarios

Figure 4.7 illustrates the trade-off between extra resource DEL spending on the one hand and the tax rises, borrowing or other spending cuts required to pay for it on the other. The point where the axes cross represents the growth rate implied by the government’s existing fiscal plans. All points on the line to the left of the vertical axis represent scenarios where day-to-day departmental spending increases by *less* than forecast at the March Spring Statement, while those to the right illustrate scenarios where departmental spending increases by *more* than the Spring Statement plans. The vertical axis then shows the additional resource spending in real £ billion relative to the 2018–19 baseline, with points higher than the horizontal axis requiring the government to find extra spending cuts, tax rises or borrowing relative to what is (provisionally) planned.

<sup>18</sup> ‘If, in the Autumn, the public finances continue to reflect the improvements that today’s report hints at ... I would have capacity to enable further increases in public spending and investment in the years ahead’ (Philip Hammond, Spring Statement speech, March 2018, <https://www.gov.uk/government/speeches/spring-statement-2018-philip-hammonds-speech>).

**Figure 4.7. Trade-offs between real growth in resource DEL and extra borrowing, tax rises or other spending cuts required in 2022–23<sup>a</sup>**



<sup>a</sup> All illustrative scenarios assume that economic growth and tax revenues would be unaffected by the decision to make greater or smaller cuts to departments' resource budgets.

Note: Any extra spending in 2022–23 is relative to the projections published in the OBR's March 2018 Economic and Fiscal Outlook. The growth rate is calculated for resource DEL (as measured by PSCE in RDEL) against the 2019–20 baseline published in the Economic and Fiscal Outlook. The 'Keep RDEL constant in per-capita terms' scenario assumes that real resource spending grows in line with the UK population. 'Unprotected' RDEL refers to RDEL less resource budgets for NHS England, defence, the Single Intelligence Account, ODA and additional funding for Northern Ireland.

Source: As for Table 4.2, with population projections from supplementary fiscal table 2.17 in the OBR's March 2018 Economic and Fiscal Outlook.

A number of potential policy options are highlighted in Figure 4.7 by points on the line. For example, keeping RDEL constant in per-capita terms would require an additional £7.1 billion (relative to Spring Statement provisional plans), while keeping RDEL constant as a share of national income would require £15.5 billion by 2022–23. Focusing on unprotected RDEL spending (given the commitments set out above), a real-terms freeze would require £14.8 billion; a real-terms per-capita freeze would need £17.4 billion; and an increase in unprotected RDEL in line with national income would need £21.6 billion of additional spending. This final scenario, however, would mean day-to-day spending on 'unprotected' areas growing faster than spending on ODA, defence and security. Should the government wish to increase day-to-day spending on those areas in line with national income also, it would require £22.7 billion of extra spending by 2022–23.

Table 4.3 summarises a subset of these scenarios, showing both the implied percentage and £ billion change in RDEL spending, and the implications for total DEL given the provisional plans for capital spending set out in the Spring Statement. For instance, to

freeze unprotected RDEL in real terms, while honouring all of the government's pre-existing spending commitments, would require tax rises, additional borrowing or spending cuts elsewhere of an extra £14.8 billion by 2022–23 (as was shown in Table 4.2 and Figure 4.7). This would leave RDEL broadly unchanged as a share of national income. If the government's plans for capital DEL (4.0% growth per year) are left unchanged, this would imply annual real growth in total DEL of 1.7% per year over the Spending Review period.

Financing additional spending on public services would not be costless, however, regardless of who is in power. As mentioned above, extra day-to-day spending would

**Table 4.3. Extra tax or borrowing under illustrative scenarios, assuming capital budgets left unchanged<sup>a</sup>**

	Eliminate deficit by 2022–23	Current plans	Real freeze in unprotected RDEL	Unprotected RDEL constant in per-capita terms
Extra tax/borrowing/other (non-DEL) spending cuts	–£20.0bn	<b>£0</b>	+£14.8bn	+£17.4bn
<i>Average annual real growth 2019–20 to 2022–23 in:</i>				
TDEL	–1.3%	<b>+0.5%</b>	+1.7%	+1.9%
CDEL <sup>b</sup>	+4.0%	<b>+4.0%</b>	+4.0%	+4.0%
RDEL	–2.3%	<b>–0.2%</b>	+1.3%	+1.6%
RDEL less NHS, defence and ODA	–7.7%	<b>–3.1%</b>	+0.1%	+0.6%
Unprotected RDEL <sup>c</sup>	–7.7%	<b>–3.1%</b>	0.0%	+0.5%
<i>Cumulative real change (£ billion, 2018–19 prices) in:</i>				
TDEL	–14.7	<b>+5.3</b>	+20.1	+22.7
CDEL <sup>b</sup>	+7.2	<b>+7.2</b>	+7.2	+7.2
RDEL	–22.0	<b>–2.0</b>	+12.8	+15.4
RDEL less NHS, defence and ODA	–34.6	<b>–14.6</b>	+0.3	+2.9
Unprotected RDEL <sup>c</sup>	–34.8	<b>–14.8</b>	0.0	+2.6

<sup>a</sup> All illustrative scenarios assume that economic growth and tax revenues would be unaffected by the decision to make greater or smaller cuts to departments' resource budgets.

<sup>b</sup> This analysis assumes that there is no deviation from the March 2018 projections for capital spending and that any extra tax or borrowing funds additional day-to-day (resource) spending on unprotected areas.

<sup>c</sup> Unprotected RDEL refers to RDEL less NHS England, defence (including intelligence services), official development assistance and additional funding for Northern Ireland.

Note: Figures may not sum due to rounding.

Source: As for Table 4.2, with population projections from supplementary fiscal table 2.17 in the OBR's March 2018 Economic and Fiscal Outlook.

need to be financed through some combination of higher taxes, higher borrowing, lower non-DEL (such as social security) spending or lower investment spending.

### Increase taxes

Extra spending could be financed through tax rises. If the government wished to freeze unprotected RDEL in real terms, costing £14.8 billion by 2022–23 (in 2018–19 prices), that would require a tax rise equivalent to the amount raised by increasing the main rate of VAT by 2.4 percentage points or adding 2.5p to all rates of income tax. The government has indicated that the public should expect tax rises to pay (at least in part) for the recent NHS funding settlement, with the Prime Minister stating that ‘taxpayers will ... need to contribute a bit more in a fair and balanced way’.<sup>19</sup> Options for raising tax revenue are discussed in detail in Chapter 5.

### Increase borrowing

If the Chancellor chooses to spend more on day-to-day spending, but neither reduces other areas of spending nor raises additional revenues, that extra spending would need to be funded through borrowing. An additional £14.8 billion (in 2018–19 prices) of borrowing in 2022–23 would equate to an additional 0.7% of national income. This would (all else unchanged) almost double forecast borrowing in 2022–23 from the 0.9% of national income predicted in the March 2018 Spring Statement to 1.6% of national income. The implications of different paths for borrowing for the long-run public finances are discussed in Chapter 3.

### Cut investment spending

Section 4.2 noted that, amidst cuts to departments’ day-to-day funding, Mr Hammond has consistently prioritised investment spending, and departments’ capital budgets are set to increase in real terms by 12.3% between 2019–20 and 2022–23. The result of Mr Hammond’s focus on capital spending is that public sector net investment (PSNI) is forecast to reach 2.4% of GDP in 2020–21. If this level of investment is maintained, it would be the highest level of sustained investment in 40 years, as shown in Figure 4.8.

Historically, the government has struggled to spend its allocated capital budgets, with a clear tendency to undershoot plans.<sup>20</sup> However, in 2016 and 2017, the plans were deliberately ‘back-loaded’, with much of the growth to come later (in 2019–20 and 2020–21) rather than immediately, so as to improve the chances of the money actually being spent – and spent effectively.

Ultimately, Mr Hammond could choose to row back on his plans for capital investment and rein in the planned growth in CDEL to fund extra day-to-day spending. But to do so would represent a prioritisation of short-term spending pressures over the long term, and risks pulling the plug on projects after years of planning, just as the funding was about to become available. Furthermore, in a recent report, the National Infrastructure Commission recommended that the government deliver long-term certainty over

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<sup>19</sup> ‘Prime Minister sets out 5-year NHS funding plan’, HM Treasury and DHSC press release, 18 June 2018, <https://www.gov.uk/government/news/prime-minister-sets-out-5-year-nhs-funding-plan>.

<sup>20</sup> R. Crawford, P. Johnson and B. Zaranko, *The Planning and Control of UK Public Expenditure, 1993–2015*, IFS Report R147, 2018, <https://www.ifs.org.uk/uploads/R147.pdf>.

**Figure 4.8. Public sector net investment**

Source: OBR Public Finances Databank (accessed 20 July 2018).

infrastructure funding in Spending Review 2019.<sup>21</sup> Such certainty would risk being undermined by the government choosing to alter its existing capital investment plans.

### Cut social security spending

By far the largest component of public spending outside of DEL is spending on social security. In 2017–18, UK spending on social security amounted to 10.7% of national income, or around £222.5 billion in 2018–19 prices.

However, despite its size, there are a number of reasons why making substantial savings from further cuts to social security could prove difficult. First, the majority of this spending goes on pensioners. The breakdown of social security spending between pensioners and working-age individuals and children is illustrated in Figure 4.9. Spending on pensioners accounted for more than 56% of total social security spend in 2017–18. The state pension alone accounted for 44.1% of the total (and more than three-quarters of total pensioner spending), and a further 6.6% was spent on other pensioner-specific benefits.<sup>22</sup> The government has committed to retaining the so-called ‘triple lock’ on the state pension and the universal nature of the winter fuel payment as part of its deal with the DUP. It has also indicated that it sees changes to the state pension age as the way to control state pension spending (should that be necessary), and promised to give notice of any such change. This, combined with the government’s past reluctance to disadvantage older voters, means that the scope for making substantial savings in this area in the short or medium term appears limited. (The decline in social security spending on pensioners in recent

<sup>21</sup> See chapter 7 of National Infrastructure Commission, *National Infrastructure Assessment*, 2018, <https://www.nic.org.uk/publications/national-infrastructure-assessment-2018/>.

<sup>22</sup> ‘Pensioner specific benefits’ is defined here to include pension credit, winter fuel payments, TV licence payments for over-75s, Christmas bonus, cold weather payments, attendance allowance and the Financial Assistance Scheme. See table 2a of DWP expenditure tables for a further breakdown. Note that figures for state pension and ‘pensioner-specific benefits’ are calculated for Great Britain only because specific benefit expenditure by age group is not available for Northern Ireland.

Figure 4.9. UK social security and tax credit spending over time



Source: Authors' calculations using DWP benefit expenditure tables, 2018 (<https://www.gov.uk/government/publications/benefit-expenditure-and-caseload-tables-2018>) and the OBR's Public Finances Databank (accessed 20 July 2018).

years that can be seen in Figure 4.9 has been driven by the increases in the female state pension age since 2010.)

The Chancellor may therefore look to social security spending on working-age adults and children. But this would not be without its own challenges. For one, this group has been most affected by the cuts to social security already made since 2010, including the capping of nominal increases in most working-age benefits at 1% per year for three years from 2013–14.<sup>23</sup> And there are further cuts still to come. In particular, the next few years will see the continued transition from the 'legacy' benefits system to the less generous universal credit (UC) system, which will replace six major means-tested benefits. On top of that, most working-age benefits are also frozen in cash terms until March 2020, and cuts to the generosity of tax credits for families with children – limiting entitlement to the first two children and removing the 'family element' – will gradually be rolled out over the coming years.<sup>24</sup> By 2022–23, working-age social security is forecast to reach its lowest level as a share of GDP since 2002–03.

In March 2016, then Secretary of State for Work and Pensions Stephen Crabb said that the government had 'no further plans to make welfare savings beyond the very substantial savings legislated for by Parliament two weeks ago'.<sup>25</sup> The government may decide to

<sup>23</sup> See, for example, figure 3.4 of J. Browne and W. Elming, 'The effect of the coalition's tax and benefit changes on household incomes and work incentives', IFS Briefing Note BN159, 2015, <https://www.ifs.org.uk/uploads/publications/bns/BN159.pdf>.

<sup>24</sup> A. Hood and T. Waters, *Living Standards, Poverty and Inequality in the UK: 2017–18 to 2021–22*, IFS Report R136, 2017, <https://www.ifs.org.uk/uploads/publications/comms/R136.pdf>.

<sup>25</sup> *Hansard*, 21 March 2016, col. 1268, <https://publications.parliament.uk/pa/cm201516/cmhansrd/cm160321/debtext/160321-0002.htm#16032113000001>.

change course – the statement was made prior to the last election – and opt for cuts above and beyond those already pencilled in. For example, extending the current benefit freeze for an additional three years would free up an estimated £4.1 billion (in 2018–19 prices) of additional spending for public services by 2022–23 (a one-year freeze would free up £1.2 billion, while a two-year freeze would free up £2.7 billion). But further real-terms cuts to working-age benefits would pose considerable political challenges and may have potentially severe consequences for the living standards of those who rely most on state support: working-age benefits are typically received by those in the bottom half of the income distribution. Further cuts to working-age benefits (while protecting benefits for pensioners) would also mean that pensioners' income would continue to grow more quickly than the rest of the population's.

### Cut transfers to the European Union

An obvious question is whether, by leaving the EU, the government is able to reduce financial transfers to Brussels and instead use those funds to increase public service spending without having to increase borrowing, increase taxes or cut other domestic spending.

The OBR estimated in March 2018 that, if the UK were not to leave the EU, transfers to the EU in 2022–23 would amount to (in nominal terms) £16.8 billion (£15.4 billion from the contribution based on the size of our economy, £3.3 billion of VAT payments, £2.8 billion of customs duties and sugar levies, less a rebate of £4.8 billion).<sup>26</sup> With Brexit, it estimated that the agreed financial settlement with the EU might require payments in that year of £7.5 billion instead.<sup>27</sup> In 2018–19 prices, these totals would be £15.7 billion and £7.0 billion respectively.

However, it would be highly misleading to interpret this as meaning that leaving the EU will leave the UK government with an additional nearly £9 billion (in 2018–19 prices) to spend in 2022–23 (the £15.7 billion of transfers the UK would no longer make to the EU, less the £7.0 billion in financial settlements). The UK currently also benefits from a large quantity of financial transfers back from the EU. Public sector receipts from the EU (i.e. funds from the EU that are administered by UK government bodies, such as farm support through the Common Agricultural Policy) were forecast – absent the UK leaving the EU – to amount to £6.1 billion in 2022–23 (£5.7 billion in 2018–19 prices), and other private sector receipts (for example, research funds given to UK universities) which amounted to around £1.5 billion in 2015.<sup>28</sup> If the UK government were to continue to provide financial support to these areas, in lieu of funding from the EU, then there would be considerably less additional resources available from the net savings on its EU contribution to increase RDEL for the benefit of other public services.

<sup>26</sup> £2.8 billion of customs and sugar levies is the gross £3.4 billion collected less the 20% (£0.7 billion) that the UK currently keeps to cover collection costs (figures do not sum due to rounding). See supplementary fiscal table 2.26 of the OBR's March 2018 Economic and Fiscal Outlook.

<sup>27</sup> See annex B of the OBR's March 2018 Economic and Fiscal Outlook for details of how this estimate was produced.

<sup>28</sup> Supplementary fiscal table 2.26 of the OBR's March 2018 Economic and Fiscal Outlook; annex B of HM Treasury, *European Union Finances 2017: Statement on the 2017 EU Budget and Measures to Counter Fraud and Financial Mismanagement*, Cm 9576, 2018, [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/691017/EU\\_finances\\_2017\\_Cm9576\\_web.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/691017/EU_finances_2017_Cm9576_web.pdf).

The Treasury has said that spending decisions will be taken in the Spending Review, but the Chancellor and the Prime Minister have highlighted a number of priorities for continuing support post-Brexit, including the Shared Prosperity Fund, farm support, science and education.<sup>29</sup> Also, as mentioned in Section 4.3, some £0.9 billion of EU ODA spending currently counts towards the UK's 0.7% of national income ODA commitment. If this is no longer the case after Brexit, then that sum would need to be replaced by additional UK spending.

If the UK government were to continue financial support for most areas that are currently funded by the EU, including the £0.9 billion in ODA spending, this would leave around £0.6 billion of additional resources available for increasing RDEL on other public services in 2022–23.<sup>30</sup> This amount would increase in the medium term, however, as the financial settlement payments to the EU would fall to zero over time.

However, leaving the EU may also entail increased responsibilities (and hence costs) for some government departments – in particular, HM Revenue and Customs, the Home Office, the Department for International Trade, the Department for Business, Energy and Industrial Strategy and the Department for the Environment, Food and Rural Affairs. The Institute for Government (IfG) has estimated that preparations for Brexit will cost these departments at least £0.9 billion in 2018–19.<sup>31</sup> While much of these costs may be temporary, there may well be some permanent increases in costs as well – for example, due to increased border security or increased administrative burden arising from new arrangements with the EU. Such costs could then offset some of, or even exceed, the extra £0.6 billion that could be made available for RDEL in 2022–23 by leaving the EU.

So in summary, absent Brexit, the UK was forecast to transfer £15.7 billion (in today's prices) to the EU in 2022–23. Roughly £7.2 billion of this was due to flow back to the UK to be spent by the public and private sectors, and around £0.9 billion was to be spent on overseas aid on the UK's behalf. After Brexit, the UK government will have greater control over this funding and choices to make over the extent to which it is replaced. But this money is not a windfall gain for the UK public finances: channelling some or all of this money to increase day-to-day spending on some services would be equivalent to a cut for those areas currently funded by the EU. In addition, the OBR estimates that the UK will still send £7.0 billion to Brussels in 2022–23 as part of the agreed financial settlement. This leaves approximately £0.6 billion of the UK's forecast contribution to the EU that could potentially be made available to increase spending on day-to-day public services in 2022–23. However, set against this will be the potential – and highly uncertain – direct costs of Brexit to departments, which could offset or even outstrip this modest 'Brexit dividend'.

More broadly and more importantly, all of these figures are extremely uncertain – the financial settlement that the UK may reach with the EU, the spending the EU may continue

<sup>29</sup> 'Local growth: written statement', HCWS927, <https://www.parliament.uk/business/publications/written-questions-answers-statements/written-statement/Commons/2018-07-24/HCWS927/>; <https://www.gov.uk/government/news/chancellor-philip-hammond-guarantees-eu-funding-beyond-date-uk-leaves-the-eu>; <https://www.gov.uk/government/speeches/pm-speech-on-our-future-economic-partnership-with-the-european-union>.

<sup>30</sup> Calculated as the £15.7 billion of transfers the UK would no longer make to the EU, less £7.0 billion of financial settlement, £5.7 billion of replacement funding for public sector receipts from the EU, £1.5 billion of replacement funding for private sector receipts from the EU and £0.9 billion of replacement ODA spending.

<sup>31</sup> J. Owen and L. Lloyd, 'Costing Brexit: what is Whitehall spending on exiting the EU?', IfG Insight, 2018, <https://www.instituteforgovernment.org.uk/publications/costing-brexit-what-whitehall-spending-exiting-eu>.

to do in the UK (or around the world on the UK's behalf) during the transition period, the revenues from any post-EU tariff regime and the long-run costs to government departments of changes to responsibilities as a result of leaving the EU. This is not to mention the uncertain effects of Brexit on the wider economy. It is these broader economic impacts that will have – by far – the greatest effect on the resources available to fund public services.

### Summary

Cancelling or reducing the cuts to departmental resource budgets that were implied by the government's fiscal plans at the time of the 2018 Spring Statement would mean extra spending, and extra spending means that extra money will need to be found from somewhere. There are no easy options, and difficult trade-offs abound. Reductions in the net contributions made by the public sector to the EU could potentially be used to increase DEL spending, but these are highly uncertain and are likely to be small over the next Spending Review period. Raising additional tax revenue would avoid the need to increase borrowing, cut social security or scale back planned increases in investment spending. But tax rises of the scale required could pose economic costs and prove politically difficult. The Chancellor may, therefore, opt for none of the above, and stick to his existing plans, continuing the decade of cuts for most public service areas for yet another three years.

## 4.5 Implications for public services

Whatever the total spending envelope the Chancellor ultimately decides is 'affordable', he will then need to determine the allocation of spending across unprotected departments. In this section, we look at the choices made in past Spending Reviews and what they can tell us about government priorities and the likely distribution of any future cuts. We then consider the implications of further cuts to spending for pay and employment across the public sector. We finish by considering some of the pressures on a number of public services and the possible implications of further cuts to those areas.

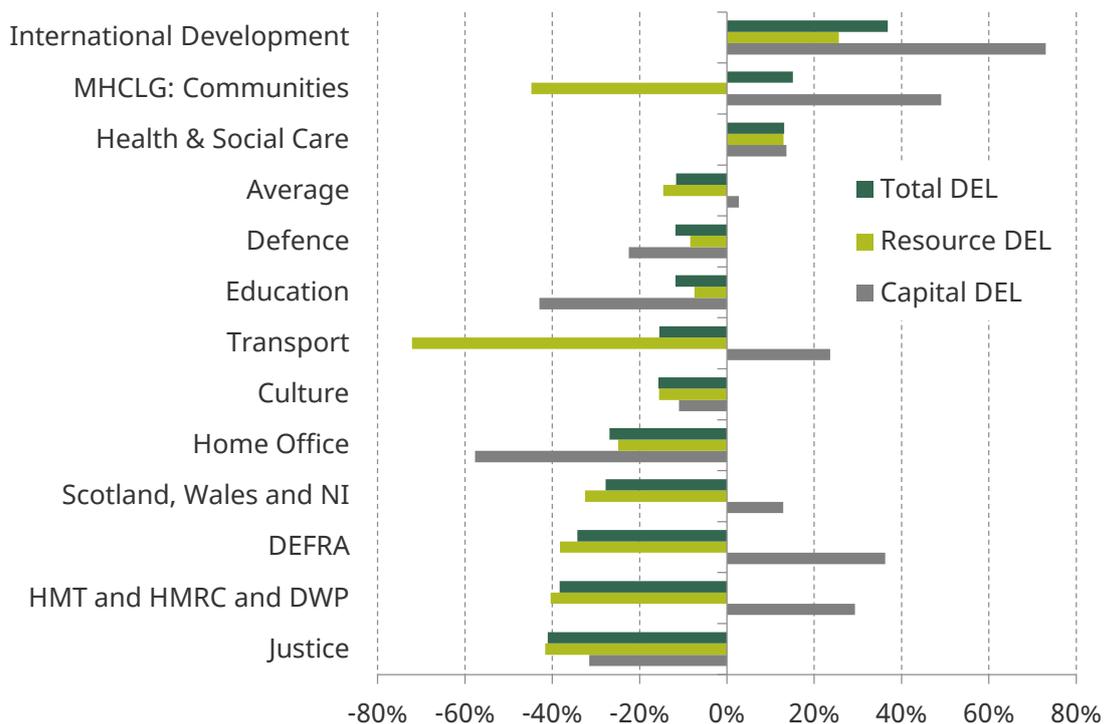
### Choices made so far

#### A question of priorities

The reductions in spending since 2010 have not affected departments equally, with the government choosing to prioritise particular areas. Between 2010–11 and 2015–16, spending on the NHS and day-to-day spending on schools were protected from cuts. Spending on overseas aid was increased to reach the targeted level of 0.7% of national income and, in more recent years, spending on defence and the police has also been protected.

Figure 4.10 shows the change in departments' resource, capital and total budgets since 2010–11. The only departments to have seen an increase in their day-to-day resource spending are the Department for International Development and the Department of Health (now Health and Social Care). Education and defence have been relatively well protected in terms of day-to-day spending, in that they have been cut by less than the average. The Department for Transport has experienced particularly deep cuts to its day-to-day spending, but is set to receive a substantial boost in its capital budget over the coming years. Similarly, the 'Ministry of Housing, Communities and Local Government: Communities' budget for day-to-day spending has been cut significantly, but this has been more than offset by increases in its capital budget (which includes government

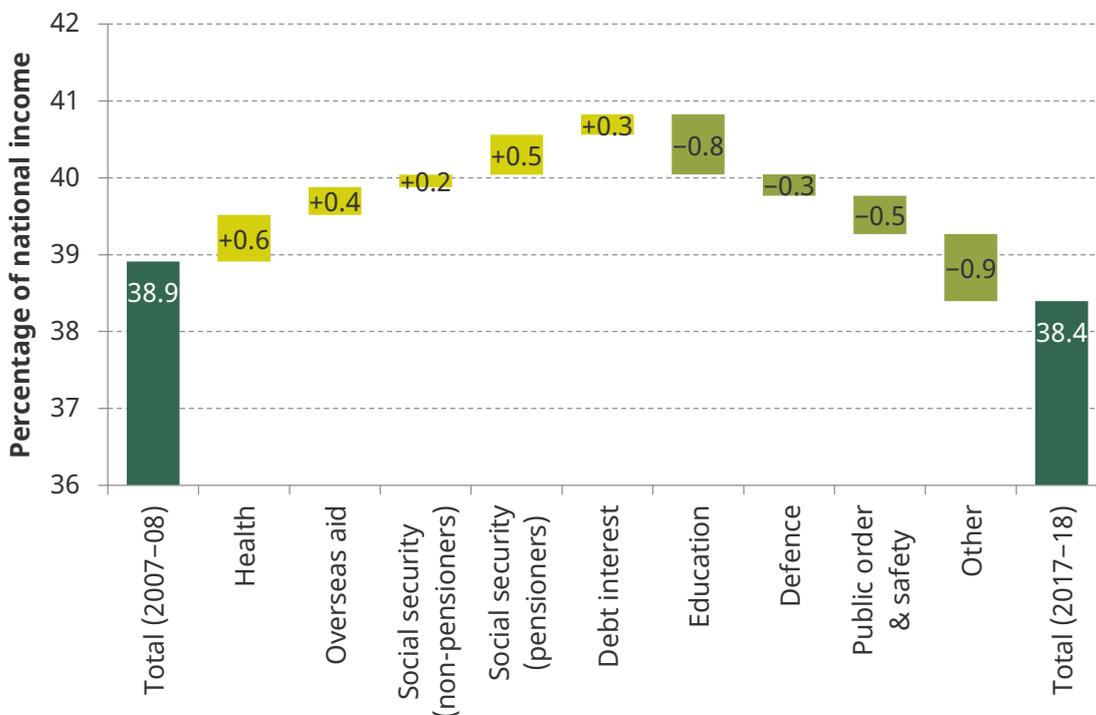
**Figure 4.10. Real-terms departmental budget changes, 2010–11 to 2019–20**



Note: Resource budgets here exclude depreciation.

Source: Authors' calculations using various HM Treasury Public Expenditure Statistical Analyses.

**Figure 4.11. Changes in composition of total public spending, 2007–08 to 2017–18**

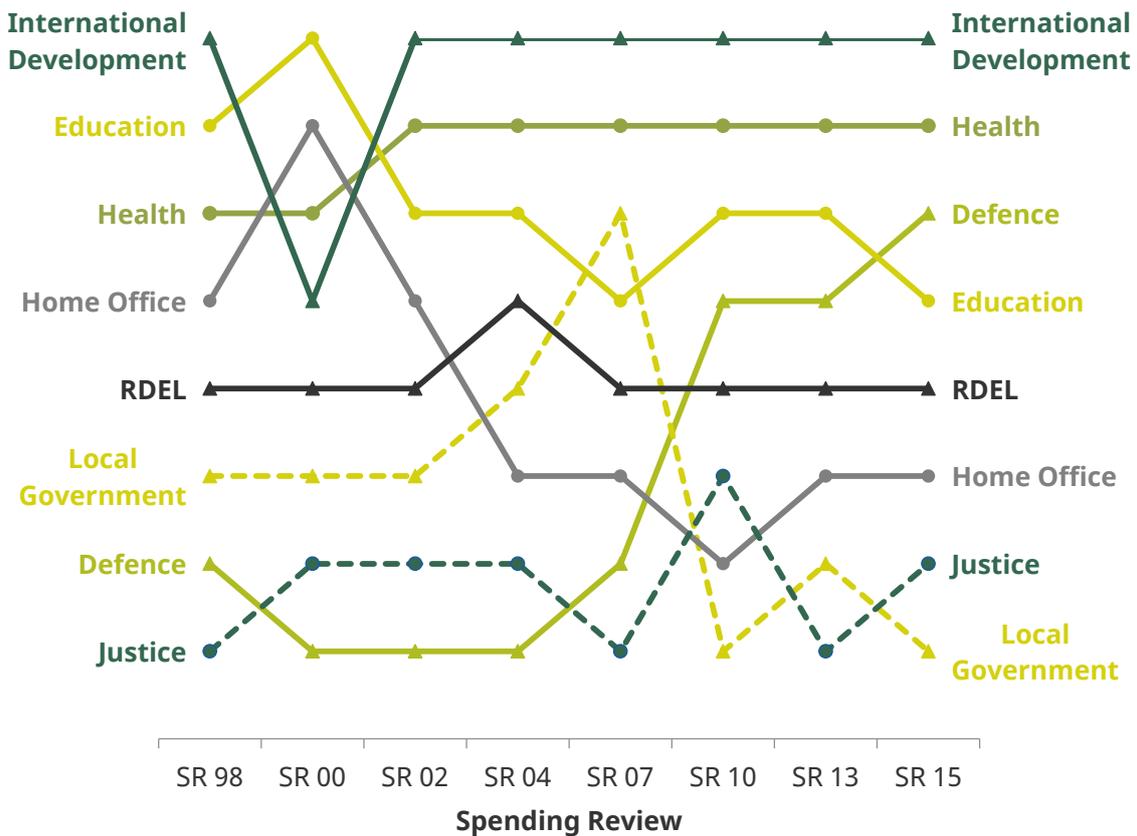


Source: Authors' calculations using HM Treasury's Public Expenditure Statistical Analyses 2018, the OBR's Public Finances Databank (accessed 20 July 2018) and DWP benefit expenditure tables 2018.

investment in housing and capital grants such as ‘Help to Buy’).<sup>32</sup> Other departments that have faced substantial cuts since 2010 include the Department for Environment, Food & Rural Affairs (DEFRA) and the Ministry of Justice, both of which are set to see further reductions between now and 2019–20.

This has led to a change in the composition of public spending. Figure 4.11 shows that, between 2007–08 and 2017–18, spending on health, social security, overseas aid and debt interest grew to account for a greater share of national income. Over the same period,

**Figure 4.12. Ranking of planned growth in resource DEL and selected departmental resource budgets at each Spending Review (SR)**



Note: Departments are ranked in descending order of planned average annual real growth rate, so the department planned to grow at the fastest rate at the Spending Review in question is at the top of the figure and the department planned to grow by the least is at the bottom of the figure.

Source: Authors’ calculations based on various Spending Reviews. Real growth rates are taken from the SR documents if published, and calculated using nominal spending plans and contemporaneous GDP deflator forecasts if not. Between SR 1998 and SR 2007, ‘Education’ refers to UK education spending, which includes both central government spending within DEL and locally financed expenditure within AME. In SR 2010, 2013 and 2015, ‘Education’ refers to the Department for Education. ‘Justice’ refers to Legal Departments at SR 1998 and SR 2000, Lord Chancellor’s Departments at SR 2002, Department for Constitutional Affairs at SR 2004, and Department of Justice from SR 2007 onwards. ‘Local Government’ refers to Department of the Environment, Transport and the Regions – Local Government and Regional Policy at SR 1998, Local Government at SR 2000, 2002 and 2004, DCLG Local Government at SR 2007, 2010 and 2013, and to DCLG Local Government RDEL at SR 2015.

<sup>32</sup> The Ministry of Housing, Communities and Local Government has two separate DELs: the ‘Local Government’ DEL (not shown in Figure 4.10) includes general and specific grants to local authorities, while the ‘Communities’ DEL includes the department’s main programme expenditure and administration costs.

spending on education, public order & safety, defence and other areas of spending have fallen as a proportion of GDP. The reduction in spending on public order & safety was particularly large in proportionate terms, falling from 2.0% of GDP to around 1.5%.

Going back further, several of these areas have been consistently prioritised – or not – for much of the last 20 years. Figure 4.12 shows the ranking of planned growth rates in departments' day-to-day resource budgets at each Spending Review since 1998, along with where the planned growth in overall resource DEL sits in that ranking. Departments above the black line were planned to grow faster than overall resource spending; those below were planned to grow at a slower rate. Health, Education and International Development resource budgets have always been prioritised, in the sense that they were always planned to grow at a faster rate than the overall total. In contrast, Justice and Local Government show a clear tendency to grow by less than average resource spending, reflecting the lack of prioritisation of those areas.

Over the past decade, the relative priorities of different departments have become even more stable. In each of the past three Spending Reviews, the same group of departments – International Development, Health, Defence and Education – have received above-average increases in resource spending. By contrast, departments such as the Home Office have joined the group of departments that consistently receive below-average spending increases. The stability of these patterns, and the existing spending commitments relating to departments that have already seen bigger increases, suggest that any spending cuts going forward are unlikely to fall heavily on these areas. Instead, if the Chancellor decides to make further reductions in spending, we might expect the bulk of the cuts to fall on the departments that have not been prioritised and protected so far.

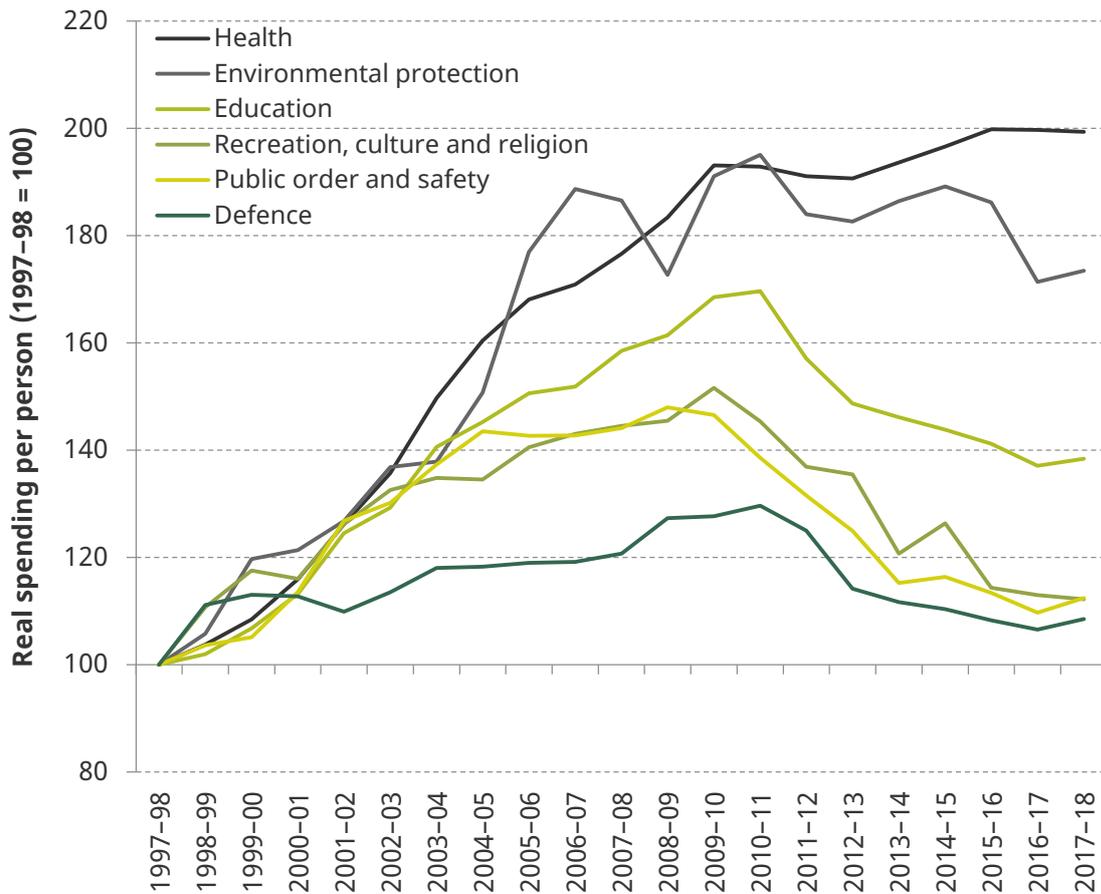
### The challenge of further cuts

Further cuts to unprotected departmental budgets after 2019–20 would come on top of substantial cuts already made since 2010–11. Making further reductions to these and other unprotected budgets would risk reducing the range and quality of services to below what the public expects.

Figure 4.10 showed that numerous departments will already have faced real-terms cuts of more than 30% in their day-to-day spending over the past decade. In per-person terms, the cuts have been even greater. Figure 4.13 shows how spending per person on a number of functions has changed since 1997–98. While spending on health has continued to grow over time, other areas have fared less well. After increasing over the late 1990s and 2000s, per-person spending on public order and safety and on recreation, culture and religion has fallen to levels last seen at the turn of the millennium. Even areas that have been relatively protected are at low levels by recent standards – for example, defence spending per person is at its lowest level since 1997–98, while total education spending fell in 2016–17 to its lowest level since 2002–03. (Though as discussed in more detail later in this chapter, and in a recent IFS report,<sup>33</sup> this picture for total education spending hides markedly different experiences for different parts of education, with spending on schools having been relatively protected and spending on further education and some aspects of early years education having fared relatively badly. Spending on higher education, on the metric measured in Figure 4.13, has also fallen dramatically, though this is primarily due to

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<sup>33</sup> C. Belfield, C. Farquharson and L. Sibieta, *2018 Annual Report on Education Spending in England*, IFS Report R150, 2018, <https://www.ifs.org.uk/uploads/publications/comms/R150.pdf>.

**Figure 4.13. Real spending per person on selected functions**

Source: Authors' calculations using ONS population estimates, June 2018 GDP deflators and table 4.2 of HM Treasury Public Expenditure Statistical Analyses, July 2018.

financing reforms and the accounting treatment of student loans rather than a genuine decline of that extent in ultimate taxpayer support for higher education.)

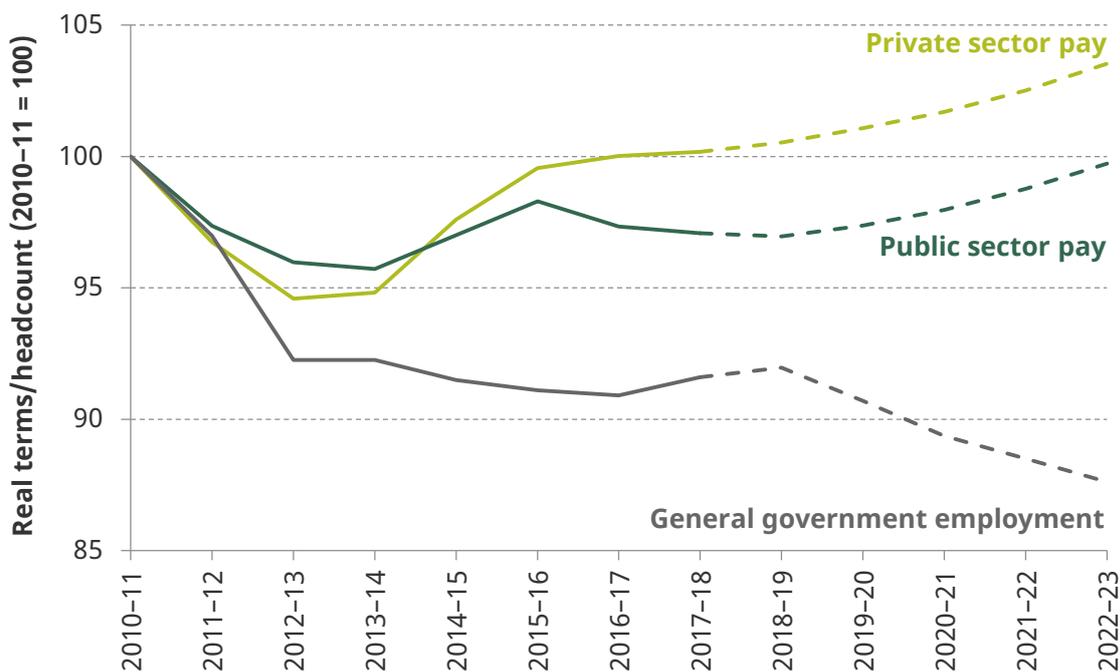
### Public sector pay and employment

Public services are provided by a public sector workforce (where both the size and the quality of the workforce are important), using other non-labour inputs. Since 2010, cuts to departments' day-to-day spending have been delivered in part through a reduction in the number of workers, in part through a squeeze on public sector pay and in part through reductions in non-paybill spending.

Figure 4.14 shows the change since 2010–11 in average private and public sector weekly earnings and general government employment (headcount). Since 2010, the government has exercised considerable restraint of public sector pay.<sup>34</sup> The result is that average weekly earnings in the public sector fell in real terms (relative to inflation as measured by the Consumer Prices Index) by 2.9% between 2010–11 and 2017–18. This restraint of public sector pay meant that the cuts to RDEL could be achieved with lower cuts to government

<sup>34</sup> For further discussion, see J. Cribb, 'Public sector pay: still time for restraint?', IFS Briefing Note BN216, 2017, <https://www.ifs.org.uk/uploads/publications/bns/BN216.pdf>.

**Figure 4.14. Pay and employment since 2010–11**



Note: Private and public sector pay refer to average gross weekly earnings. Pay and general government employment figures are taken from last quarter of each financial year. Dashed lines indicate forecasts – these assume that private sector gross weekly earnings grow in line with economy-wide earnings growth in 2018-19 onwards and that public sector gross weekly earnings grow in line with the OBR’s assumption for paybill-per-head growth from the March 2018 Economic and Fiscal Outlook.

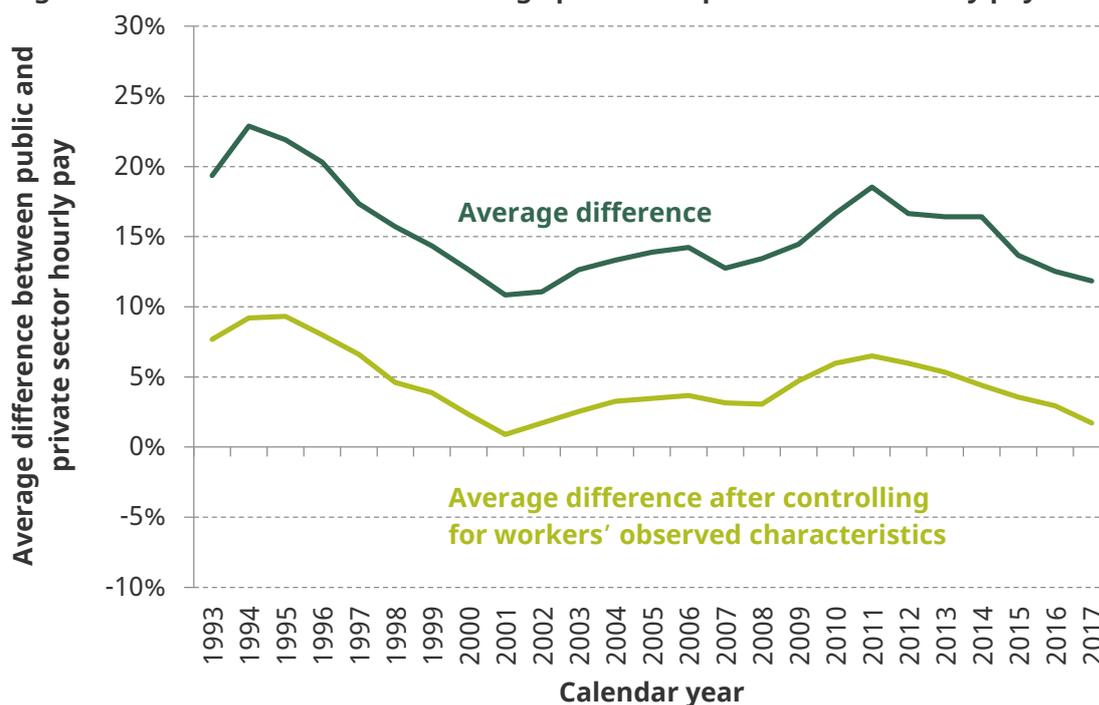
Source: Authors’ calculations using ONS series G6NW, KAC4 and KAD8 and OBR’s March 2018 Economic and Fiscal Outlook. Pay series are deflated using the Consumer Prices Index (ONS series D7BT).

employment and non-paybill spending than would otherwise have been required. Even so, over the same period, the number of people employed by government fell by 8.4%.

Holding down public sector pay is not a ‘free’ way of reducing public spending. It will reduce the incentive to work in the public sector relative to the private sector, and potentially harm levels of motivation among public sector employees, therefore leading to a reduction in the quality of the public sector workforce – which can have implications for the level and/or quality of public services provided.

However, over the period up to 2013–14, pay in the private sector was not growing particularly rapidly either. Figure 4.15 shows the gap between average public and private sector pay over time. A significant gap in favour of public sector workers opened up during the recession, and until 2015 the pay restraint largely acted just to close that gap. This meant that it may have been easier for the government to hold down public sector pay over this period without significant adverse consequences for the recruitment and retention of quality workers.

From 2014–15 onwards, however, private sector pay has grown considerably more rapidly than public sector pay. The gap between average pay in the public and private sectors has therefore fallen to around the level it was at the start of the millennium. There have also been other reforms – increases in employee public sector pension contributions phased in

**Figure 4.15. Difference between average public and private sector hourly pay**

Note: A positive difference means that public sector pay is higher than private sector pay, on average. Includes only pay and not other aspects of the compensation package such as pensions. Difference controlling for workers' observed characteristics controls for differences in age, sex, education, experience and region.

Source: Authors' calculations using Labour Force Survey 1993–2017.

from 2012, and an increase in National Insurance contributions associated with the ending of contracting out from 2016–17 – that will have further reduced the average gap between the public and private sectors in terms of the net value of the total pay received.

Independent pay review bodies have increasingly raised concerns about retention and recruitment in the last two years. Recent statistics show that the level of unfilled vacancies for nurses has risen by around 20% since late 2015,<sup>35</sup> and the recruitment of initial teacher trainees has been below target every year since 2011.<sup>36</sup> Perhaps in recognition of the risk of recruitment and retention issues (and the role that worker quality plays in delivering public services), the government announced in September 2017 that from 2018–19 (i.e. two years earlier than planned) it would lift the 1% cap on public sector pay rises,<sup>37</sup> opening the door to more generous pay awards. In July 2018, the government announced more generous settlements for teachers, prison officers, members of the armed forces, police, doctors and dentists.<sup>38</sup>

In some sense, it is true that the government has increased costs to departments by ending the public sector pay cap, while departments' budgets (set in the 2015 Spending

<sup>35</sup> <https://files.digital.nhs.uk/8F/D1CA73/nhs-vac-stats-feb15-mar18-eng-rep.pdf>.

<sup>36</sup> D. Foster, 'Teacher recruitment and retention in England', House of Commons Library Briefing Paper 7222, 2018, <https://researchbriefings.parliament.uk/ResearchBriefing/Summary/CBP-7222>.

<sup>37</sup> BBC News, 12 September 2017, <https://www.bbc.co.uk/news/uk-politics-41241295>.

<sup>38</sup> <https://www.gov.uk/government/news/around-one-million-public-sector-workers-to-get-pay-rise>.

Review) have not been changed in response. However, how much harder these new pay settlements make it for departments to meet service expectations given their existing budgets depends crucially on how higher pay feeds through into the quality and productivity of the workforce, and how easily departments can trade off a more productive workforce against the number of workers and other non-labour inputs they require. This is very difficult to know, and is likely to vary across the public sector and across the country.

The OBR forecast in March 2018 that public sector pay per head would increase in line with private sector earnings growth between 2019–20 and 2022–23 – i.e. by 3.1% in real terms (when deflated using the GDP deflator). This will obviously be challenging for departments, over a period in which the provisional Spring Statement plans imply RDEL will be cut by 0.6% and RDEL for ‘unprotected’ departments will be cut by 9.3%.

The consequence of rising pay at a time of falling budgets is that employment by government departments will fall. The OBR forecast in the Spring Statement that the provisional RDEL plans, combined with its earnings growth assumption, implied that general government employment would need to fall by 3.4% between 2019–20 and 2022–23. In other words, going forward, the RDEL cuts are likely to be much more dependent on reducing employment than has been the case to date. This can be seen in the sharp fall in forecast general government employment from 2018–19 onwards in Figure 4.14, after a period of relative stability. Such declines would take general government employment to its lowest headcount since around 2002 (once reclassifications are taken into account) and its lowest share of the workforce since at least 1971. The implications of this for the quality and quantity of public services that can be delivered should not be taken lightly.

Departments are also likely to face a pure cost pressure in future from an increase in employer pension contributions arising from the latest quadrennial valuation of public sector pension schemes. The Government Actuary’s Department is currently working on these valuations, but early indications – presented by the Chief Secretary to the Treasury to Parliament in September 2018 – suggest that employer contributions to the public service pension schemes (covering the NHS, teachers, armed forces, police, firefighters, local government workers, the judiciary and the civil service) are likely to increase from 2019 onwards as a result of a reduction in the discount rate used to calculate the current cost of future pension payments.<sup>39</sup> The Treasury will support departments with unexpected costs in 2019–20, but in future years these additional costs will have to be borne by departments from within the DEL budgets allocated in the next Spending Review. Although it is difficult to estimate the cost of these changes until further details are known, any increase in the required pension contributions from public sector employers will make the spending pressure for unprotected departments even greater than the figures for real-terms cuts set out in Sections 4.3 and 4.4 imply and would imply even greater cuts to employment in the absence of any change to expected pay settlements.

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<sup>39</sup> ‘Quadrennial valuations of the public service pension schemes: written statement’, HCWS945, <https://www.parliament.uk/business/publications/written-questions-answers-statements/written-statement/Commons/2018-09-06/HCWS945/>.

## Examples of pressures on particular public services

Many of the public services that have experienced cuts since 2010 are under increasing pressure, and Mr Hammond is already facing calls from some to increase, rather than decrease, spending on many areas. We discuss just a few of these areas here.

### Prisons

One public service very much showing signs of strain is the prison system. Spending on prisons fell by more than a fifth between 2009–10 and 2016–17, while the prison population remained broadly constant. These cuts to the budget were accompanied by a sharp reduction in staff numbers, with the number of core prison staff in March 2017 being 26% below 2010 levels.<sup>40</sup>

Over this period of spending cuts, service quality inside prisons has markedly deteriorated. Figure 4.16 shows the change in the number of safety incidents since 2007–08. During the first few years of budget cuts, there was little change in the number of assaults on staff, prisoner-on-prisoner assaults or self-harm incidents. However, since 2014–15, the number of incidents has dramatically increased and is on an alarming upward trajectory. For instance, the number of assaults on staff in 2017–18 (8,608) was more than three times higher than in 2007–08 (2,820).<sup>41</sup> The number of self-harm incidents more than doubled, from 22,462 to 46,859. Recent inspections have shown serious failings

**Figure 4.16. Change in the number of prison safety incidents since 2007–08**



Source: Ministry of Justice, 'Safety in custody quarterly: update to March 2018', <https://www.gov.uk/government/statistics/safety-in-custody-quarterly-update-to-march-2018>.

<sup>40</sup> IfG and CIPFA, *Performance Tracker: Autumn 2017*, <https://www.instituteforgovernment.org.uk/publications/performance-tracker-autumn-2017>.

<sup>41</sup> This may be an underestimate of the true increase, as Ministry of Justice analysis has revealed some under-reporting of assaults and self-harm incidents. See annex A of Ministry of Justice, 'Safety in custody quarterly: update to March 2018', <https://www.gov.uk/government/statistics/safety-in-custody-quarterly-update-to-march-2018>.

inside HMP Birmingham, and prison staff across England and Wales have staged widespread protests over the level of violence inside prisons.<sup>42</sup>

In recognition of the challenges facing the prison system, at the 2016 Autumn Statement the Chancellor provided an additional £500 million of funding to the Ministry of Justice, including a programme to recruit 2,500 additional prison officers.<sup>43</sup> Rory Stewart, the prisons minister, recently promised to resign in a year's time if he fails to cut drugs and violence in prisons before then.<sup>44</sup>

Spending cuts may not be the only, or even the primary, cause of the deterioration in security and service quality inside prisons. But on the face of it, the data suggest that, while the prison system coped reasonably well with the first few years of cuts, there are now clear signs of deterioration. To the extent that these are linked to falling spending over this period, it is hard to see how the government could make further budget cuts within the existing prison system without having worrying consequences for prisoner and staff safety.

### Social care

While spending on health has been protected since 2010, the same cannot be said for social care. In England, councils' spending on adult social care fell by 10% in real terms between 2009–10 and 2014–15 as a result of cuts to council funding from central government. Despite recent increases and the introduction of a 'social care precept' to allow councils to raise additional funds for adult social care, adult social care spending in 2017–18 was budgeted to be 3% lower in 2017–18 than in 2009–10.<sup>45</sup> The result has been fewer people accessing publicly funded adult social care, which has likely led to increasing levels of unmet need.

There is also growing concern over the impact social care cuts have had on NHS services. Recent IFS research shows that cuts to social care in England have led to a modest increase in the use of Accident and Emergency services amongst the older population (though one that is not particularly costly to the public purse).<sup>46</sup> Cuts to funding have also called into question the sustainability of some parts of the care home sector, with providers who are more reliant on public funding facing increasing financial difficulties.<sup>47</sup>

A recent report, co-authored by researchers at IFS and the Health Foundation, outlined the pressures facing social care and estimated that funding would need to increase by 3.9% a year to meet the needs of an ageing population and an increasing number of

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<sup>42</sup> BBC News, 10 August 2018, <https://www.bbc.co.uk/news/uk-england-birmingham-45145971>; BBC News, 14 September 2018, <https://www.bbc.co.uk/news/uk-45518744>.

<sup>43</sup> HM Treasury, *Autumn Statement 2016*, <https://www.gov.uk/government/topical-events/autumn-statement-2016>.

<sup>44</sup> BBC News, 17 August 2018, <https://www.bbc.co.uk/news/uk-45214414>.

<sup>45</sup> D. Phillips and P. Simpson, 'Changes in councils' adult social care and overall service spending in England, 2009–10 to 2017–18', IFS Briefing Note BN240, 2018, <https://www.ifs.org.uk/uploads/BN240.pdf>.

<sup>46</sup> R. Crawford, G. Stoye and B. Zaranko, 'The impact of cuts to social care spending on the use of Accident and Emergency departments in England', IFS Working Paper W18/15, 2018, <https://www.ifs.org.uk/uploads/publications/wps/WP201815.pdf>.

<sup>47</sup> Competition and Markets Authority, *Care Homes Market Study*, 2017, <https://www.gov.uk/cma-cases/care-homes-market-study>.

younger adults living with disabilities.<sup>48</sup> The report also emphasised the importance of considering the health and social care systems together, and not increasing spending on one at the expense of the other.

In the past, Mr Hammond has shown that he is willing to find additional money for social care.<sup>49</sup> In the coming months and years, he will surely be under pressure to do so again. In addition, the government has said it will publish a Green Paper on the future of social care for older people later this year (albeit after previously promising to publish one at an earlier date). Any rebalancing of the social care system looks likely to increase, rather than reduce, pressures on the public purse.

### Local government

Social care is not the only service to have been affected by cuts to local government funding since 2010. In fact, councils in England have chosen to protect social care relative to other service areas. Spending on services other than adult social care – which include environmental services, culture and leisure services, maintenance of local roads, housing, and planning and development – fell by 28% in real terms between 2009–10 and 2017–18.<sup>50</sup> Within that, some areas have fared particularly badly: between 2009–10 and 2016–17, spending on planning and development was cut by nearly 60% in real terms, housing by over 45% and transport and cultural services by around 40% each, while spending on environmental services was ‘only’ cut by around 14%.<sup>51</sup>

In spite of these sharp spending reductions and the scaling back of some services, residents’ satisfaction with these services has largely held up and a recent National Audit Office (NAO) report found that local authorities have done well to manage substantial funding reductions since 2010.<sup>52</sup> However, as with the prison system, the cuts are starting to bite. The NAO report also found that the financial position of the local government sector has worsened markedly in recent years, with growing numbers of local authorities overspending on services and draining their reserves at an unsustainable rate amidst growing demand and cost pressures. As the difficulties at Northamptonshire County Council rumble on and other local authorities are forced to cut services to the ‘legal minimum’, further cuts in funding for local government could come at a high cost.

### Schools

Spending on schools covers pupils aged 5–16 and has largely been protected from the recent cuts to public service spending. Between 2011–12 and 2017–18, primary school spending per pupil has fallen by around 1% in real terms, while secondary school spending per pupil has fallen by around 5%.<sup>53</sup> Schools spending per pupil is planned to be

<sup>48</sup> A. Charlesworth and P. Johnson (eds), *Securing the Future: Funding Health and Social Care to the 2030s*, Institute for Fiscal Studies and Health Foundation Report, 2018, <https://www.ifs.org.uk/publications/12994>.

<sup>49</sup> In the March 2017 Budget, the Chancellor announced an additional £2 billion of funding for adult social care over three years.

<sup>50</sup> D. Phillips and P. Simpson, ‘Changes in councils’ adult social care and overall service spending in England, 2009–10 to 2017–18’, IFS Briefing Note BN240, 2018, <https://www.ifs.org.uk/uploads/BN240.pdf>.

<sup>51</sup> N. Amin Smith, D. Phillips, P. Simpson, D. Eiser and M. Trickey, *A Time of Revolution? British Local Government Finance in the 2010s*, IFS Report R121, 2016, <https://www.ifs.org.uk/uploads/publications/comms/R121.pdf>.

<sup>52</sup> National Audit Office, *Financial Sustainability of Local Authorities 2018*, Session 2017–19, HC 834, 2018, <https://www.nao.org.uk/wp-content/uploads/2018/03/Financial-sustainability-of-local-authorities-2018.pdf>.

<sup>53</sup> C. Belfield, C. Farquharson and L. Sibieta, *2018 Annual Report on Education Spending in England*, IFS Report R150, 2018, <https://www.ifs.org.uk/publications/13306>.

frozen in real terms between 2017–18 and 2019–20.<sup>54</sup> Compared with other areas, schools spending has therefore fared relatively well over this period. Further, these relatively small cuts come after a period of rapid growth. Given the large increase in schools spending seen over the 2000s, schools spending per pupil will continue to be around 60% higher than it was in 2000 – in other words, at historically high levels.

In the coming years, the government is also set to reform the funding system in England by introducing a national funding formula (NFF) for all schools.<sup>55</sup> In July 2017, following significant public pressure, the government announced an additional £1.3 billion in funding over two years to ease the transition.<sup>56</sup> The full roll-out of the NFF has now been delayed until at least 2021<sup>57</sup> but, given the explicit prioritisation and protection of school spending to date, Mr Hammond may face political pressure to provide extra funding over the Spending Review period to pay for additional transitional protections, or to further delay the roll-out.

Whether or not the government will continue to protect schools spending going forwards is open to debate. On the one hand, it has been a clear priority of the coalition and Conservative governments to date to shield schools from the depth of cuts seen in other areas. On the other hand, with spending at historically high levels (and without the same demographically driven demand pressures as are present in the health system), it is perhaps harder to argue that it is not feasible to cut schools spending – particularly in the context of the pressures facing other public services, and indeed other areas of education.

While schools spending has been better protected than many budget lines over the past decade, other areas of education have fared considerably less well. Real spending per student in further education and sixth-form colleges has fallen by 12% between 2011–12 and 2017–18. Total early years spending (on children aged 5 and under) has increased by 13% between 2010–11 and 2017–18, but this has been driven by the increasingly generous entitlement for free childcare. Spending on Sure Start, for example, has fallen by 59% over that period.<sup>58</sup>

### Higher education

Large reductions in resource DEL since 2010 have been brought about by changes to the way in which higher education (HE) in England is funded. In 2012, the government stopped providing teaching grants to universities for all but ‘high-cost’ subjects, and instead increased the cap on the tuition fees that universities could charge students from £3,000 to £9,000 per year. Tuition fee loans available to students to cover these fees were

<sup>54</sup> Slightly offsetting this are the large cuts to local authority spending on school services since 2009–10 (for example, central spending on pupils with special educational needs, on transport and on educational psychology). Furthermore, cuts to sixth-form funding will affect the overall budgets of schools that have sixth forms for students aged 16–18.

<sup>55</sup> For a discussion, see C. Belfield and L. Sibieta, ‘The short- and long-run impact of the national funding formula for schools in England’, IFS Briefing Note BN195, 2017, <https://www.ifs.org.uk/uploads/publications/bns/BN195.pdf>.

<sup>56</sup> <https://www.gov.uk/government/news/13bn-for-core-schools-budget-delivers-rise-in-per-pupil-funding>.

<sup>57</sup> The Department for Education has announced that local authorities will continue to determine local formulas in 2020–21 (Education & Skills Funding Agency, ‘Schools block funding formulae 2018–19’, 2018, [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/726783/Proforma\\_publication\\_18-19\\_FINAL\\_FOR\\_PUBLICATION.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/726783/Proforma_publication_18-19_FINAL_FOR_PUBLICATION.pdf)).

<sup>58</sup> C. Belfield, C. Farquharson and L. Sibieta, *2018 Annual Report on Education Spending in England*, IFS Report R150, 2018, <https://www.ifs.org.uk/publications/13306>.

consequently increased (and the repayment terms altered). Furthermore, in 2016, maintenance grants for students were abolished and replaced with additional loans.

Since loans do not count as ‘spending’, these changes have the appearance of dramatically reducing public spending on higher education. Belfield et al. (2018)<sup>59</sup> estimate that, for the cohort of students entering HE in 2017–18, the cost of government spending in the form of direct grants would have been £6.8 billion under the 2011 finance system, but was only £0.8 billion under the 2017 financing arrangements (in 2018 prices). Given that the level of this measure of spending on HE is now so low, it will not be possible to find a similar degree of cuts going forwards.

However, it is important to realise that, while student loans do not count as ‘spending’, the vast majority are not actually expected to be repaid in full, and they therefore do imply a significant public cost in the long run. Belfield et al. (2018) estimate that the total long-run government contribution in respect of the 2017–18 cohort of students will be £8.5 billion under the 2017 system, compared with £9.3 billion under the 2011 system – a substantially smaller reduction in long-run public support than the fall in the measure of ‘spending’ that is included in resource DEL.

The current way in which public support for HE is provided (largely through subsidies from writing off student loans) is opaque.<sup>60</sup> The government is currently undertaking a review of post-18 education, examining how to ‘ensure our post-18 education system is joined up and supported by a funding system that works for students and taxpayers’.<sup>61</sup> While the terms of reference for the review state that ‘its recommendations must be consistent with the Government’s fiscal policies to reduce the deficit and have debt falling as a percentage of GDP’, it is possible that the review will recommend increasing the overall level of state spending on post-18 education.

### Other public services

Perhaps unsurprisingly, after almost a decade of spending restraint, the Chancellor will not be short of requests for additional funding. For instance, a recent report from the House of Commons Defence Committee concluded that ‘defence spending is far too low’ and that the government should begin moving the level of defence expenditure back towards 3% of GDP (rather than the 2% NATO target), which would imply more than £20 billion of extra spending in today’s terms.<sup>62</sup> A cross-party group of politicians wrote to the Chancellor in July calling for him to commit £24 billion of funding for the high-speed Northern Powerhouse Rail scheme.<sup>63</sup> And the Criminal Bar Association has recommended

<sup>59</sup> C. Belfield, C. Farquharson and L. Sibieta, *2018 Annual Report on Education Spending in England*, IFS Report R150, 2018, <https://www.ifs.org.uk/publications/13306>.

<sup>60</sup> C. Belfield, J. Britton, C. Crawford, L. Dearden, L. van der Erve and A. Vignoles, ‘Response to call for evidence for the post-18 funding review from the Institute for Fiscal Studies’, 2018, <https://www.ifs.org.uk/publications/12980>.

<sup>61</sup> Department for Education, ‘Review of post-18 education and funding: terms of reference’, 2018, <https://www.gov.uk/government/publications/review-of-post-18-education-and-funding-terms-of-reference>.

<sup>62</sup> House of Commons Defence Committee, *Beyond 2 Per Cent: A Preliminary Report on the Modernising Defence Programme*, Seventh Report of Session 2017–19, HC 818, 2018, <https://publications.parliament.uk/pa/cm201719/cmselect/cmdfence/818/818.pdf>.

<sup>63</sup> <http://northernpowerhouseappg.org.uk/wp-content/uploads/2018/08/Budget-Submission.pdf>.

that its members go on strike in protest at 'relentless cuts' to legal aid and a 'collapsing' criminal justice system.<sup>64</sup>

In short, the Chancellor would face no end of difficult decisions in trying to make the spending cuts implied by the Spring Statement fiscal plans.

## 4.6 Conclusion

The Budget this autumn is expected to set a firm overall path for public spending for 2020 and beyond, in advance of next year's Spending Review. The provisional totals set out in the March 2018 Spring Statement imply a £2 billion real cut to day-to-day departmental spending between 2019–20 and 2022–23. However, the recent NHS funding announcement will cost £12 billion over that period, and the government has other commitments on defence and aid spending as well. Furthermore, any continuation of the Conservatives' current agreement with the DUP could entail additional funding for Northern Ireland. This means that other, unprotected, departments would be faced with almost £15 billion of cuts in their day-to-day spending, or an average 3.1% per year, should the Chancellor stick to his existing provisional plans – around the same pace of cuts experienced by these areas since 2010.

Further cuts to unprotected departments will be difficult to achieve on top of the considerable cuts already made since 2010. Mr Hammond may therefore want to increase day-to-day spending on public services – but this will require some combination of tax increases, higher borrowing or cuts to other areas of spending, such as social security, investment or perhaps net contributions to the EU. None of this is easy (as discussed in Chapters 3 and 5), even without any adverse economic impacts from the UK's forthcoming departure from the European Union. All in all, the Chancellor has been dealt a tricky hand and faces some difficult and unenviable choices in the months ahead.

Given the difficult trade-offs the Chancellor faces, the way the budgeting process has proceeded over the last few months leaves a lot to be desired. If the government is to have a Spending Review, all public spending should be considered at the same time – ideally alongside the related issue of how much to raise in taxes – rather than announcing large chunks in advance without seeming to factor in the impact on funding for other public services or how they will be paid for. That is not 'how responsible people budget'.

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<sup>64</sup> <https://mailchi.mp/criminalbar/fohprospectus-203485>.

## 5. Options for raising taxes

Stuart Adam and Tom Waters (IFS)

### Key findings

- **Raising tax revenue by 1% of national income – enough to finance the promised boost to NHS spending – would put the tax burden in the UK at around the highest level seen in the post-war era.** Such an increase, which would take tax receipts to around 35% of national income, would still leave the UK's tax burden ranked near the middle of OECD countries.
- **Increases in the rates of income tax, National Insurance contributions (NICs) or VAT could raise substantial sums.** Adding 1 percentage point (ppt) to all income tax rates, or all employee and self-employed NICs rates, or the main rate of VAT, would each raise a similar amount – between £5.4 billion and £6.2 billion. In all cases, the revenue would come disproportionately from higher-income households – though this is truer for income tax and NICs than it is for VAT.
- **Labour proposals for substantial rises to income tax rates on those with incomes over £80,000 would likely raise a lot less than these 1ppt increases – perhaps £2½ billion a year (though there is much uncertainty about that).** Increases in tax rates on those with high incomes need to be implemented in the knowledge that we are already dependent on a small number of very-high-income individuals for a large fraction of tax revenue (over a quarter of income tax revenue comes from 0.6% of adults) and that there is great uncertainty over how they might respond to tax rises.
- **There are many inequitable and inefficient parts of the tax system which need reform and which could, if so desired, raise more from the wealthy.** Council tax is paid at a lower fraction of property value on higher-value properties. Doubling it on the top four bands would raise over £8 billion a year. Capital gains tax should be charged at death and entrepreneurs' relief abolished. The current treatment of pension pots that are bequeathed is indefensibly generous.
- **NICs could be charged on the earnings of those over state pension age,** raising perhaps £1 billion a year (though with big potential impacts on the work decisions of those near retirement age). There is also a case for levying a low rate of NICs on private pensions in payment, to reflect the fact that NICs were never paid in respect of employer contributions.
- **Corporation tax increases could bring in substantial revenue, but are not a free lunch.** Cancelling the planned cut from 19% to 17% due in 2020–21 would raise around £5 billion in the short run, while the increases proposed in Labour's 2017 manifesto could raise a further £14 billion a year in the short run – though less in the longer term. Like all taxes, corporation tax rises are always borne ultimately by households, through lower wages for workers, higher prices for consumers or lower returns for shareholders.

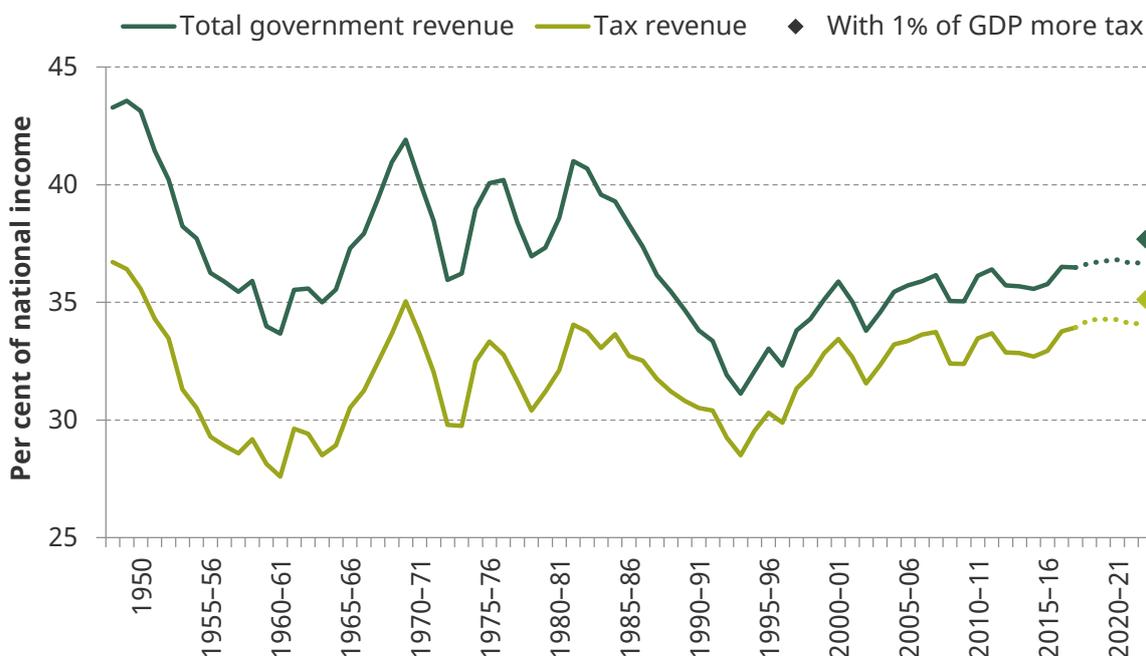
## 5.1 Introduction

Government borrowing in 2018–19 is forecast to be 1.8% of national income (£37 billion). This is considerably below the 9.9% seen in 2009–10, but still above the Chancellor’s fiscal objective of eliminating the budget deficit by the middle of the next decade – a target the Office for Budget Responsibility (OBR) describes as ‘challenging’. Against this backdrop, the government has promised an additional £20 billion of funding for the NHS – equivalent to about 1% of national income. The government will have to finance this additional funding by some combination of tax rises, higher borrowing and spending cuts elsewhere.

Given the Chancellor’s fiscal rules (discussed in Chapter 3) and the pressures on public spending (discussed in Chapter 4), one might expect him to be considering tax increases, possibly substantial ones. Of course the political circumstances, not least the lack of a working majority in parliament, are not propitious for any significant tax increases in the short run at least. Nevertheless, building pressures on public spending suggest that some such rises are likely to be necessary at some point.

This chapter considers where the Chancellor might look if he wanted to increase tax receipts by around 1% of national income (enough to pay for the promised increase in NHS spending). Using tax rises alone would make for a big increase in historical terms. The last fiscal events announcing tax rises of a similar magnitude were the two Budgets of 1993 – and, at that time, we were starting from a position where government revenues were at their lowest share of national income since the Second World War, whereas they are now around a 30-year high.

**Figure 5.1. Government revenue, 1948 to 2022–23**

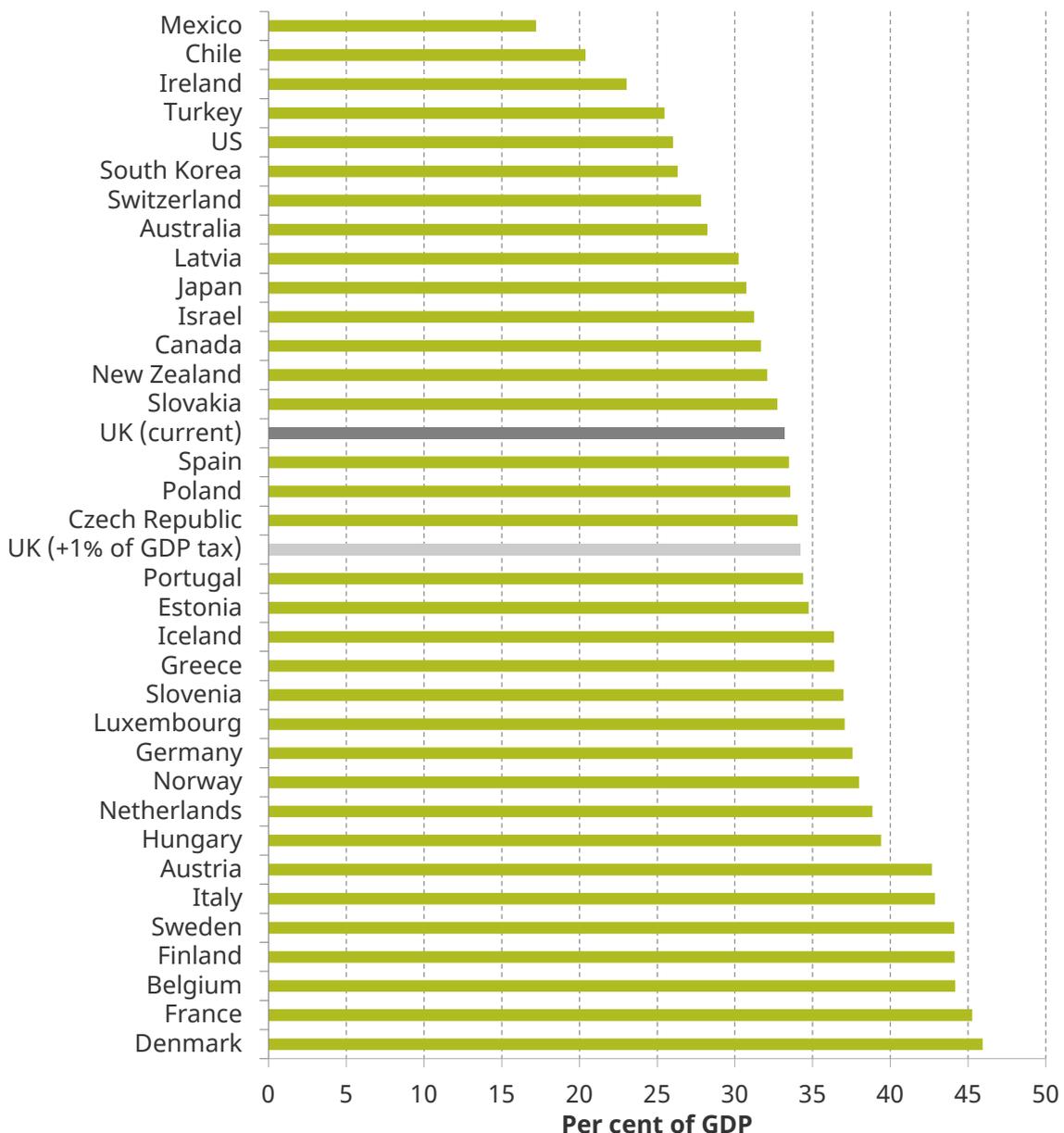


Note: Dotted lines represent forecasts.

Source: Office for Budget Responsibility, ‘Public finances databank’, <http://obr.uk/download/public-finances-databank/>.

Figure 5.1 puts a tax rise of this size into historical context, by showing tax revenue and total government revenue (including non-tax revenue such as the surplus from public corporations) as a share of national income. A £20 billion rise in taxes would leave the total tax burden as a share of national income at around the highest levels seen in the post-war era. It would also put total government revenue at its highest level as a share of national income since the mid 1980s, but still below the levels seen for much of the 20 years before that. This is because, during that period, there were many more public corporations, which increased the gap between taxes and total receipts.

**Figure 5.2. Tax as a share of national income across OECD countries**



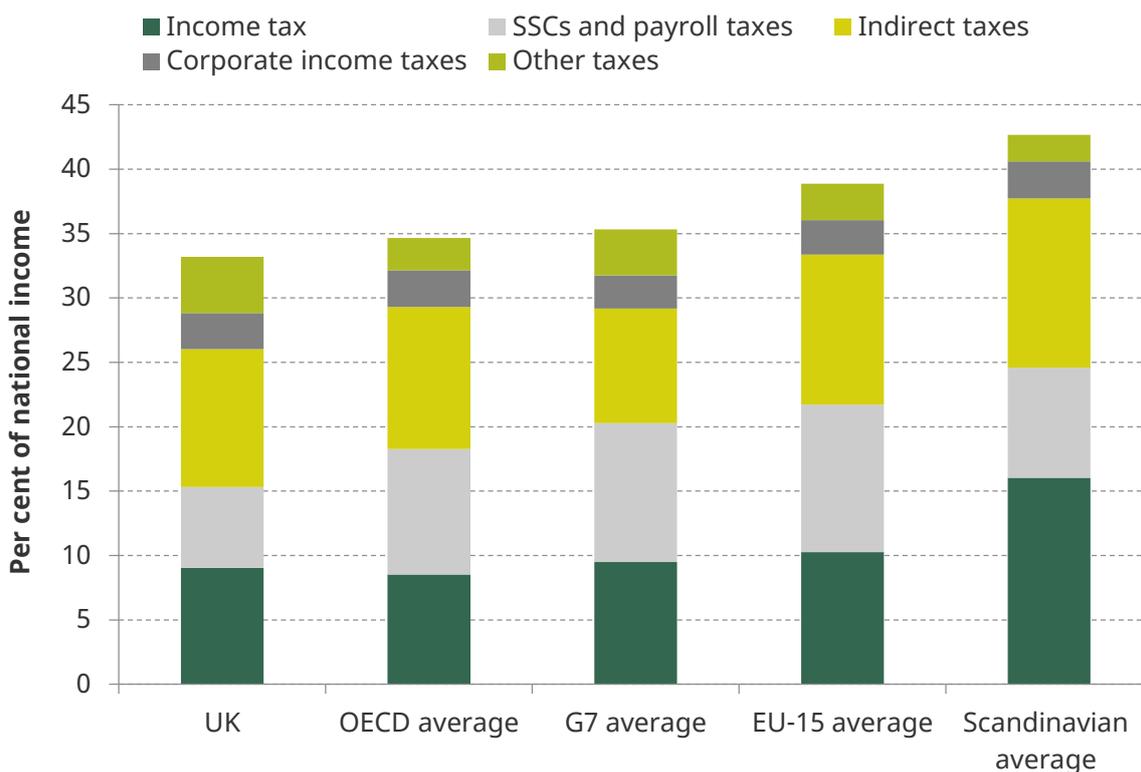
Note: Figures relate to 2016 except for Australia, Greece and Japan, which relate to 2015. Includes taxes levied at all levels of government.

Source: Authors' calculations using OECD Revenue Statistics (<https://stats.oecd.org/index.aspx?DataSetCode=REV>).

Although a £20 billion tax rise would put the tax burden at a high level by historical standards, it would not take it to a high level by international standards. Figure 5.2 shows tax as a share of national income across the OECD. Compared with many other OECD countries, the UK is relatively lightly taxed. Three G7 members (Germany, Italy and France) have a higher tax burden, by a margin of 4–12 percentage points (ppts). As the figure shows, a £20 billion tax increase would do little to change the relative position of the UK, which would still be around the middle of OECD countries. But it would increase the UK tax burden further above countries such as Ireland, Japan and the US.

That many other OECD countries get considerably more tax revenue than the UK raises the question of what type of taxes they get it from. Figure 5.3 shows the revenue different groups of countries get from various types of taxes, as a share of their national income. The main difference is that the UK gets considerably less revenue from social security (National Insurance) contributions (SSCs), especially employer contributions, than other advanced economies; in fact, this difference accounts for almost the entirety of the gap in the tax burden between the UK and the EU-15 average. However, this should be

**Figure 5.3. Tax revenue by source, as a share of national income: international averages**



Note: Figures relate to 2016 data except for Australia, Greece and Japan, which relate to 2015 data. Country group averages are unweighted. The 'EU-15' refers to Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden and the UK. 'Scandinavia' refers to Denmark, Norway and Sweden. 'Income tax' also includes capital gains tax. 'SSCs' stands for social security contributions.

Source: IFS calculations using OECD, *Global Revenue Statistics Database*, 2016, <http://www.oecd.org/tax/tax-policy/global-revenue-statistics-database.htm>. Thanks to Maddalena Conte, Helen Miller and Thomas Pope for these calculations.

interpreted with some caution: to an extent, it reflects broader differences in the way that pensions are provided, with SSCs in many countries more directly related to pension provision than they are in the UK and playing a role more like private pension contributions do here.

Could the UK government generate revenue in a way more similar to Scandinavian countries, a relatively high-tax group? As seen in the figure, the major difference in source of tax revenue between the UK and Scandinavia is income tax – the UK government gets 9.1% of national income in income tax, compared with an average of 16.0% in Denmark, Norway and Sweden. Thus, if the UK increased income tax by 1% of national income (approximately £20 billion), it would still be a long way below the levels seen in Scandinavia.

In the remainder of this chapter, we examine in turn a range of tax-raising options available to the Chancellor.<sup>1</sup> Section 5.2 looks at the most obvious options: broad-based changes to the biggest taxes directly affecting the bulk of the population. Section 5.3 focuses on options that target tax rises more on the well-off, while Section 5.4 highlights options that target the older population, who have been suggested as a suitable target for tax rises of this kind since they would be the primary beneficiaries of additional NHS spending. Moreover, compared with non-pensioners, they have been relatively favoured by tax and benefit reforms since the financial crisis and have enjoyed larger increases in living standards.<sup>2</sup> Section 5.5 looks at increasing taxes on business profits and company finance, while Section 5.6 considers the scope for raising revenue by clamping down on tax evasion and avoidance. Section 5.7 concludes.

## 5.2 Broad-based tax rises

Around 60% of government receipts come from income tax, National Insurance contributions (NICs) and value added tax (VAT), which contribute 24%, 18% and 17% respectively. These taxes are ‘broad based’ in the sense that a large proportion of UK households pay them. A relatively straightforward way for the government to raise a substantial amount of revenue would be to increase the rates of some or all of these taxes. We also discuss the revenue that could be gained – or rather, not lost – if the government ended its recent practice of cancelling the inflation uprating of fuel duties (which contribute 4% of revenue).

### Income tax, NICs and VAT rates

HM Revenue and Customs (HMRC) estimates that increasing all income tax rates by 1 percentage point (ppt) would raise around £6.0 billion per year: £4.6 billion from the rise in the basic rate, £1.2 billion from the higher rate and £0.2 billion from the additional rate.<sup>3</sup>

<sup>1</sup> Some sections of this chapter draw heavily on S. Adam and B. Roantree, ‘Options for increasing tax’, in C. Emmerson, P. Johnson and R. Joyce (eds), *The IFS Green Budget: February 2015*, <https://www.ifs.org.uk/green-budget/2015>.

<sup>2</sup> See A. Hood and T. Waters, ‘The impact of tax and benefit reforms on household incomes’, IFS Election Briefing Note BN196, 2017, <https://www.ifs.org.uk/publications/9164> and chapter 2 of J. Cribb, A. Norris Keiller and T. Waters, *Living Standards, Poverty and Inequality in the UK: 2018*, IFS Report R145, 2018, <https://www.ifs.org.uk/uploads/R145%20for%20web.pdf>.

<sup>3</sup> These revenue numbers from raising income tax include the improvement in the finances of central government that result from the reduction in the block grant to Scotland that would be triggered following a

The revenue from the additional rate – which is applied to incomes over £150,000 per year – is particularly uncertain, and is heavily dependent upon the extent to which affected taxpayers would respond (for example, by reducing earnings, converting income to capital gains, or increasing tax avoidance or evasion). To a lesser extent, the same is true of the revenue from the higher rate.

Raising all NICs rates for employees and the self-employed by 1ppt would raise around £5.4 billion, with £4.3 billion coming from the rise in the main rate and £1.1 billion from the additional rate (a lower rate paid on earnings above the upper earnings limit / upper profits limit). Increasing the employer NICs rate by 1ppt would, if employers passed the increase on to employees in the form of lower earnings, raise an additional £2.8 billion, making the total revenue from NICs increases £8.2 billion.<sup>4</sup>

Increasing the main rate of VAT by 1ppt would generate around £6.2 billion, bringing the total from income tax, employee and employer NICs, and VAT increases together to around £20 billion – enough to pay for the additional spending pledged to the NHS.

Figure 5.4 shows the distributional consequences of increasing the rates of income tax, NICs and VAT. Note that most income tax rates and thresholds in Scotland are devolved to the Scottish government, and so the income tax bars show the effect of changing the rates outside Scotland – though the loss to Scotland from the associated change in its grant funding is shown in the ‘all’ bar. Box 5.1 discusses these issues in more detail.

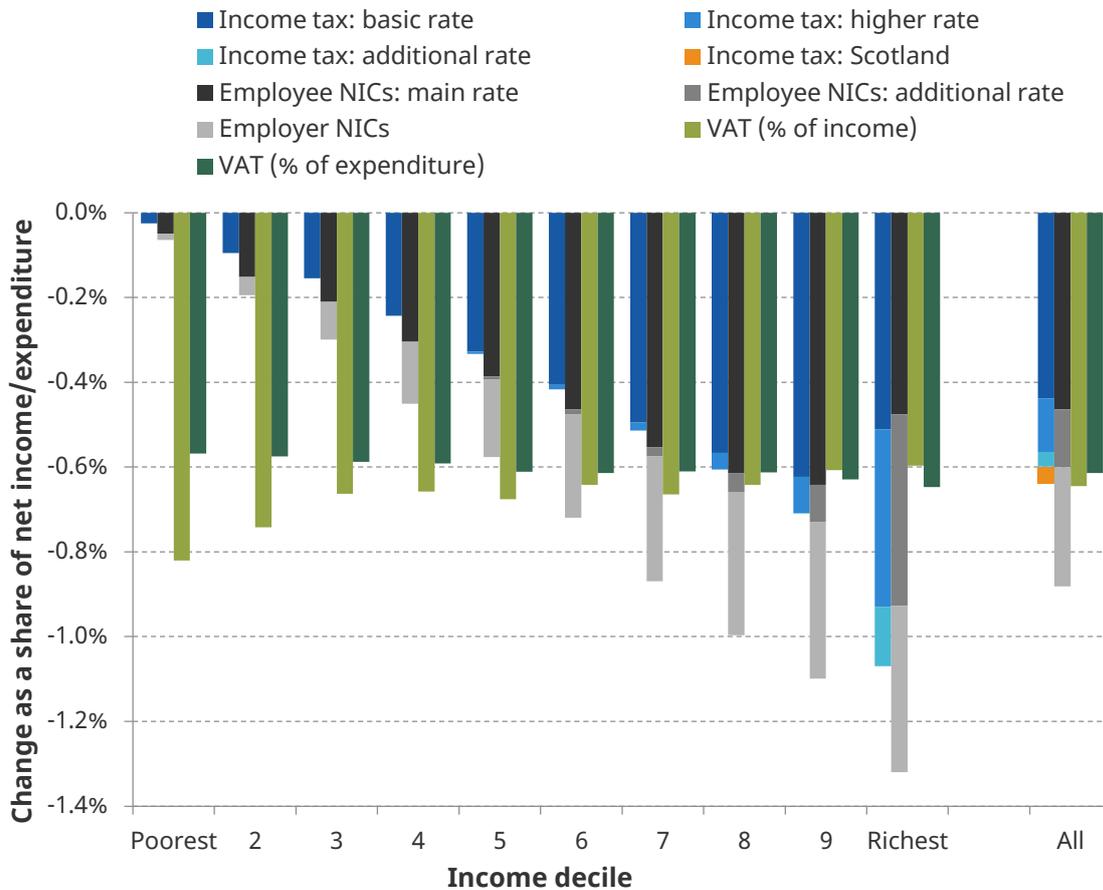
Increases in income tax and NICs are progressive to similar extents, with higher-income households losing the most both in absolute terms and as a proportion of their income. Even increases in just the basic rate of income tax and main rate of NICs are quite progressive, though not surprisingly increases in the higher rate and additional rates are more progressive still and are paid overwhelmingly by the highest-income fifth of households.

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rise in income tax rates in the rest of the UK. This is discussed in Box 5.1. Except where otherwise stated, all revenue estimates in this subsection are derived from HMRC Statistics, ‘Direct effects of illustrative tax changes’, <https://www.gov.uk/government/statistics/direct-effects-of-illustrative-tax-changes>. Unless otherwise stated, all revenue estimates in this chapter are expressed in 2018-19 prices using the OBR’s forecast for CPI inflation.

<sup>4</sup> The revenue from raising employer NICs is estimated using the IFS tax and benefit model, TAXBEN, and is significantly less than the revenue from increasing employee NICs. This is because the extra employer NICs being paid must reduce some other tax base, coming out of firms’ profits or workers’ wages, for example. HMRC (op. cit.) acknowledges this, giving a much higher figure of £6.1 billion but noting that there would be ‘substantial additional negative Exchequer effects ... not captured here’; our estimate essentially incorporates those effects, assuming that employer NICs are shifted to workers via lower salaries. This reduction in gross earnings would lead to an offsetting reduction in income tax and employee NICs liabilities and an increase in some people’s entitlements to means-tested benefits or tax credits, reducing the net yield from the NICs rise. In the short run, employers would bear the cost of the rise in employer NICs (reducing the tax raised from their profits instead of the tax raised from workers’ wages), but basic economic theory suggests that, in the long run, earnings should adjust so that the burden of a tax on earnings is felt by the same people regardless of whether it is formally levied on the employer or the employee. In practice, the burden of both employer and employee NICs (and indeed income tax) is probably shared, but since we assume that income tax and employee NICs are ultimately incident on the worker, then it makes sense to assume the same about employer NICs too.

**Figure 5.4. Distributional impact of a 1 percentage point increase in the rates of income tax, NICs and VAT**



Note: Income decile groups are derived by dividing all households into 10 equal-sized groups according to income adjusted for household size using the modified OECD equivalence scale. 'Employee NICs' includes self-employed NICs. Income excludes imputed rental income from owner-occupied housing; expenditure excludes (actual and imputed) housing consumption.

Source: Family Resources Survey 2016–17, Living Costs and Food Survey 2014 and authors' calculations using the IFS tax and benefit microsimulation model, TAXBEN (<https://www.ifs.org.uk/publications/12858>).

### Box 5.1. Income tax, NHS spending and Scotland

The setting of income tax rates and thresholds in Scotland is now mostly devolved to the Scottish government, though the UK government still determines the tax rates on savings and dividend income and the tax base (i.e. what income is taxable, including the size of the tax-free personal allowance).

Since gaining this power, the Scottish government has made several changes to the income tax structure that applies in Scotland. The tax schedules that now prevail in Scotland and the rest of the UK are shown in Table 5.1. The most obvious difference between the two schedules is that, while the rest of the UK has a broad basic-rate band, Scotland has three bands covering the income range from £11,850 to £43,430. However, since the rates that apply are very similar – 19%, 20% and 21% – the actual difference in tax liabilities is small. Very similar distributional consequences could be achieved with a

**Table 5.1. Marginal income tax rates on non-savings, non-dividend income, 2018–19**

Income range	Scotland	Rest of UK
£0–£11,850	0%	0%
£11,850–£13,850	19%	20%
£13,850–£24,000	20%	20%
£24,000–£43,430	21%	20%
£43,430–£46,350	41%	20%
£46,350–£100,000	41%	40%
£100,000–£123,700	61.5%	60%
£123,700–£150,000	41%	40%
£150,000+	46%	45%

single 21% basic rate and a higher personal allowance, without the added complexity of two more bands, though since the personal allowance in Scotland is not under the control of the Scottish government, that particular alternative is not available to it.<sup>a</sup>

When the UK government raises an income tax rate (or reduces a threshold), the change does not apply in Scotland (except to savings and dividend income). Instead, it triggers a reduction in the block grant from the UK government to the Scottish government. The Scottish government would have to pass this funding cut on to Scottish households in some form – either higher taxes or lower spending. Since we do not know what decision it would make, and therefore the distributional consequences, Figure 5.4 shows this loss to Scottish households only in the ‘All’ bar.

Similarly, if the UK government increases spending on an area that is devolved to Scotland – such as health – the block grant to Scotland increases. So if the UK government raised income tax rates and spent all the revenue on the NHS, then neither change would directly affect Scotland and the two effects on the block grant would roughly offset each other, leaving Scottish funding little affected.<sup>b</sup> But if the UK government increased a UK-wide tax (such as NICs or VAT) for devolved spending (such as health), or conversely if it increased income tax for UK-wide spending (such as defence), the effects on block grant would not offset each other.

<sup>a</sup> Scotland could introduce a nil-rate band on top of the personal allowance, which would have a similar effect on the tax schedule but might be more confusing and more complex to administer. For further discussion of the Scottish income tax reforms, see T. Pope and T. Waters, ‘Scottish income tax diverges further from rest of UK to raise more from high earners’, IFS Observation, <https://www.ifs.org.uk/publications/12903>.

<sup>b</sup> The offset would not be exact; for a discussion of the details of how the block grant is determined, see D. Bell, D. Eiser and D. Phillips, ‘Scotland’s fiscal framework : assessing the agreement’, IFS Working Paper WP16/05, 2016, <https://www.ifs.org.uk/publications/8212>.

It is not surprising that income tax and NICs rises have similar distributional impacts given that they are levied in a similar way on earnings, which make up the majority of income for taxpaying households. However, the taxes do differ in several ways, which make a rise in the basic rate of income tax a slightly more progressive policy than a rise in the main rate of NICs. First, NICs are paid on earnings above £162 per week (in 2018–19), whereas income tax is paid on annual income above £11,850, equivalent to £228 per week. That means that some low earners are affected by a NICs rate change but not by an income tax one. Second, whereas NICs are applied only to earned income, income tax is applied to other forms of income – including pension income and some income from investments. Taxes on investment income primarily affect those towards the top of the income distribution. Third, those above state pension age do not pay employee or self-employed NICs, but they do pay income tax. Most importantly, this means that the losses from an employee NICs rise, unlike an income tax rise, would be restricted to those below state pension age. But, in addition, the benefits of this NICs exemption are more concentrated at the top of the income distribution than are actual NICs payments.

In the long run, we would expect that the impacts of higher employer NICs will be split between workers, business owners and customers in a similar way to increases in employee NICs (as we assume in Figure 5.4). This suggests that the eventual distributional impacts of the two tax rises would be similar; the main difference is that the earnings of workers above the state pension age are exempt from employee NICs but not employer NICs, meaning they are only affected by rises in the latter. However, in the short run, their impacts are different: employee NICs rises are initially borne by employees, while employer NICs rises are initially borne by business owners in the form of lower profits.

The impact of a 1ppt increase in the main rate of VAT, when measured as a share of household income, looks somewhat regressive: while higher-income households would pay more in absolute terms, the poorest 10% of households would pay an additional 0.8% of their net income in VAT, compared with an average of 0.6% for the population as a whole. At any given point in time, many low-income households appear to spend a lot (and therefore pay a lot of VAT) relative to their current income. However, this picture is somewhat misleading. In part, it reflects measurement error in survey incomes. More fundamentally, households cannot spend more than their income indefinitely. Over a lifetime, income and expenditure must be equal (except for bequests given and received and the possibility of dying in debt). Many households spending a lot relative to their income at any given point in time are experiencing only temporarily low incomes and are either borrowing or running down their savings in order to maintain their expenditure at a level more befitting their lifetime resources.<sup>5</sup> So those paying a lot of VAT because they are spending a lot relative to their income now will generally pay little VAT relative to their income at other times.

We can get a clearer picture of the distributional impact of VAT over a lifetime – abstracting from how much people are borrowing or saving at any point in time – by looking at VAT paid as a share of expenditure, rather than income. As Figure 5.4 shows, on that measure, VAT looks slightly progressive, rising from 0.57% of expenditure for the lowest income decile to 0.65% of expenditure for the highest income decile (and the pattern is similar if we divide people into expenditure deciles rather than income deciles).

<sup>5</sup> Such temporarily low incomes can arise for a variety of reasons: people who are temporarily unemployed, people with volatile income from self-employment, students, those taking time out of the labour market to raise children, retirees drawing on past savings, and so on.

That arises because the items that are zero- or reduced-rated for VAT (primarily food), and therefore not affected by a rise in the main rate, take up a larger share of the budgets of poorer households. Over a lifetime, we would expect richer households to devote a larger share of their resources to goods subject to VAT at the main rate and therefore to lose more from a rise in the rate than poorer households: that is what the dark green bars in Figure 5.4 reflect.<sup>6</sup>

Nevertheless, while a rise in the main rate of VAT is best thought of as being slightly progressive, it is – at least with respect to future income – nowhere near as progressive as an income tax or NICs rise, because there is no VAT-free allowance on the first tranche of household expenditure analogous to the allowances in income tax and NICs. In one respect, however, a VAT rise is actually more progressive: it effectively imposes a tax on existing wealth as well as future income, since both will be subject to VAT when they come to be spent.

The discussion of distributional effects above focused on the mechanical losses to households resulting from tax increases, on the assumption that they do not change their behaviour in response to the tax. Under this assumption, any loss to a household is matched by an equal gain to the exchequer. However, taxes do affect behaviour: for example, they change people's decisions about how much to work, how much and where to save, and what to buy. This creates a 'deadweight' loss: if a person changes their behaviour to reduce their tax liability, they suffer some loss over and above the tax they pay (since they would prefer to act as they would if the tax were not there) without any offsetting gain to the government.

All of these reforms would create deadweight losses by weakening work incentives, reducing the reward for working in terms of the amount of goods and services that additional earnings can buy after tax. Of these three taxes, increases to NICs would typically be the most damaging to work incentives (per pound raised), then increases in income tax, with increases in VAT the least damaging. Increasing NICs weakens work incentives most because all of the revenue comes from taxing future earnings, whereas part of the revenue from increasing VAT or (to a lesser extent) income tax derives from wealth that has already been accumulated and will be payable regardless of future work behaviour. This is because income tax (and not NICs) is levied on income from existing wealth or entitlements (pension, savings and dividend income), while VAT will be levied when those wealth and entitlements come to be spent.<sup>7</sup>

Each of the three tax rises would also exacerbate other existing tax-induced economic distortions, in different ways:

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<sup>6</sup> For more analysis of VAT payments by income and expenditure and their relationship to lifetime resources, see S. Adam, D. Phillips and S. Smith (in consortium), *A Retrospective Evaluation of Elements of the EU VAT System*, European Commission, 2011, <http://www.ifs.org.uk/publications/5947>.

<sup>7</sup> Offsetting this reduction in the *reward* to work (the 'substitution effect') is an increase in the *need* to work (the 'income effect'): people may decide to work harder in order to make up for the income they have lost through the tax rise. Theoretically, therefore, these tax rises could either increase or reduce the amount people work. However, empirically, income effects tend to be small for many groups; they will often be offset (at least roughly) by income effects going in the opposite direction when the revenue is used to make someone better off; and, strictly speaking, the economic inefficiency (or 'deadweight loss') caused by a tax depends only on substitution effects, not on income effects.

- Increasing the marginal rate of income tax would discourage saving in taxed forms (such as investing in companies or property) and would increase the bias towards putting savings in relatively tax-favoured forms such as private pensions, ISAs and owner-occupied housing.
- Increasing NICs would not have these effects since NICs are not levied on savings income, but for the same reason it would increase the existing incentive to shift the form in which income is taken away from earnings and towards capital income (for example, through setting up a company and taking income as dividends rather than earnings).
- Increasing the main rate of VAT would increase the scale of the distortion towards buying zero- and reduced-rated goods and services instead of standard-rated ones.

### A hypothecated tax for the NHS?

Rather than simply increasing taxes and spending the additional revenue on the NHS, some have argued that the revenue from an entire tax – usually NICs – should be set aside, or ‘hypothecated’, for the NHS. This has obvious attractions. It means that the revenue earmarked for the NHS automatically rises as the tax base (in this case earnings) does. And people may be less unhappy about paying a tax if they think the money is going to a worthy cause.

But there is rarely a good reason that spending on a particular area should equal revenue from a particular tax. An ageing population means that the NHS’s share of government spending is steadily increasing. It does not follow that an increasing share of tax revenues should come from NICs on earnings, as opposed to (say) VAT on consumption, corporation tax on profits or excise duties on alcohol and tobacco. As we discuss in this chapter, there are pros and cons of different tax-raising options: they have different distributional effects and different effects on the economy. The appropriate composition of taxes and the appropriate composition of spending should each be decided on its own merits.

A looser form of hypothecation might not impose a binding constraint. For example, the government could ‘top up’ funding from general taxation if the hypothecated tax raises less than the desired spending and ‘skim off’ some of the tax revenue if it raises more than the desired spending. This form of hypothecation has no practical impact at all, because the amount raised from the tax has no bearing on the amount of NHS funding; if revenue from the tax goes down, funding from general taxation goes up to exactly offset it. It is at best meaningless and arguably misleading, leading voters to think their tax payments control government spending in a way that in reality they do not.

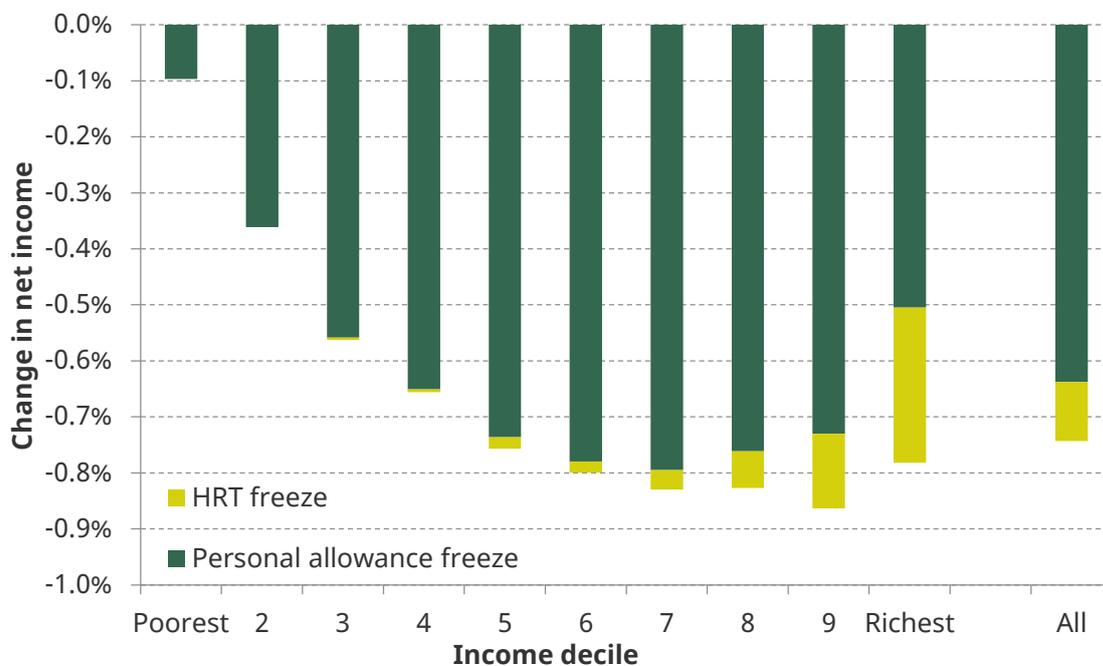
### The income tax personal allowance and higher-rate threshold

Rather than changing tax rates, the government could raise revenue by changing the thresholds at which different rates apply. By default, these thresholds are updated annually in line with CPI inflation. However, in recent years, the tax-free personal allowance (the point at which income starts to be taxed) has been increased substantially above inflation: from £6,475 in 2010–11 to £11,850 today, a 55% real-terms rise implying £24 billion of forgone revenue. Conversely, real cuts in the higher-rate threshold (HRT) –

the point at which higher-rate income tax starts to be paid – have led to it falling by 10% in real terms over the same period, and it now stands at £46,350.

The government could raise revenue by lowering these thresholds – for example, by freezing them in cash terms for the remainder of this parliament.<sup>8</sup> Under the OBR’s current inflation forecasts, that would amount to a 7.8% real-terms reduction by the end of the parliament. A real cut of this size would mean that most basic-rate taxpayers would lose £190 per year and most higher-rate taxpayers £550 per year. It would raise £7.6 billion a year in 2022–23: £5.9 billion from the personal allowance (leaving the HRT unchanged) and £1.7 billion from the HRT.<sup>9</sup> The policy would be fairly progressive overall, as shown in Figure 5.5, with middle- to high-income households losing the most from the change as a percentage of income. The effects on incentives to be in work and other distortions would be in the same direction as those of raising income tax rates.

**Figure 5.5. Distributional impact of freezing the personal allowance and HRT for the rest of the parliament**



Note: Assumes real reductions in thresholds equivalent (on current OBR forecasts of CPI inflation) to freezing them until 2022–23 inclusive, expressed in 2018–19 prices. Income decile groups are derived by dividing all households into 10 equal-sized groups according to income adjusted for household size using the modified OECD equivalence scale. Income excludes imputed rental income from owner-occupied housing.

Source: Family Resources Survey 2016–17 and authors’ calculations using the IFS tax and benefit microsimulation model, TAXBEN (<https://www.ifs.org.uk/publications/12858>).

<sup>8</sup> We assume that any changes to the income tax HRT would be replicated for the NICs upper earnings limit (UEL) and upper profits limit (UPL), which are currently aligned with it. This means that income tax increases would be partly offset by NICs reductions, since the income tax rate rises at the HRT while the NICs rate falls at the UEL and UPL.

<sup>9</sup> As discussed with reference to income tax rates, a real-terms reduction in the HRT would not apply in Scotland but would trigger a reduction in the block grant to Scotland, and these revenue figures include that consequence. The same is *not* true of the personal allowance, which is set for the whole of the UK by Westminster and so has no impact on the block grant. See Box 5.1.

Freezing the personal allowance and HRT until the end of the parliament would break the 2017 Conservative manifesto promise to raise them to £12,500 and £50,000 respectively by 2020. One way to raise revenue while keeping to the letter of that promise would be to meet the manifesto commitments by 2020, but then freeze the thresholds after that. Doing so would raise around £2.1 billion in 2022–23, compared with simple inflation uprating throughout. This is almost entirely due to the freeze in the personal allowance, as the HRT would, by default, be barely above £50,000 by 2022–23 anyway. Of course, voters might reasonably question whether real increases followed by bigger real reductions, leaving thresholds lower than they would have been with no reforms announced at all, were in keeping with what the manifesto pledge had led them to expect.

Nominal freezes – or indeed nominal targets – are generally a bad way of setting tax thresholds, as differences between actual and forecast inflation can make the size of the takeaway bigger or smaller than the government originally intended.<sup>10</sup> Instead, the government could aim to deliver a given real-terms cut, whatever happens to inflation.

### VAT base broadening and Brexit

As well as changing tax rates and thresholds, the government could raise revenue by broadening the tax base: that is, increasing the range of things that are subject to tax.

VAT is a prime candidate for base-broadening. The UK applies zero VAT to a wider range of goods and services than almost any other developed country. By far the biggest area of zero-rating is (most) food, on which the government forgoes about £18 billion a year; other big-ticket items include house-building, passenger transport, prescription drugs, water bills, children's clothes, and books, newspapers and magazines. In total, relative to a world in which VAT were charged at a standard 20%, the government loses over £48 billion a year from VAT zero-rating, and a further £4.8 billion from the reduced (5%) rate it applies to domestic fuel.<sup>11</sup>

These items account for a disproportionate share of poorer households' budgets, so removing zero and reduced rates would, on its own, be regressive. But better-off households spend more on the items, and therefore save more in VAT, in absolute (cash) terms, so even a flat-rate redistribution of the revenue raised from taxing them would more than compensate poorer households on average. For example, if the government put VAT on children's clothes, it could use part of the revenue to increase child benefit so that the poorer half of households were no worse off on average, and still have revenue left over from the richer half of households. More broadly, the IFS-led Mirrlees Review of the tax system<sup>12</sup> showed that it is possible to remove most zero and reduced rates of VAT while maintaining the overall extent of redistribution (though some poorer households would lose while others would gain) and protecting work incentives. Reforms such as this could simplify the tax system and reduce distortions to households' spending decisions

<sup>10</sup> This point is discussed further in A. Hood and T. Waters, 'Higher inflation means more pain for households from benefit freeze, less gain from £12,500 personal allowance', IFS Observation, 2017, <https://www.ifs.org.uk/publications/9993>.

<sup>11</sup> Source: HMRC Statistics, 'Principal tax reliefs', <https://www.gov.uk/government/statistics/main-tax-expenditures-and-structural-reliefs>, uprated to 2018–19 prices using OBR forecast of CPI inflation.

<sup>12</sup> 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 the Institute for Fiscal Studies, Oxford, 2011, <http://www.ifs.org.uk/publications/5353>.

(for example, towards buying children more expensive clothes and less expensive toys) as well as raising revenue.

Among existing zero and reduced rates, the reduced rate of VAT applied to domestic fuel should be a priority for reform: given the government's climate change objectives, it seems particularly perverse to tax households' use of gas and electricity less heavily than we tax (most) other goods and services.

VAT exemptions differ from zero rates in that, while in both cases there is no VAT charged directly on the goods and services sold, producers of exempt items cannot reclaim any VAT they pay on inputs they buy. This makes exemptions particularly economically damaging: the inability to deduct tax paid on inputs distorts production patterns in a whole host of ways as firms try to minimise their purchases of taxed inputs, from encouraging vertical integration to distorting competition between exempt and non-exempt bodies and between exempt bodies in different countries.

Unlike zero rates, VAT exemptions are mostly mandated by EU rules. Depending on what (if any) post-Brexit deal is agreed, leaving the EU might therefore open up a new opportunity to remove exemptions, increasing both tax revenue and economic efficiency.

The estimated cost of the main exemptions is shown in Table 5.2. The biggest and most damaging is the exemption of financial services (including insurance), which the government estimates costs it around £11 billion a year. In fact, while financial services are mostly exempt, those exported to non-EU customers are (broadly speaking) zero-rated. This means the government faces a potential revenue loss from Brexit if it starts treating EU countries like it currently treats non-EU countries: financial services firms

**Table 5.2. Estimated costs of main VAT exemptions**

	Estimated cost (£bn)
Rent on domestic dwellings	6.0
Education	4.0
Health services	3.8
Burial and cremation	0.3
Finance and insurance	11.2
Betting and gaming and lottery duties	1.5
Small traders below the turnover limit for VAT registration	2.1
<b>Total</b>	<b>28.9</b>

Note: These figures are particularly tentative and subject to a wide margin of error. Estimates do not account for behavioural response. Figures updated from 2017–18 to 2018–19 prices using OBR forecast of CPI inflation.

Source: HMRC Statistics, 'Principal tax reliefs', <https://www.gov.uk/government/statistics/main-tax-expenditures-and-structural-reliefs>.

would gain the right to reclaim VAT paid on inputs to financial services exported to EU countries.<sup>13</sup>

Exemption is so damaging that there is an argument that a move to zero-rating would be an improvement, notwithstanding the revenue loss. But the potential revenue loss could provide a stimulus for the government to rethink the long-term VAT treatment of financial services – domestic as well as international – more fundamentally. Historically, financial services were exempt because of the practical difficulty of levying VAT when the charge for services is implicit (paying lower interest rates to savers than are charged to borrowers) rather than a sale with an explicit price. But several plausible options have now been developed for achieving the same effect as levying VAT, albeit with a need for further development of the detail.<sup>14</sup>

Other significant exemptions include those for property rental businesses and for certain public services and parts of the public sector. All of these create similar inefficiencies in production, such as a bias towards providing inputs in-house rather than buying them from VAT-registered suppliers, and would be better removed – even if part of the revenue were recycled to those losing out rather than spent elsewhere. Note that part of the revenue would come from the public sector, including the NHS, so to that extent would not increase the overall amount of revenue available to spend on public services – though it might still improve the efficiency of provision.

Businesses with turnover below the VAT registration threshold are essentially ignored by the VAT system, so are also in effect exempt: they neither charge VAT on their sales nor recover it on their input purchases, unless they register voluntarily. But there is a stronger practical rationale for exemption in this case. The UK has the highest VAT threshold in the EU or the OECD, and could raise revenue from reducing it, but the trade-off between increasing revenues and production efficiency on the one hand and increasing administrative burdens for businesses and the government on the other is a delicate one.

There are also subtler ways to reform the VAT threshold. The government has recently completed a consultation on possible options, including on a proposal from the European Commission which, if adopted unanimously by member states, would (among other changes) require a lower VAT threshold than the UK's current one.<sup>15</sup> Again, whether this would affect the UK after Brexit depends on the nature of any post-Brexit deal.

## Fuel duties

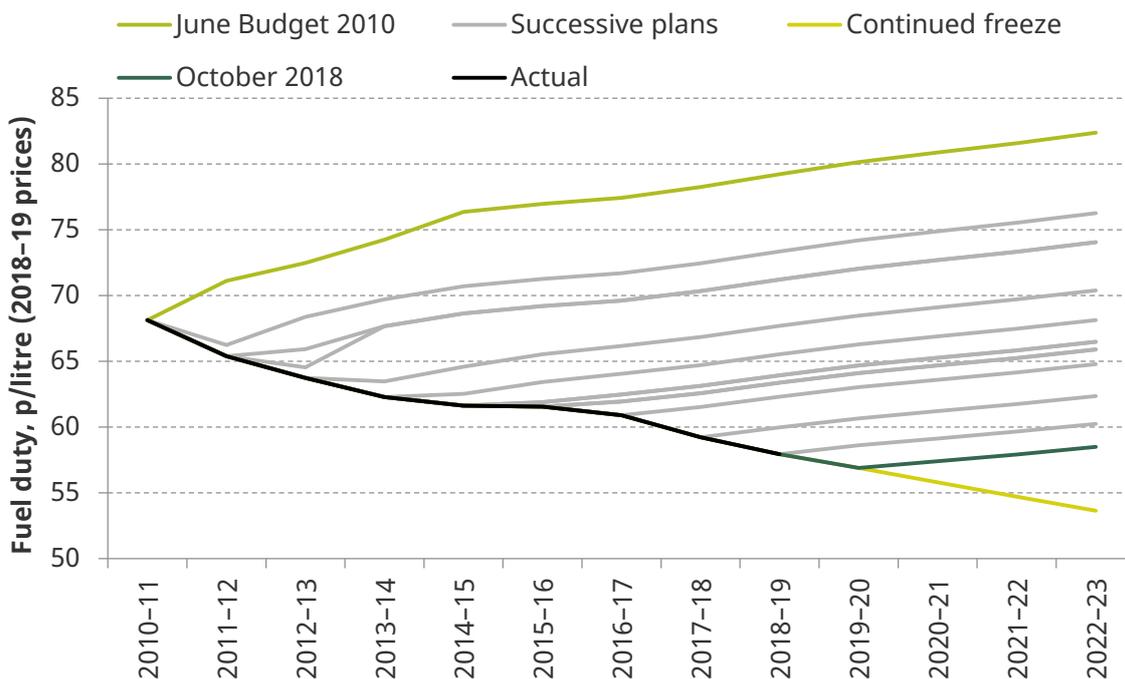
Thus far, we have looked at possible tax rises. We now turn to a policy that would not be a tax *rise*, at least relative to what is in the official public finance plans, but simply avoiding a tax cut: uprating fuel duties in line with inflation.

<sup>13</sup> It is not clear how the government will deal with this threat: the guidance it has published on preparations for a 'no-deal' Brexit (<https://www.gov.uk/government/publications/vat-for-businesses-if-theres-no-brexit-deal>) simply reads 'input VAT deduction rules for financial services supplied to the EU may be changed. We will update businesses with more information in due course'.

<sup>14</sup> See chapter 8 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 the Institute for Fiscal Studies, Oxford, 2011, <http://www.ifs.org.uk/publications/5353>.

<sup>15</sup> <https://www.gov.uk/government/consultations/vat-registration-threshold-call-for-evidence>.

**Figure 5.6. Fuel duty plans**



Note: Duties shown here have been put into 2018-19 prices using the Consumer Prices Index (CPI). RPI inflation is generally higher than CPI inflation, which is why the ‘successive plans’ lines slope up – generally, the stated ‘plan’ is to index fuel duty to the RPI. ‘October 2018’ includes the plan, announced by the Prime Minister at the Conservative party conference, to freeze fuel duties in April 2019.

Source: Authors’ calculations using OBR, *Economic and Fiscal Outlook: March 2018*, <http://obr.uk/efo/economic-fiscal-outlook-march-2018/>.

The government’s public finance forecasts assume that fuel duties increase each April in line with the Retail Prices Index (RPI) measure of inflation. However, Figure 5.6 – which shows the real value of fuel duties (relative to CPI inflation) under successive government plans – makes clear that is not what has happened over recent years. In April 2011, the coalition government cancelled the series of real-terms increases that the previous Labour government had pencilled in and instead cut the rate by a penny per litre, and it has been frozen in nominal terms ever since – meaning that fuel duties have fallen by 15% in real terms since 2010-11, and by 27% relative to the plans that the coalition inherited. Had the government kept to those plans, receipts would have been an estimated £9 billion higher in 2018-19.<sup>16</sup>

But this freeze was not laid out in advance. Instead, the government has repeatedly delayed or cancelled imminent fuel duty rises but maintained the assumption that, from the following year, duties would be uprated in line with RPI inflation – only to repeat the same exercise a year later. The steady fall in real fuel duty rates shown in Figure 5.6 has never been the government’s officially stated plan (with successive plans show by the grey lines in the figure).

<sup>16</sup> Source: Authors’ calculations using paragraph 5.84 of OBR, *Fiscal Risks Report: July 2017*, <http://obr.uk/frr/fiscal-risk-report-july-2017/> and HM Government, *Autumn Budget 2017: Policy Costings*, [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/661428/Autumn\\_Budget\\_Policy\\_costings\\_document\\_web.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/661428/Autumn_Budget_Policy_costings_document_web.pdf).

This pattern has repeated itself very recently, with the Prime Minister announcing another year of freezes at the Conservative party conference. This will make 2019 the ninth successive year that fuel duties have been frozen or cut. Given this recent history, it would not be unreasonable to think that further freezes are likely – indeed, last year, the OBR’s Fiscal Risks Report put the probability of no RPI uprating until at least 2021 at over 90%.<sup>17</sup> Freezing fuel duties until the end of the parliament would leave them 11% lower than if they were uprated with RPI (as currently assumed in the public finance forecasts), and would translate to an additional £3.3 billion loss in annual revenue by 2022–23: £0.8 billion from the announced freeze in 2019 and £2.5 billion from freezes in subsequent years.

Rather than continue the freeze or resume uprating with RPI, the government could instead switch the default uprating rule to use CPI rather than RPI inflation. This would be entirely sensible, since the CPI is a superior measure of inflation and is the measure used by almost all of the tax and benefit system other than duties. Since CPI inflation is generally lower than RPI inflation, this would raise £1.2 billion less than if duties were uprated with RPI, but £2.2 billion more than if they were frozen in cash terms.

Regardless of their level, taxes such as fuel duties that are expressed in cash terms (rather than as a percentage of income or spending, say) should be routinely adjusted to reflect inflation (or some other appropriate index). Whether fuel duties rise or fall in real terms should not depend on the rate of inflation. One reform the government could consider would be to uprate fuel duties monthly rather than annually. This would separate out routine inflation uprating from policy decisions, rightly taken in the Budget, as to whether real rates of duty should be increased or reduced. It would have little direct effect on revenue, but more gradual inflation uprating would more accurately keep the real rates of duty constant and would reduce the political pressures currently associated with sharp annual uprating. If it made more credible the ‘plan’ to index rates of duties then, over time, it could raise revenue and reduce uncertainty over future tax rates.

The duties paid on fuel bought by households are roughly proportional to household spending, on average. Among car owners, fuel duties take up a larger share of poorer households’ budgets, but since higher-income households are much more likely to own a car in the first place, the average budget share across all households is broadly constant over the income distribution. The distributional impact of fuel duties paid by firms is harder to estimate: the duties are likely to increase the prices of goods that require transport, so it depends what kinds of households disproportionately buy the goods and services that require more road fuel to supply.

### 5.3 Taxing better-off people

A relatively small group of very well-off taxpayers already pays a large share of tax, reflecting both the structure of the tax system and the unequal distribution of resources. Income tax payments are highly concentrated, with over a quarter of revenue coming from just 0.6% of the adult population (300,000 individuals with incomes over £150,000 per year) and almost half of revenue coming from 3% of adults in 2017–18.<sup>18</sup> IFS researchers

<sup>17</sup> OBR, *Fiscal Risks Report: July 2017*, <http://obr.uk/frr/fiscal-risk-report-july-2017/>.

<sup>18</sup> Source: Tables 2.4 and 2.5 of HMRC Statistics, <https://www.gov.uk/government/collections/income-tax-statistics-and-distributions>, with population aged 16 or over at 53.5 million in 2017 from table MYE2 of Office for National Statistics, *Population Estimates for UK, England and Wales, Scotland and Northern Ireland: Mid-2017*,

have previously looked at a wider range of taxes, which collectively account for over three-quarters of tax revenue, and shown that 20% of households contributed 54% of the revenue in 2013–14 and the top half contributed 85% of the revenue.<sup>19</sup>

In recent years, successive governments have implemented several policies that increase income tax for high-income individuals, including:

- withdrawing the tax-free personal allowance once income exceeds £100,000;
- increasing the rate of income tax for incomes over £150,000 from 40% to 45% (via 50% between 2010–11 and 2012–13);
- substantially reducing both the annual and lifetime limits on tax-relieved pension contributions.

Unlike most tax rates and thresholds, which are uprated with inflation each year, both the £100,000 and £150,000 thresholds are frozen in cash terms, meaning that in real terms these tax rises get bigger every year. For example, if the additional-rate threshold had been uprated in line with CPI inflation since it was introduced, it would now be £180,000 rather than £150,000, taking people with an income between £150,000 and £180,000 out of the additional rate and raising £1,500 less from each person with an income over £180,000.

The share of tax paid by the better-off could be increased further. We take no stance on whether that would be the right direction of travel. Reasonable people can disagree as to what distribution of the tax burden would be fair. In very broad-brush terms, there is a trade-off between redistribution and incentives: crudely, the more the tax (and benefit) system helps the poor and penalises the rich, the more it erodes the incentive for the poor to become rich. Increasing reliance on a very small number of taxpayers for revenue also leaves the public finances more vulnerable to changes in their behaviour.

In this section, we investigate a number of policies that would primarily raise revenue from those with high income and/or high wealth. Note that these two groups do not always coincide: people who have a high level of income may have little wealth, and vice versa.

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<https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/datasets/populationestimatesforukenglandandwalesscotlandandnorthernireland>.

<sup>19</sup> S. Adam, C. Emmerson and B. Roantree, 'Broad shoulders and tight belts: options for taxing the better-off', in C. Emmerson, P. Johnson and H. Miller (eds), *The IFS Green Budget: February 2013*, <http://www.ifs.org.uk/publications/6562>. We report the concentration of income tax at an individual level, rather than a household level, because that is the basis upon which official statistics on income tax are available. Conversely, the analysis looking at a wider set of taxes uses household survey data, where some taxes (for example, VAT) cannot easily be assigned to one individual within the household.

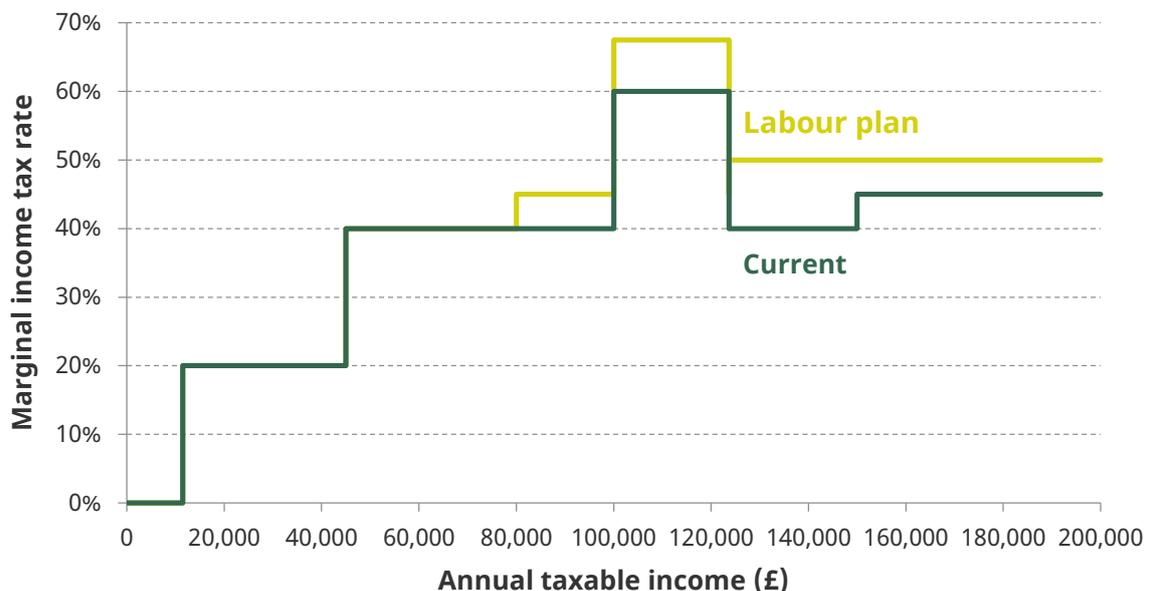
## Income tax policies from the 2017 Labour manifesto<sup>20</sup>

One set of proposals for raising income tax can be found in the 2017 Labour manifesto. Labour proposed increasing the headline rates of income tax for high-income individuals, currently 40% up to £150,000 and 45% above that, to 45% on incomes between £80,000 and £123,700 and 50% above that.<sup>21</sup> The impact on the income tax schedule is shown in Figure 5.7.

The 1.3 million people who would be affected by this change are in the highest-income 2% of adults. However, income varies substantially over one's lifetime. As well as year-to-year variation, income is also strongly related to age. For example, around 7.3% of men in their 40s and a similar number in their 50s have an annual income above £80,000. That means that considerably more than 2% of people would be affected by this reform at some point during their life, and a larger number still would at some point be part of a family where at least one member is affected.

In assessing the impact of this reform, it is worth keeping in mind that individuals at the very top of the income distribution are considerably more responsive to income tax changes than those further down. They might work less (for example, retire earlier), increase the extent to which they (legally) avoid or (illegally) evade taxes, or even

**Figure 5.7. Income tax schedule with and without proposed Labour reforms**



Source: Adapted from S. Adam, A. Hood, R. Joyce and D. Phillips, 'Labour's proposed income tax rises for high-income individuals', IFS Election Briefing Note BN209, 2017, <https://www.ifs.org.uk/uploads/publications/bns/BN209.pdf>.

<sup>20</sup> Analysis in this subsection is drawn from S. Adam, A. Hood, R. Joyce and D. Phillips, 'Labour's proposed income tax rises for high-income individuals', IFS Election Briefing Note BN209, 2017, <https://www.ifs.org.uk/uploads/publications/bns/BN209.pdf>.

<sup>21</sup> Note that, combined with the withdrawal of the personal allowance, this implies a marginal tax rate of 67.5% for those earning between £100,000 and £123,700. The Labour manifesto specified that this band would end at £123,000 – the point at which the income tax personal allowance was fully withdrawn in 2017–18. In 2018–19, that point is £123,700.

emigrate (or not move here in the first place). These kinds of potential responses vary in their likely frequency, but some are relatively straightforward for many individuals to do. For example, someone with a taxable income of £90,000 a year could, under Labour's proposals, get up-front income tax relief on any additional pension contributions at 45% (rather than 40% currently).

The extent to which such behavioural responses would occur is highly uncertain, but is of first-order importance for the amount that such a policy would raise. Were there no response at all, the policy would raise around £7 billion a year. Labour expected that behavioural response would reduce this to £4.5 billion. IFS research at the time of the election indicated that this was within the range of plausibility, but that a central estimate of responsiveness would suggest revenues of £2.5 billion. However, the bounds of plausibility are very wide: it is entirely possible that the policy would raise Labour's estimated £4.5 billion or more – or, on the other hand, that it could raise nothing at all or even reduce revenues.

Labour's manifesto also included an 'excessive pay levy' on salaries paid to those earning at least £330,000 (at a starting rate of 2.5%, rising to 5% for those paid over £500,000). Functionally, this would be similar to an additional band of employer NICs. Since this would affect even-higher-income individuals than the income tax policies, behavioural response could be even more significant. Labour's manifesto costed this at £1.3 billion, though IFS analysis put the central estimate close to zero.<sup>22</sup> However, this is highly uncertain, and much would depend on the exact definition of the tax base.

### **Increasing the NICs upper earnings limit to £100,000 per year**

In Section 5.2, we discussed increasing NICs rates above the upper earnings limit and upper profits limit (hereafter 'UEL'). Another way to increase NICs for higher earners would be to raise the UEL to £1,923 per week, equivalent to £100,000 per year. Since the employee NICs rate is 12% below the UEL and 2% above it, this is essentially a 10ppt increase in tax rates on earnings between £46,350 (the current UEL) and £100,000. Such a policy would cost someone earning, say, £75,000 a year nearly £3,000 a year and anyone earning £100,000 or more in excess of £5,000 a year. We estimate that this would raise around £7 billion, though this is subject to significant uncertainty about the likely extent of behavioural responses.

Increases beyond £100,000 would make behavioural response even more of a concern. Once income exceeds £100,000, the income tax personal allowance is reduced by 50p for every £1 of additional income; in combination with higher-rate tax, this in effect creates a marginal income tax rate of 60% (see Figure 5.7). Levying employee NICs at 12% on top of this would yield an eye-watering 72% effective marginal tax rate (or 75.4% if employer NICs are taken into account as well).

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<sup>22</sup> C. Emmerson, 'General election 2017, manifesto analysis: the outlook for the public finances', <https://www.ifs.org.uk/publications/9256>.

## Restricting tax relief on pension contributions to the basic rate

One frequently proposed way to increase the taxation of higher-rate taxpayers is to restrict income tax relief on pension contributions to the basic rate, rather than the saver's marginal rate as is currently the case.

The government says that in 2011–12 this would have reduced the cost of income tax relief on pension contributions by around one-third. In 2016–17, the total cost of relief on pension contributions was £30.7 billion, implying a yield of around £11 billion (in 2018–19 prices).<sup>23</sup> However, as the government notes, this ignores the substantial change in behaviour that this reform would be likely to engender. If people's main response were to reduce their pension contributions, this would tend to increase the yield in the short run by saving the cost of basic-rate relief as well as higher-rate relief, but in the long run this would be offset by reduced revenue from taxing pension income.

Giving everyone the same rate of relief, rather than giving more relief to higher-rate taxpayers, is superficially attractive but would be a step in the wrong direction. The error stems from looking at the tax treatment of pension contributions in isolation from the tax treatment of the pension income they finance. Pension contributions are excluded from taxable income precisely because pension income is taxed when it is received: in effect, the tax due on earnings paid into a pension is deferred until the money (plus any returns earned in the interim) is withdrawn from the fund. It is hard to see how it can be unfair for higher-rate taxpayers to receive 40% relief when basic-rate taxpayers receive 20% relief, yet at the same time *not* be unfair for higher-rate taxpayers to pay 40% tax on their pension income when basic-rate taxpayers pay only 20%. In more practical terms, restricting the tax relief would also be complicated as it would require the valuation of pension promises made by employers through defined benefit schemes.<sup>24</sup>

Proponents of the restriction point out that many of those receiving relief at the higher rate will only pay basic-rate tax in retirement. The arguments here are more complex. The current system certainly provides an additional incentive for higher-rate taxpayers to save in a pension if they expect to be basic-rate taxpayers in retirement. But, in effect, such individuals are simply smoothing their taxable income between high-income and low-income periods, undoing some of the 'unfairness' that an annually assessed progressive tax schedule creates by taking more tax from people whose incomes are volatile than from people whose incomes are stable. But even if receiving higher-rate relief and then paying basic-rate tax is seen as unfair, that does not diminish the case for accompanying any restriction of tax relief on contributions with a restriction of the tax on pension income. The tax system should treat pension contributions and pension income in a symmetric way.

<sup>23</sup> Source: Total cost of pension tax relief from table PEN6 of HMRC Statistics, <https://www.gov.uk/government/statistics/registered-pension-schemes-cost-of-tax-relief>; yield from restricting relief from Written Answer by David Gauke MP to a Parliamentary Question, 6 July 2011: 'If relief on pension contributions were limited to the basic rate of tax, the amount of this relief would fall by approximately one third. This estimate does not take account of behavioural effects, which are likely to be large' (*Hansard*, column 1249W, <http://www.publications.parliament.uk/pa/cm201011/cmhansrd/cm110706/text/110706w0002.htm>).

<sup>24</sup> These arguments are developed in more detail in C. Emmerson, 'Taxation of private pensions', in C. Emmerson, P. Johnson and H. Miller (eds), *The IFS Green Budget: February 2014*, <http://www.ifs.org.uk/publications/7072>.

In summary, then, restricting the rate of income tax relief on pension contributions would be unfair and inappropriately distort behaviour. There are far better ways to raise money from well-off people, or to reduce the generosity of pensions taxation, or even to do both at once (on which more below).

### Raising council tax or introducing a 'mansion tax'

The policies considered thus far are aimed at high incomes. Raising council tax, or introducing a mansion tax, would represent a tax on high (housing) wealth.

Each residential property in Britain is allocated to a council tax band, based (in England and Scotland) on the assessed 1991 value of the property.<sup>25</sup> Individual local authorities determine the overall level of council tax, while the ratio between rates for different bands is set by central government (and has not changed since council tax was introduced in 1993). Council tax is charged at a much lower percentage of property value for high-value properties than for low-value properties. For example, in a local authority setting the 2018–19 average band D rate in England of £1,671,<sup>26</sup> someone with a property at the midpoint of band D (£78,000) will pay 2.14% of its 1991 valuation, while someone with a property at the midpoint of band G (£240,000) will pay £2,786, or 1.16% of its 1991 valuation. This unfairly and inefficiently favours more valuable properties, and in particular the most valuable properties.

It is hard to find a good reason why council tax should be less than proportional to property values, and the Mirrlees Review of the tax system recommended that it should be transformed into a simple percentage of property value.<sup>27</sup> In the process, it could be brought up to date: it is ludicrous that council tax in England and Scotland continues to be based on the relative values of different properties in 1991.

In the absence of such a thoroughgoing reform, however, the government could increase council tax rates paid by those with high-value properties. One complication here is that if the government merely increases the council tax ratios for higher-valued properties, the extra revenue would accrue to local authorities, who collect council tax. In order to boost central government finances, the government would either have to 'claw back' some of the additional revenue from local authorities or leave council tax unchanged and instead implement and collect a separate new national tax on higher-valued properties (a 'mansion tax', discussed below).

Doubling council tax ratios on the top four bands in England would raise £8.5 billion – made up of £3.9 billion from the increase in band E (and affecting 9.5% of properties), £2.5 billion from band F (5.0% of properties), £1.8 billion from band G (3.5% of properties)

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<sup>25</sup> Since 2005, council tax bandings in Wales are based on assessed 2003 values. Northern Ireland operates a different system, based on point values (subject to a cap) rather than bands.

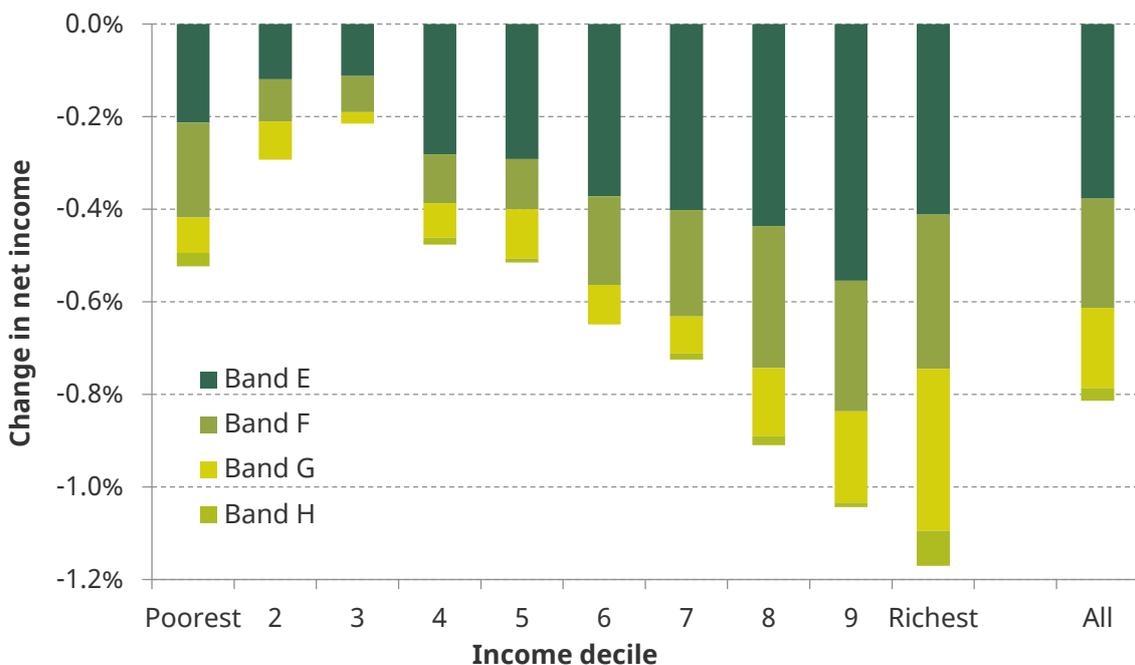
<sup>26</sup> Source: <https://www.gov.uk/government/statistics/council-tax-levels-set-by-local-authorities-in-england-2018-to-2019>.

<sup>27</sup> Chapter 16 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 the Institute for Fiscal Studies, Oxford, 2011, <http://www.ifs.org.uk/publications/5353>.

and £0.3 billion from band H (0.6% of properties).<sup>28</sup> This would cost an occupant of a band H property £3,343 per year if they lived in a local authority setting the English average council tax rate.

Figure 5.8 shows the impact of such a reform across the income distribution (ignoring any possible shifting of the burden of the tax rise onto landlords in lower rents). As the figure shows, there are some households with a low current income but who would nonetheless be affected by the policy, because they live in a high-band property but (despite their low income) would not receive an increase in council tax support to offset their higher tax bill.<sup>29</sup> Equally, many high-income households live in a band D or lower property and thus would be unaffected by the reform. Whether one considers this is an acceptable consequence or not will depend in part on whether one views those with high wealth and low income, or those with low wealth and high income, as rich or poor. Nonetheless, the reform would be broadly progressive with respect to income, with the highest-income households losing the most.

**Figure 5.8. Distributional impact of doubling council tax ratios for bands E, F, G and H in England**



Note: Income decile groups are derived by dividing all households into 10 equal-sized groups according to income adjusted for household size using the modified OECD equivalence scale. Income excludes imputed rental income from owner-occupied housing.

Source: Family Resources Survey 2016–17 and authors' calculations using the IFS tax and benefit microsimulation model, TAXBEN (<https://www.ifs.org.uk/publications/12858>).

<sup>28</sup> Revenue figures calculated using TAXBEN, the IFS tax and benefit microsimulation model. Share of properties calculated from Table CTSOP1.0, <https://www.gov.uk/government/statistics/council-tax-stock-of-properties-2017>.

<sup>29</sup> In practice, this would include those who do not take up their entitlements (which we do not model in the figure) as well as those who are not entitled to council tax support despite their low current income because they have substantial financial assets or because they live in a local authority that has cut this group's entitlement in certain ways since council tax support was localised in 2013 (both of which we do model).

Those affected would be concentrated in London and the South East. These two regions account for around half of all band E, F and G properties and 70% of band H properties. As house prices in London and the South East have increased faster than in other regions since property values were assessed (as discussed in Chapter 9), it is likely that an even larger share of affected properties would be in these regions if the tax rise were targeted at properties with high current (rather than 1991) values.

The government might aim to restrict the tax increase to properties with the very highest values. There are two possible approaches to this. Either it could introduce additional council tax bands above band H which attract a higher rate of council tax (as Wales has done) or it could introduce a separate 'mansion tax' for high-value properties based on current (rather than 1991) property values.

Neither policy is likely to raise a substantial sum of money unless the rates applied are very high. There are currently 141,000 properties in band H in England;<sup>30</sup> if England created a new band I (as Wales has done) and put, for example, half of the band H properties in there, those 70,500 properties would have to see their council tax bills increase by over £14,000 per year on average (more than quadrupling what they are currently paying) in order to raise £1 billion from this policy.

A mansion tax based upon current property values would run into similar issues. Nobody knows for sure how many high-value properties there are today since the last comprehensive valuation of all UK properties was in 1991. Several estate agents and analysts estimated in 2015 that the number of properties worth over £2 million (the threshold for a mansion tax proposed by Labour and the Liberal Democrats at the 2015 election) was between 58,500 and 110,000.<sup>31</sup> This is similar to the number of properties in the hypothetical band I discussed above, and so likewise would require very large tax increases to raise a significant amount of revenue.

### Capital gains tax on main homes

Capital gains tax (CGT) is applied to the profit received when an asset that has increased in value is sold. However, rises in the value of principal private residences – people's main homes – are exempt from CGT. This is by far the biggest relief in CGT: in 2017–18, it reduced annual CGT liabilities by an estimated £27.8 billion – more than triple the total expected CGT revenue – although the government argues, correctly, that abolishing it would yield substantially less than this as people changed their behaviour in response.<sup>32</sup>

As with CGT in general, levying CGT on principal private residences involves a trade-off. On the one hand, imposing CGT would discourage people from saving – in this case, buying a

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<sup>30</sup> Source: Table CTSOP1.0, <https://www.gov.uk/government/statistics/council-tax-stock-of-properties-2017>.

<sup>31</sup> Savills – 97,000 from [http://www.savills.co.uk/\\_news/article/55328/183956-0/11/2014/prime-housing-market--the-ultimate-political-football-](http://www.savills.co.uk/_news/article/55328/183956-0/11/2014/prime-housing-market--the-ultimate-political-football-); Zoopla – 108,000 from <http://blog.zoopla.co.uk/2014/09/23/labours-mansion-tax-proposal-to-place-heavy-burden-on-south-east/>; Knight Frank (110,000) and Hometrack (58,500) cited in <http://www.bbc.co.uk/news/business-29326057>.

<sup>32</sup> Source: HMRC Statistics, 'Principal tax reliefs', <https://www.gov.uk/government/statistics/main-tax-expenditures-and-structural-reliefs>.

(bigger) house. On the other hand, it would enable the government to capture a share of any large capital gains and it would reduce distortions between similar assets.<sup>33</sup>

Like CGT on other assets, imposing CGT on main homes would generate a 'lock-in' effect: people would be artificially discouraged from selling a home that had risen in value, since only when it was sold would a CGT liability be triggered. Discouraging property transactions that would otherwise be mutually beneficial (as stamp duty land tax already does) is undesirable.

The government could choose to introduce CGT on main homes only for increases in value that occurred after the date of the announcement (or some other date), forgoing taxing the huge rise in property values that many homeowners have already enjoyed. This would bring in revenue in future, but would raise little in the short term. Applying CGT to gains that have already accrued has the potential to raise much more revenue, but may not be that successful in practice. The lock-in effect described above would be exacerbated by the political backlash that would almost certainly follow the introduction of CGT on people's main homes, since if people believed that the policy would be reversed (perhaps by a future government) then they would have an enormous incentive to hold on to the property until this happened. As well as being a distortion in its own right, this could seriously undermine the revenue yield of the reform – further adding to the pressure to reverse the policy. Since any such policy would almost certainly dramatically reduce the number of properties bought and sold, its negative effects on the housing market, and perhaps the wider functioning of the economy, could be very serious indeed.

There is a case for reforming the taxation of housing, and the Mirrlees Review argued that the ideal solution in principle would be to introduce a 'rate-of-return allowance', giving tax relief for a 'normal' rate of return to the purchase cost of all housing, and fully tax returns to housing investment that exceeded that allowance. But for owner-occupied housing, even that would be difficult in the short run.<sup>34</sup> For now, the CGT treatment of owner-occupied housing is probably better left unchanged.

## 5.4 Taxing older people

If the government wants to increase revenue to spend more on the NHS, it might consider policies that particularly draw revenue from older people, since they are far heavier users of the health service (for example, the OBR estimates that health spending on a typical 80-year-old is 4.6 times as much as that on a typical 40-year-old).<sup>35</sup> In any case, as a group, the older population has done much better financially than those of working age since the financial crisis. In this section, we discuss several policies that affect older individuals or that relate to taxation at the point of death. Policies in the latter category can be thought of as affecting wealth holders before they die (since they affect the value of bequests and

<sup>33</sup> Most importantly, in this case, imposing CGT on main homes would reduce – though not eliminate – the current tax bias in favour of owner-occupation versus rental property, since landlords are subject to both CGT on their properties and income tax on the rent (net of some costs) they receive.

<sup>34</sup> See section 16.2.2 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 the Institute for Fiscal Studies, Oxford, 2011, <http://www.ifs.org.uk/publications/5353>.

<sup>35</sup> Office for Budget Responsibility, *Fiscal Sustainability Report: July 2018*, <http://obr.uk/fsr/fiscal-sustainability-report-july-2018/>.

might therefore change people's behaviour before death), but of course also affect the recipient, who could be any age. Data from the mid 1990s to the mid 2000s suggest that those aged 55–64 are the age group most likely to receive an inheritance, and those that do on average receive more than younger recipients.<sup>36</sup>

### Charging employee and self-employed NICs on earnings of those aged over state pension age

As noted in Section 5.2, those aged over the state pension age (SPA) do not pay employee or self-employed NICs on their earnings (though their earnings are subject to employer NICs). The government could choose to remove this exemption, which would raise £1.1 billion before allowing for any behavioural response. Pensioner households with a high current income would lose more than others, though this might overstate the progressivity of the reforms since some who have stopped working and would not be affected by the reform have low current income but high lifetime resources, having retired early and relying on their accumulated wealth.

One disadvantage of reforms such as this is that those around retirement age are relatively responsive to tax and benefit changes. Weakening their financial work incentives is therefore particularly likely to reduce employment, which in turn reduces the revenue yield of the policy and increases inefficiency to a greater extent than many of the other policies discussed in this chapter.

### Charging NICs on private pension income

Money contributed to a private pension (up to limits) is not subject to income tax at that point, and the money is instead taxed (along with any returns generated in the interim) when it is withdrawn from the pension fund.<sup>37</sup> This effectively defers income tax on earnings saved in a pension until the point they are withdrawn, a broadly sensible approach. Pension contributions are also given relief from both employee and employer NICs, if they are made by the employer – but, unlike with income tax, there is no NICs levied on income from a pension. This means that pension contributions made by the employer – which make up around three-quarters of pension contributions<sup>38</sup> – are wholly exempt from NICs: neither the contributions themselves nor the income subsequently received is subject to the tax.

The Mirrlees Review argued that, in principle, it would be better to provide NICs relief on all pension contributions (rather than just employer contributions) and levy NICs on all pension income, so that the NICs system treated pensions in the same way as income tax does (with the added advantage of moving further towards integration of income tax and NICs). One step in that direction would be to start levying some NICs on pension income. Each percentage point of NICs levied would raise around £650 million.<sup>39</sup> This would be a

<sup>36</sup> Table 5.3 in E. Karagiannaki and J. Hills, 'Inheritance, transfers, and the distribution of wealth', in J. Hills, F. Bastagli, F. Cowell, H. Glennerster, E. Karagiannaki and A. McKnight (eds) *Wealth in the UK: Distribution, Accumulation, and Policy*, Oxford University Press, Oxford, 2013.

<sup>37</sup> 25% of the pension pot can be withdrawn free of tax, however.

<sup>38</sup> HMRC, 'Registered pension schemes: cost of tax relief', <https://www.gov.uk/government/statistics/registered-pension-schemes-cost-of-tax-relief>.

<sup>39</sup> Source: Authors' calculations using TAXBEN, the IFS tax and benefit microsimulation model, run on updated data from the 2016–17 Family Resources Survey.

highly progressive change among pensioner households, with two-thirds of the revenue coming from the highest-income fifth of pensioner households. This pattern is explained both by private pension income being more prevalent among higher-income pensioner households and by the fact that NICs exempt the first £162 per week of income.

While levying NICs on pension income in this way could end the excessively generous NICs relief on employer pension contributions, on its own it would have two important downsides. First, it would imply double taxation of employee pension contributions, levying NICs on both pension contributions and the pension income they generate. There is no way to separate pension income generated from employer contributions from that generated from employee contributions, so NICs on pension income should be accompanied by NICs relief on employee (as well as employer) pension contributions.

The second drawback is that it would arguably undermine the legitimate expectations of those who have saved up to now on the understanding that they would not have to pay NICs on their pension income. However, this downside applies to an extent to some other policies discussed in this chapter as well. It could be argued that a VAT increase, say, is 'retrospective' in a similar sense given that (as discussed in Section 5.2) it too entails an unexpected extra tax that must be paid from existing savings, and the same would be true of an income tax rise that affected pensions in payment – though neither of these is an extra tax targeted *just* at existing wealth.

### Forgiveness of CGT at death

CGT is written off or 'forgiven' when an asset holder dies: the deceased's estate is not liable for CGT on any increase in the value of assets prior to death, and those inheriting the assets are deemed to acquire them at their market value at the date of death, so any rise in value that occurs before death escapes tax completely. This is highly distortionary: it encourages people to hold on to assets that have risen in value, even if in the absence of tax considerations they would prefer to sell them and use the proceeds in some other way. It also encourages people to buy assets that yield returns in the form of capital gains rather than income and to convert income into capital gains where possible, in order to escape income tax. There is a strong case for getting rid of this relief.

In December 2012, the government estimated that this relief would cost it £490 million in 2012–13, though it has declined to publish an estimate since then on the grounds that the cost 'cannot be reliably estimated' from existing data.<sup>40</sup>

### Taxation of inherited pension savings

Until recently, it was unusual for pension savings to be passed on when the saver died. Most people's pension savings were converted to an annuity – an annual income for life – around the time they retired, leaving nothing to bequeath.

Two developments are changing this, however:

<sup>40</sup> HMRC, 'Tax reliefs in force in 2016–17 or 2017–18: estimates of cost unavailable (January 2018)', <https://www.gov.uk/government/statistics/tax-allowances-and-reliefs-in-force-cost-not-known>. The 2012 estimate is available in the National Archives at <http://webarchive.nationalarchives.gov.uk/20131113190813/https://www.gov.uk/government/publications/main-tax-expenditures-and-structural-reliefs>.

- First, there has been a long-term shift from the use of defined benefit pensions (where an employer provided an income from when the pension was drawn until death, but the individual had no fund of their own to pass on to descendants at death) to defined contribution pensions (where the saver 'owns' a pot of money that can be bequeathed).
- Second, the introduction of 'pension freedoms' in April 2015 removed the requirement to convert pension savings into an annuity by age 75. The proportion of people annuitising their (defined contribution) pension pot fell significantly following this reform.

These developments mean that there is a rapidly growing number of pensioners who have a pot of bequeathable money instead of an annual pension income. This makes the tax treatment of bequeathed pension pots an important issue. However, as it stands, the treatment of pension pots is astonishingly generous both for income tax and for inheritance tax.

### Income tax on pension savings bequeathed before age 75

As explained above, income tax is not levied on money contributed to a private pension but is instead levied when the money is withdrawn from the pension fund. If the pension saver dies with money left in the pension pot, the general rule is that whoever inherits the pension pot is liable for income tax on it whenever they withdraw the money, in lieu of the income tax that the saver would otherwise have paid. However, if the pension saver dies before age 75, an exception is made and there is no tax liability on the money withdrawn. It is hard to see a good rationale for this exception. There is no good reason why earnings should escape income tax altogether if they are put into a pension fund and then bequeathed before age 75. Nor is there any good reason to encourage people to keep as much money as possible in their pension fund until age 75 rather than use it to finance their retirement, or save less or in a different form.

### Inheritance tax on bequests of pension savings

When inheritance tax is paid after a death, most of the deceased person's assets are included in their taxable estate. But any pension savings they bequeath are not.<sup>41</sup>

This has created an absurd position where the tax system incentivises people to use everything *except* their pension to pay for their retirement, and instead to bequeath their pension intact as far as possible. Pension freedoms make this course of action a real possibility.

Recent IFS research examining the behaviour of pensioners (before the introduction of pension freedoms) shows that people draw down their non-pension wealth surprisingly little in retirement.<sup>42</sup> That does not necessarily imply that they will behave the same way with their pension funds, but it at least suggests that people might be able to resist the temptation to spend their pension savings at the earliest available opportunity. It certainly

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<sup>41</sup> Other tax-favoured assets include certain business and agricultural property, which can attract full or partial relief depending on the exact nature of the assets. These reliefs cost the exchequer an estimated £1.2 billion per year and should also be considered as a possible source of additional revenue.

<sup>42</sup> R. Crawford, 'The use of wealth in retirement', IFS Briefing Note BN237, <https://www.ifs.org.uk/publications/12959>.

seems plausible that they will finance their retirement from other sources – or simply spend less in retirement – now that they do not have to use their pension for that purpose. The inheritance tax system steers them in that direction.

The obvious option would have been to bring pensions within the inheritance tax net at the time that pension freedoms were introduced. Having missed that opportunity, the government should introduce this reform as soon as possible. The longer it waits, the greater the revenue loss – and the political resistance – will become, as more and more people move into old age with large (unannuitised) pension pots and the expectation that they will be able to bequeath them free of inheritance tax.

These two policies unfairly favour those who inherit pension wealth rather than other forms of wealth, and inefficiently encourage people to keep their wealth in pensions. They also cost the exchequer revenue: a tiny amount at the moment, since most existing pensioners – especially older ones nearer the end of life – are still receiving an annual income from a defined benefit or already annuitised defined contribution pension, and so are not able to take advantage of the generous tax treatment of unannuitised pension pots. But the amount of pension wealth bequeathed is likely to grow rapidly, and the revenue loss with it.

This rapid growth is likely not only as people bequeath more of their pension wealth, but also as they put more into pensions in the first place. Whereas in the past people saving in order to leave money to their children when they die will not have used pensions for that purpose, it now makes sense to do so. Even without specific tax exemptions at death, the income tax and NICs systems provide generous tax treatment for pension saving. There is some justification for tax incentives when pensions represent people's retirement savings; it is harder to justify such subsidies if pensions can be bequeathed (or indeed withdrawn and spent at age 55) rather than used to provide a retirement income. Moreover, the effects of generous tax treatment of pension saving during life, greater freedom in how the pension savings are used, and generous treatment at death, all reinforce each other in encouraging the use of pensions as a savings vehicle for bequests.

To appreciate how big this tax advantage can be – and why we might therefore expect it to be widely exploited and cost a lot to the exchequer – consider a higher-rate taxpayer who saves £1 million in a pension and dies at age 70, bequeathing it all to her children along with a house of sufficient value to use up her inheritance tax nil-rate band. There will be no tax to pay on that £1 million at any stage: no income tax, no employer or employee NICs (if the pension contributions were made via the employer) and no inheritance tax. £1 million paid by her employer becomes £1 million for her children to spend. In contrast, if her employer paid the same amount but she now saved in another form – even a tax-free vehicle such as an ISA or a bigger main home – then, after income tax and NICs on the earnings and inheritance tax on the bequest, the children would be left with only £305,800 of the £1 million to spend. Using a pension rather than another savings vehicle saves the family £694,200 in tax: the difference between the government taking almost 70% of the £1 million in tax and taking none of it at all. It is hard to understand why the government should subsidise saving for bequests via a pension, while at the same time levying inheritance tax on other bequests.

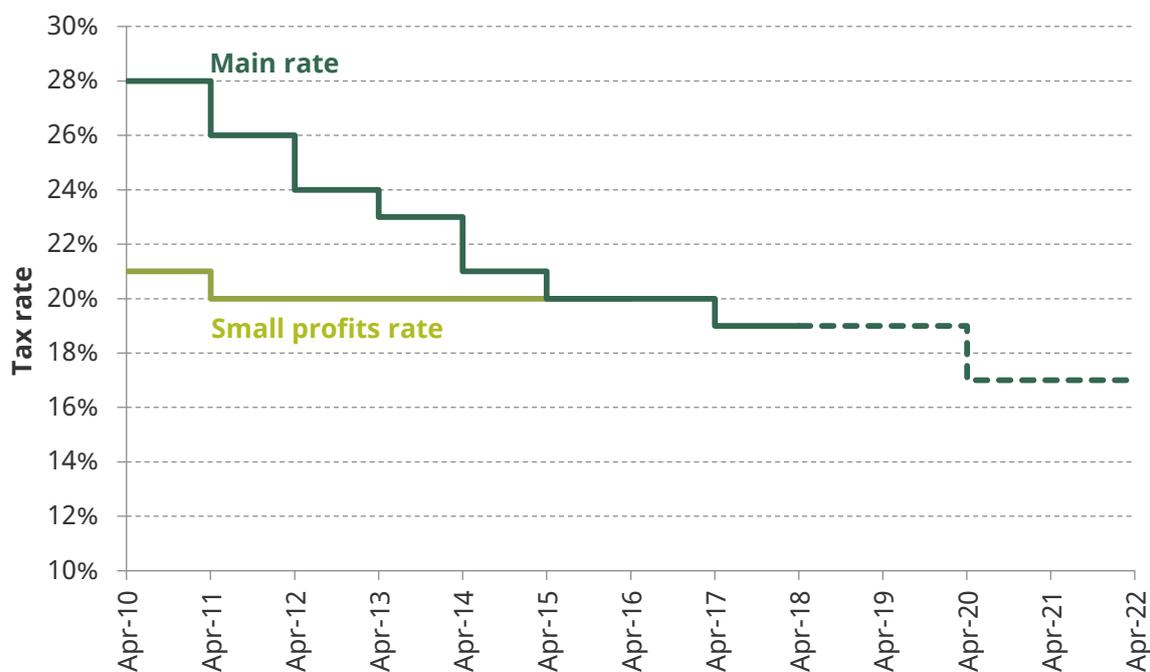
## 5.5 Taxes on business profits and business finance

### Corporation tax<sup>43</sup>

After income tax, NICs and VAT, the UK’s fourth-biggest tax is corporation tax, which is levied on company profits. As Figure 5.9 shows, the main rate of corporation tax has been cut considerably since 2010 – from 28% to 19%, and on current plans to 17% from April 2020. Over the same period the small profits rate – which had applied to companies with profits under £300,000 – has been merged into the main rate.

This period has been one where other high-income countries have also been cutting their corporation tax rates. Between 2010 and 2018, while 8 of the 36 OECD countries increased their rate by at least 1 percentage point, 17 cut it by at least that much.<sup>44</sup> However, the UK’s cuts have been larger than most. As Figure 5.10 shows, this has left the headline rate in the UK as one of the lowest in the OECD – having been in the top half in 2010.

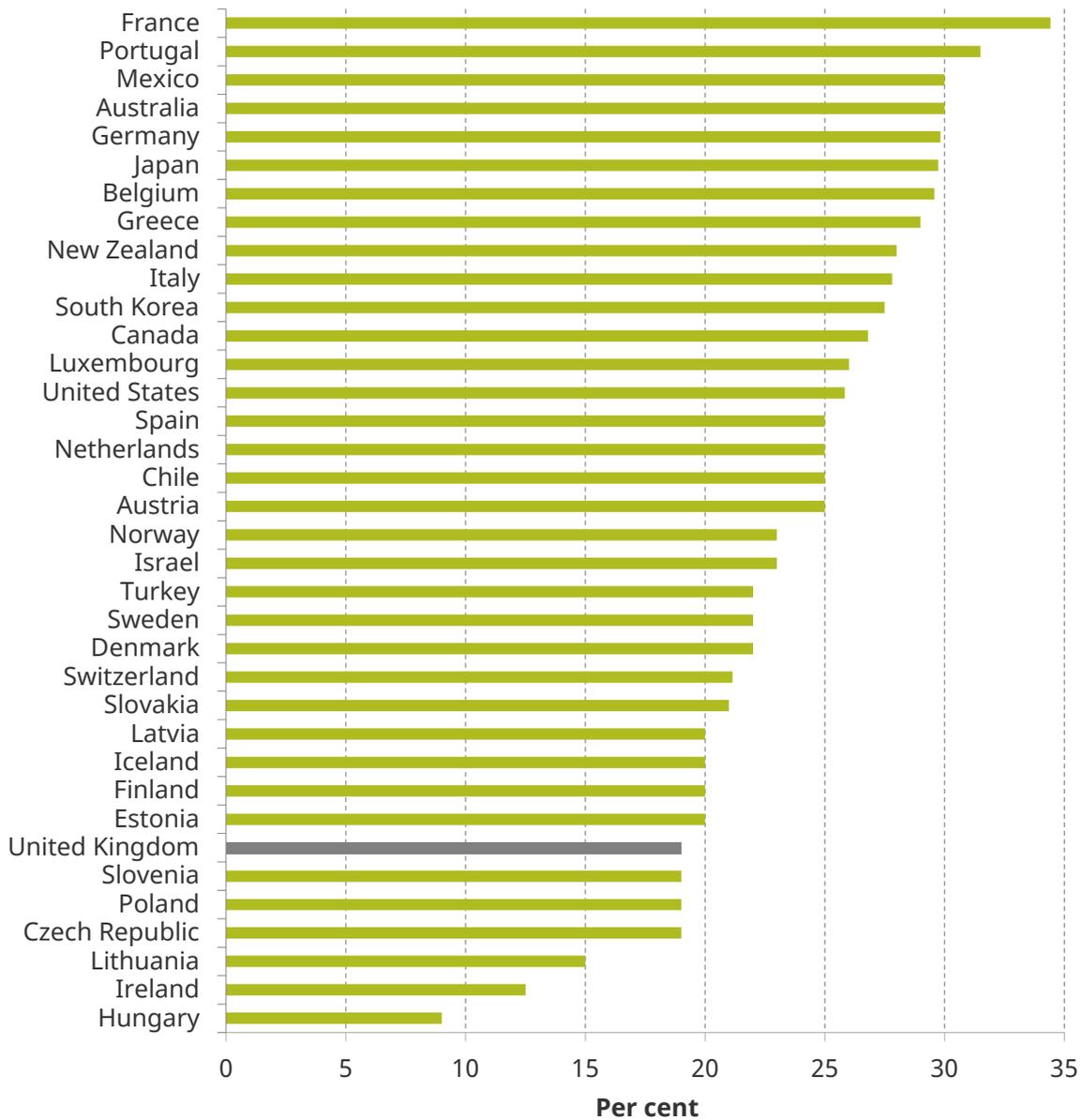
**Figure 5.9. Rates of corporation tax, April 2010 to 2022**



Source: R. Joyce, *General election 2017, manifesto analysis: tax and benefit policies*, <https://www.ifs.org.uk/publications/9257>.

<sup>43</sup> This section draws on H. Miller, ‘What’s been happening to corporation tax?’, IFS Briefing Note BN206, 2017, <https://www.ifs.org.uk/publications/9207>.

<sup>44</sup> OECD tax database, combined corporate income tax rate, [https://stats.oecd.org/index.aspx?DataSetCode=TABLE\\_II1](https://stats.oecd.org/index.aspx?DataSetCode=TABLE_II1).

**Figure 5.10. Main rate of corporation tax in OECD countries, 2018**

Note: The rate shown refers to the combined corporate income tax rate, which is the combination of the central government rate and subnational rates (if any).

Source: OECD tax database, combined corporate income tax rate,  
[https://stats.oecd.org/index.aspx?DataSetCode=TABLE\\_I1](https://stats.oecd.org/index.aspx?DataSetCode=TABLE_I1).

Official figures suggest that corporate tax revenues would have been over £16 billion higher in 2017–18 if the headline tax rates had not been cut.<sup>45</sup> HMRC estimates that raising the corporate tax rate by 1 percentage point would raise £2.8 billion a year, such that cancelling the planned cut from 19% to 17% – in breach of the Conservative party’s 2017 manifesto commitment – would raise about £5.3 billion.<sup>46</sup> Returning the main rate of corporation tax to 26% (its level in 2011–12), and reintroducing the small profits rate at 21% – as proposed in Labour’s 2017 election manifesto – would raise around £19 billion (including the revenue from cancelling the scheduled reduction).

All of these estimates represent short-run costings. In the long run, the revenue raised would probably be less as HMRC’s estimates do not take account of longer-run effects of corporate tax rises reducing UK investment. There is clear evidence that corporate tax is one of the many factors that affect where multinational firms choose to locate their investments and profits.<sup>47</sup> All else equal, therefore, having a lower corporate tax rate than other countries makes the UK more internationally competitive and is likely to lead to more investment in the UK. The extent of this is unclear, however, and a 1ppt increase in the tax rate would reduce investment by less (and therefore increase revenue by more) when the rate is low to start with, as it is now, than when the rate is high.

The headline rate is not the only aspect of the corporate tax regime that determines how attractive a country is. Other elements, including R&D tax credits, Patent Boxes (reduced rates on income from intellectual property) and capital allowances can also affect decisions. Compared with other countries, the UK has a particularly ungenerous set of capital allowances. That is, the UK allows a smaller share of capital expenditure to be deducted from revenues each year. The annual investment allowance (AIA) is an exception to this – it allows 100% of most plant and machinery costs up to £200,000 to be deducted from profits in the year they are incurred. But while the AIA is important for small businesses, it is a drop in the ocean for the big multinationals that provide much of corporation tax revenue. For a government wishing to support UK investment, the headline corporation tax rate is only one of several available policy levers, the efficacy of which will differ across different types of companies and over time (for example, depending on the tax regimes offered by other countries).

All taxes are ultimately paid by real people. The direct effect of a corporation tax rise is to make shareholders worse off, since lower after-tax company profits means lower dividends and capital gains on their shares. This will affect not only investors with direct

<sup>45</sup> Onshore corporation tax revenue is now higher as a share of national income than it was in 2010–11. However, that does not mean that the cuts to the headline tax rates have increased revenue. Revenue has risen for a number of other reasons, including a set of revenue-raising reforms (such as reductions in capital allowances, restrictions to loss offsets and especially anti-avoidance measures), a shift towards working through owner-managed companies (which increases corporation tax revenue but reduces other tax revenue) and a rebound in profits – especially financial sector profits – that was at least partly to be expected following the financial crisis. See: H. Miller, ‘What’s been happening to corporation tax?’, IFS Briefing Note BN206, 2017, <https://www.ifs.org.uk/publications/9207>; paragraphs 4.34 and 4.57 of Office for Budget Responsibility, *Economic and Fiscal Outlook: March 2017*, <http://budgetresponsibility.org.uk/efo/economic-fiscal-outlook-march-2017/>; and paragraphs 4.56–4.60 of Office for Budget Responsibility, *Economic and Fiscal Outlook: November 2016*, <http://budgetresponsibility.org.uk/efo/economic-and-fiscal-outlook-november-2016/>.

<sup>46</sup> Authors’ calculations using HMRC Statistics, ‘Direct effects of illustrative tax changes’, <https://www.gov.uk/government/statistics/direct-effects-of-illustrative-tax-changes>.

<sup>47</sup> R. A. de Mooij and S. Ederveen, ‘Corporate tax elasticities: a reader’s guide to empirical findings’, *Oxford Review of Economic Policy*, 2008, 24, 680–97.

shareholdings, but also, for example, those with private pensions, since most pension funds are at least somewhat invested in UK shares. However, the burden will not be entirely borne by company shareholders. It can also be borne by workers; for example, if firms respond to higher corporation tax rates by investing less in the UK, that leaves the UK with lower capital, lower labour productivity and lower average wages. Evidence suggests that, because capital tends to be much more mobile than workers, a significant share of the burden of corporation tax tends to get shifted to workers.<sup>48</sup> Corporation tax can also be borne by consumers if firms respond by increasing the prices they charge. Overall, because of these factors, the distributional impact of a cut to corporation tax is not clear.

### Extending stamp duty to more financial transactions

The Labour party's 2017 general election manifesto proposed a major extension of stamp duty, which is currently levied at a rate of 0.5% on transactions of shares issued by UK companies and raises £3.5 billion a year.

Labour claimed that extending the tax could raise an additional £5.6 billion a year, based on a paper that proposed extending the tax to cover transactions of bonds and derivatives as well as shares, to cover worldwide transactions involving UK residents as well as transactions of UK company shares, and to apply (at a reduced rate of 0.2%) to transactions by 'market makers' and other intermediaries, which are currently exempt.<sup>49</sup>

It is unclear how successfully such an extension could be implemented, or how successful it would be at raising revenue: it is hard to predict how far taxation of derivatives might be sidestepped via new financial instruments, for example, or how far taxation of UK-resident owners rather than just shares in UK companies might cause the ownership of securities to shift from UK to foreign banks. Labour's costing of the policy is based on debatable assumptions about the likely size of responses to the reform.

The economic case for such a reform is doubtful. Stamp duty discourages mutually beneficial transactions, and extending it would mean fewer assets being held by the people who value them most. It would also raise the cost of capital for firms, discouraging investment, since higher trading costs reduce what buyers are willing to pay for shares and bonds issued.

Removing the exemption for intermediaries is a particularly bad idea. It implies, for example, that shares bought directly would be taxed once whereas those bought via a broker would be taxed twice. Markets are not made more efficient by impeding the matching of buyers to sellers and reducing liquidity. And, in practice, trades often pass through several parties, not just a single broker, leading to overall effective tax rates on an underlying trade being much higher than the headline rate.

<sup>48</sup> For a review of work on the incidence of corporate income taxes, see A. Auerbach, 'Who bears the corporate tax? A review of what we know', in J. Poterba (ed.), *Tax Policy and the Economy*, 20, National Bureau of Economic Research, Washington DC, 2006. Recent work in the US suggests that capital owners may also bear a significant share of the burden – see K. Clausing, 'Who pays the corporate tax in a global economy?', *National Tax Journal*, 2013, 66(6), 151–84 – though this is likely to be less true in the UK.

<sup>49</sup> A. Persaud, 'Improving resilience, increasing revenue: the case for modernising the UK's stamp duty on shares', Intelligence Capital, 2017, [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2908464](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2908464).

A strong rationale would be needed to outweigh these downsides.

Proponents of financial transaction taxes often argue that they would reduce market volatility and systemic risk, but both theory and evidence are ambiguous as to whether such a tax would reduce volatility or increase it. Labour's stated aim is 'ensuring that the public gets a fairer share of financial system profits'. But transactions and profits are different. Banks already pay a higher rate of corporation tax on their profits than other companies do, and if Labour thinks that fairness requires taxing financial sector profits to an even greater extent, then increasing that corporation tax surcharge would be a better-targeted and less-damaging option.

Labour, and others, refer to the stamp duty policy as the Robin Hood tax, giving the impression that the revenue would be raised from rich people. It would not, at least not entirely. Extending stamp duty would directly reduce the investment returns of all those who own or invest in shares, bonds and derivatives (including indirectly through a pension). To the extent that it leads to lower investment by UK firms, it would also have indirect effects on wages and prices. It should not be seen simply as a tax on rich owners or rich employees of financial sector firms.

### Abolishing entrepreneurs' relief

Entrepreneurs' relief applies a reduced CGT rate of 10% to capital gains (up to a lifetime limit of £10 million) on certain eligible assets:

- shares in a trading company (or holding company of a trading group) of which the shareholder has been a full-time employee or director, owned at least 5% of the shares and had at least 5% of the voting rights, all for at least a year;<sup>50</sup>
- an unincorporated business (or distinct part of a business), or business assets sold after the individual stops carrying on the business.

Budget 2016 reduced the rate of CGT on most other assets to 10% for basic-rate taxpayers anyway, so this relief is now just a benefit for higher- and additional-rate taxpayers, who would otherwise face a 20% CGT rate – still much lower than they would pay on ordinary income.

HMRC estimates that increasing the CGT rate on qualifying gains by 1 percentage point would raise £160 million.<sup>51</sup> In total, entrepreneurs' relief reduced overall tax liabilities by an estimated £2.7 billion in 2017–18, although HMRC argues that abolishing it would yield substantially less than this as people would change their behaviour in response.<sup>52</sup>

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<sup>50</sup> Investors' relief similarly applies a 10% tax rate, also with a £10 million lifetime cap, to shareholdings of any size held by external investors (i.e. those not working for the company) in unlisted trading companies if the shares were issued on or after 17 March 2016 and held by the investor for at least three years (so the first claims for relief will not be made until 2019). There are also various tax-advantaged schemes available to employees with smaller shareholdings: see <https://www.gov.uk/tax-employee-share-schemes>.

<sup>51</sup> Source: HMRC Statistics, 'Direct effects of illustrative tax changes', <https://www.gov.uk/government/statistics/direct-effects-of-illustrative-tax-changes>.

<sup>52</sup> Source: HMRC Statistics, 'Principal tax reliefs', <https://www.gov.uk/government/statistics/main-tax-expenditures-and-structural-reliefs>.

Around 70% of gains qualifying for entrepreneurs' relief each year are received by just 6,000 people realising gains of more than £1 million each, who on average receive relief of about £300,000 on gains of around £3 million.<sup>53</sup> Of course, for some of these individuals, the sale of their business will reflect the one-off crystallisation of their entire life savings, but it is still hard to escape the conclusion that this is predominantly a relief for the rich.

Entrepreneurs' relief adds complexity to the tax system and creates a range of distortions, such as:

- It encourages owner-managers of companies to retain profits in the company rather than take them out as dividends or salary, regardless of whether (in the absence of tax considerations) they would rather spend the money or could invest it more profitably elsewhere.
- It provides a strong incentive to set up a company in which to retain profits, putting pressure on anti-avoidance rules, which attempt to define when companies are 'artificial' avoidance devices. Tax-motivated incorporation has become an increasing concern in recent years, with the OBR highlighting its growing cost to the exchequer.<sup>54</sup>
- It gives self-employed individuals and partnerships a large incentive not to sell assets of the business until they are ready to stop doing business altogether, regardless of whether the assets could be more profitably used by others and whether the proceeds of a sale could be more profitably used in other ways.

It is also arguably unfair, as it discriminates against owner-managers who cannot afford to retain profits in their business and against self-employed people who choose (or need) to sell business assets before giving up the business altogether. More generally, the justification for applying lower tax rates to people who make money from a business than to salaried employees seems far from clear.<sup>55</sup> In isolation, abolishing entrepreneurs' relief would weaken the incentive for people to start a business and invest in it. However, it is doubtful that entrepreneurs' relief is the best way to pursue these goals in any case.<sup>56</sup>

## 5.6 Tax avoidance and evasion

Measures designed to tackle tax avoidance and evasion and to improve the efficiency of tax collection have become a staple of fiscal events. Figure 5.11 shows the annual yield from anti-avoidance and operational measures announced at each fiscal event since June

<sup>53</sup> Source: Authors' calculations from HMRC Statistics, table 14.4, <https://www.gov.uk/government/statistics/numbers-of-claimants-of-entrepreneurs-relief-and-amounts-of-gain-by-year>.

<sup>54</sup> See, for example, 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/>.

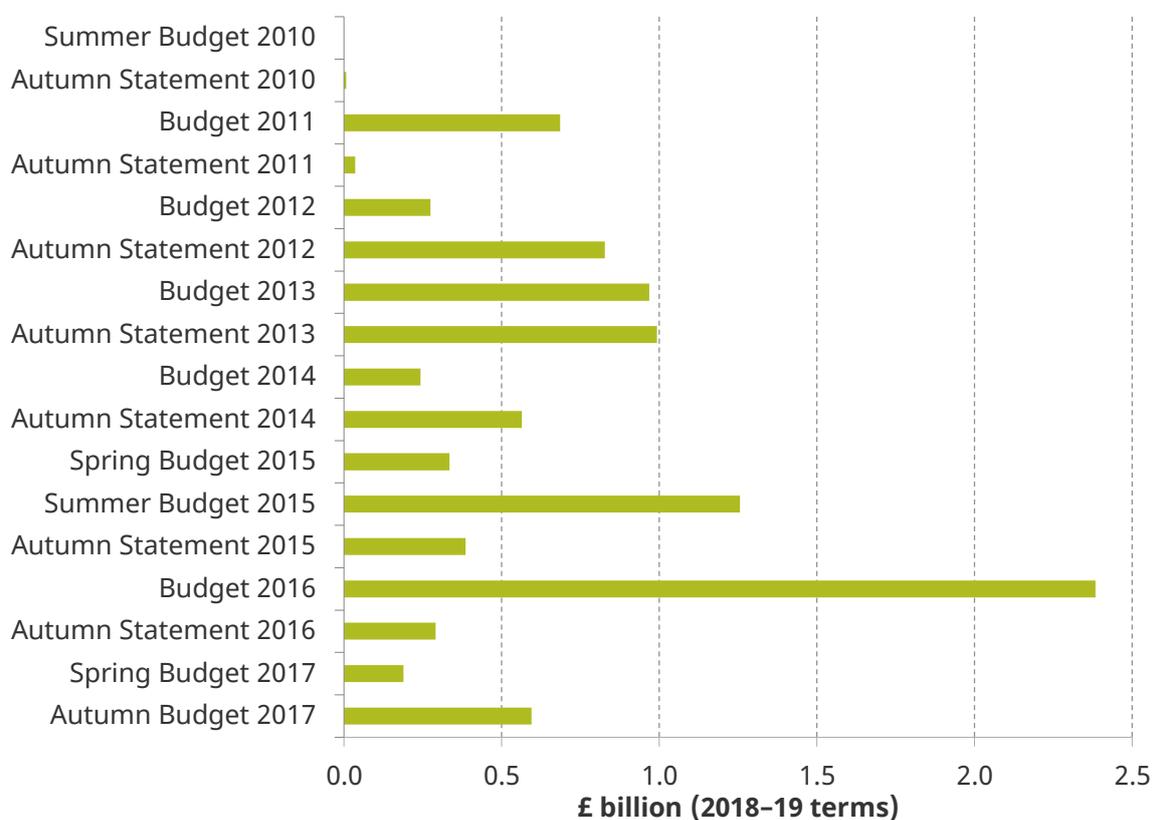
<sup>55</sup> For a fuller development of this argument, see S. Adam, H. Miller and T. Pope, 'Tax, legal form and the gig economy', in C. Emmerson, P. Johnson and R. Joyce (eds), *The IFS Green Budget: February 2017*, <https://www.ifs.org.uk/publications/8825>.

<sup>56</sup> The Mirrlees Review argued that investment can be best encouraged by providing relief for amounts invested, rather than reduced tax rates on actual investment returns: see chapter 15 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 the Institute for Fiscal Studies, Oxford, 2011, <http://www.ifs.org.uk/publications/5353>.

2010. On average, the government has expected the measures in each fiscal event to increase annual revenues by £0.6 billion. While this is not a particularly large number relative to total revenue or borrowing, it is actually bigger than the average net yield from all other tax measures over this period (£0.3 billion per fiscal event).

It seems likely that more such measures will continue to be announced. However, the revenue yield of these measures is highly uncertain. This point has been highlighted by the OBR,<sup>57</sup> which retrospectively evaluated the accuracy of costings of anti-avoidance and operational measures. It found that unpredictable levels of behavioural response mean that the costings of these measures typically come with more uncertainty attached than costings of other measures. Moreover, while these measures have been as likely to bring in more revenue than forecast as to bring in less, the ones with the largest expected yield have been disproportionately likely to underperform.

**Figure 5.11. Forecast annual tax revenue from anti-avoidance and operational measures, by fiscal event**



Note: Measures included are those that the OBR has included when evaluating anti-avoidance and operational measures. The figure shows average annual tax yield within the OBR's forecast window (usually five years). Yields are uprated with nominal GDP to put them in 2018-19 terms.

Source: OBR policy measures database and authors' calculations.

<sup>57</sup> S. Johal, 'Evaluation of HMRC anti-avoidance and operational measures', OBR Working Paper 11, 2017, [http://obr.uk/docs/dlm\\_uploads/WP-No.11-Evaluation-of-HMRC-anti-avoidance-and-operational-measures.pdf](http://obr.uk/docs/dlm_uploads/WP-No.11-Evaluation-of-HMRC-anti-avoidance-and-operational-measures.pdf).

In recent years, much attention has focused on the tax paid (or not paid) in the UK by well-known multinational companies. The UK has introduced a number of unilateral reforms in this area (such as creating a new 'diverted profits tax') and has also been an enthusiastic participant in the OECD's initiative to tackle tax base erosion and profit shifting (BEPS).<sup>58</sup> At present, efforts are concentrated on the taxation of cross-border digital services and the difficult question of how far profits should be allocated according to the location of service users; the government recently ran a consultation on possible reforms it could introduce in this area.<sup>59</sup> There may be scope for further changes to the taxation of multinationals, but there are few easy options, not least because many of the problems stem from an incoherent underlying structure of the international corporate tax system rather than from flawed implementation. It would be unwise for the UK government to rely on raising large amounts of additional revenue in this area. Major change is likely to require international agreement, which can be hard to achieve.

Closer to home, one option for trying to reduce tax evasion is to increase the number of audits of self-assessment income tax returns. Over 10 million people file such a return each year, and in 2008–09 (latest data available) 1.4% were subject to audits. Research using data from random audits found that over a third of them underpaid tax, for reasons ranging from innocent error to outright fraud.<sup>60</sup> The average additional tax owed by such non-compliant taxpayers was £2,320 – about a third of the average initial tax liability they declared, though driven by a small minority underpaying large amounts. Those subject to an audit also tended to report more income for at least five years *after* the audit. This additional revenue is one-and-a-half times the direct revenue yield from an audit.

HMRC could try to raise revenue by increasing the number of 'targeted' audits, where they audit those who are statistically most likely to misreport their tax liability or to misreport it by a substantial amount. These include the self-employed (59% of those reporting only self-employment income were found to be non-compliant), those with property income (non-compliant filers who report only property income under-report their tax liability by 60%) and higher-income filers (those in the highest-income fifth of filers were about as likely as others to be non-compliant, but among those non-compliant they under-reported their tax liability by about 60% more). Targeted audits currently bring in considerably more revenue than they cost, though if HMRC is targeting the most promising cases first then additional audits may be less cost-effective than existing ones.

However, the government might not want to aim to increase audits to the point that maximises net revenue.<sup>61</sup> The cost of conducting audits is a true resource cost to society – the money spent on collecting these revenues is not being spent on other goods and services, either by the government or by individuals. If society values the consumption of non-compliant taxpayers, it may be preferable in some cases to let these people keep the

<sup>58</sup> See H. Miller and T. Pope, 'Corporate tax avoidance: tackling Base Erosion and Profit Shifting', in C. Emmerson, P. Johnson and R. Joyce (eds), *The IFS Green Budget: February 2016*, <https://www.ifs.org.uk/green-budget/2016>.

<sup>59</sup> See <https://www.gov.uk/government/consultations/corporate-tax-and-the-digital-economy-position-paper>. For a discussion of the conceptual difficulties with allocating taxable profits between countries, see H. Miller (2013), 'Corporate tax, revenues and avoidance', in C. Emmerson, P. Johnson and H. Miller (eds), *The IFS Green Budget: February 2013*, <https://www.ifs.org.uk/green-budget/2013>.

<sup>60</sup> A. Advani, 'Who does and doesn't pay taxes?', IFS Briefing Note BN218, <https://www.ifs.org.uk/publications/10003>.

<sup>61</sup> J. Slemrod and S. Yitzhaki, 'The optimal size of a tax collection agency', *Scandinavian Journal of Economics*, 1987, 89, 183–92.

money rather than lose almost all of it in collection costs. On the other hand, society might feel that fairness requires collecting the tax owed even if the cost of collection is high. How far the government should devote resources to increasing compliance thus depends on ethical judgements, for example related to how far underpayments reflect innocent error rather than deliberate evasion.

## 5.7 Conclusion

This chapter has surveyed a number of possible tax rises that the government could consider should it wish to raise more tax revenue. It is not comprehensive, of course: the full set of options available is far wider than space constraints allow. We have mostly restricted ourselves to discussing policies that would raise a significant amount of revenue. There are many smaller tax rises available: in recent years, for example, the government has raised revenue by increasing insurance premium tax, increasing company car taxation, and restricting access to the reduced tax rates available to the self-employed. It would not be surprising if the government turned to such measures again. Individually such changes are unlikely to raise large sums, but the government could combine a number of smaller tax rises to raise a large amount. This approach was seen in the 2017 Labour manifesto: as well as including some genuinely big tax rises (on high incomes and on company profits), it also contained a number of policies that were individually small but together would raise a substantial sum. These ranged from increasing the bank levy to abolishing the transferable marriage allowance in income tax.

The revenue yield of the policies discussed in this chapter are summarised in Table 5.3. Figure 5.12 shows the revenue contributed by each income decile for the subset of policies for which we can do distributional analysis. It also shows (at the top) each decile group's share of total income (a useful comparator when looking at income-based taxes) and share of total expenditure (more useful for looking at expenditure tax reforms). In every policy in the figure, the highest-income decile contributes the most (at least 15%) and the top half contributes at least three-fifths – and in many cases much more. This reflects the fact that almost all taxes are paid predominantly by better-off households.

Table 5.3 and Figure 5.12 show the magnitude of tax rises and their distributional impact. What they do not show is how likely such tax rises are to increase or decrease economic efficiency, or to treat different groups of the population more or less equitably. For example, eliminating VAT exemptions would remove a host of distortions such as a bias to vertical integration, while subjecting intermediaries to stamp duty on shares would reduce market liquidity and efficiency. Restricting income tax relief on pension contributions to the basic rate would unfairly tax some higher-rate taxpayers twice, while removing the inheritance and income tax exemptions for inherited pension wealth would stop unfairly favouring those who inherit pension wealth rather than other forms of wealth.

While the size and distribution of tax rises rightly receive a substantial amount of attention, considerably more could be paid to what such policies do to the design of the tax system. Ineptly designed systems can unnecessarily lead to individuals not engaging in productive activities or mutually beneficial exchanges. Such concerns should be at the forefront of the minds of policymakers.

**Figure 5.12. Distributional impact of possible tax rises**

Note: Income decile groups are derived by dividing all households into 10 equal-sized groups according to income adjusted for household size using the modified OECD equivalence scale. Income excludes imputed rental income from owner-occupied housing; expenditure excludes (actual and imputed) housing consumption. The personal allowance and HRT freezes are for the rest of the parliament. The HRT freeze assumes that the upper earnings limit and upper profits limit are also frozen. Changes to employee NICs include self-employed NICs. The distributional impact of fuel duties is calculated only for duties paid directly by households, and does not include those paid by businesses. 'Remove most zero/reduced rating' applies to a narrower range of goods than those in Table 5.3, excluding new houses, the portion of international passenger transport that takes place in the UK, and ships and aircraft above a certain size. See main text for further details of reforms.

Source: Family Resources Survey 2016–17, Living Costs and Food Survey 2014 and authors' calculations using the IFS tax and benefit microsimulation model, TAXBEN (<https://www.ifs.org.uk/publications/12858>).

**Table 5.3. Revenue from possible tax rises (2018–19 prices)**

<b>Reform</b>	<b>Revenue (£ billion)</b>
<i>Income tax</i>	
Raise basic rate 1ppt	4.6
Raise higher rate 1ppt	1.2
Raise additional rate 1ppt	0.2
Freeze personal allowance (PA) up to 2022–23	5.9
Freeze higher-rate threshold (HRT) up to 2022–23	1.7
PA and HRT manifesto pledge, then freeze up to 2022–23	2.1
Restrict relief on pension contributions to basic rate	10.8
Labour’s 2017 manifesto proposal	2.5
<i>NICs</i>	
Raise main employee and self-employed (SE) rate 1ppt	4.3
Raise additional employee and SE rate 1ppt	1.1
Raise employer rate 1ppt	2.8
Raise UEL to £100,000 p.a.	6.6
Apply employee and SE NICs to earnings above SPA	1.1
Apply 1% NICs to private pension income	0.6
<i>VAT and excise duties</i>	
Raise main rate of VAT 1ppt	6.2
Raise reduced rate of VAT 1ppt	0.3
Raise zero rate of VAT 1ppt	2.4
Remove all zero and reduced rates of VAT	53.2
Remove all VAT exemptions	28.9
Freeze fuel duty (rather than uprate with RPI) up to 2022–23	-3.3
Uprate fuel duty with CPI (rather than RPI) up to 2022–23	-1.2
<i>Council tax</i>	
Double rate for band H	0.3
Double rates for bands H and G	2.1
Double rates for bands H, G, and F	4.6
Double rates for bands H, G, F and E	8.5
<i>Corporation tax</i>	
Cancel planned 2ppt cut in main rate	5.3
Implement Labour’s 2017 manifesto plans	18.9

Note for Table 5.3: Freezes and other uprating changes to income tax and fuel duties are for the rest of the parliament. See main text for further details of reforms. Revenue estimates from different sources vary in the degree of uncertainty surrounding them and in what, if any, allowance is made for behavioural response. See text for further details.

Source for Table 5.3: Authors' calculations using various HMRC statistics (see text for details) and the IFS tax and benefit microsimulation model, TAXBEN, run on uprated data from the 2016–17 Family Resources Survey.

## 6. ICAEW: public sector assets

Ross Campbell (ICAEW) and Martin Wheatcroft (for ICAEW)

### Key findings

- **HM Treasury is conducting a Balance Sheet Review that is due to report alongside the 2018 Autumn Budget. This provides an opportunity to develop a comprehensive investment and asset management strategy**, going beyond ad hoc initiatives such as the recent establishment of the Government Property Agency to improve the management of offices and other general-purpose central government property.
- **Public sector assets are less than half the size of public sector liabilities.** At 31 March 2017, the government reported assets of £1.9 trillion (94% of national income), compared with total liabilities of £4.3 trillion (214% of national income). Most public sector assets are not readily saleable and could not easily be used to settle liabilities, although the public sector's most significant resource – the ability to levy taxes – is excluded.
- **Capital investment is a relatively small component of public spending and has declined since 2009–10, although the government plans to increase investment next year and the year after.** Capital expenditure in 2016–17 of £55 billion (2.8% of national income) was less than 7% of non-capital expenditure of £819 billion (41.2% of national income) and 9% lower in real terms than in 2009–10. Net additions to fixed assets after depreciation and disposals were just £18 billion (0.9% of national income).
- **The government is reliant on future tax revenues to fund its financial commitments, with public debt currently standing at close to £2 trillion.** There are no social security or social care funds. No money has been set aside for £1.9 trillion in unfunded public service pensions, nuclear decommissioning or clinical negligence liabilities.
- **Labour party proposals for nationalisation would add to public sector assets, but the borrowing required would add considerably to liabilities. Higher revenues would follow, but there is a risk of underinvestment in the future without a change in capital allocation approach.** Nationalising utilities, train operations, the Royal Mail and PFI contracts could potentially increase public debt by more than £200 billion.

This chapter complements our chapter on liabilities in last year's Green Budget.<sup>1</sup>

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<sup>1</sup> <https://www.ifs.org.uk/uploads/publications/budgets/gb2017/gb2017ch4.pdf>.

## 6.1 Introduction

Public assets are integral to both the government's balance sheet and the functioning of the UK. Some of these assets, such as schools and hospitals, are essential in delivering public services. Others, such as the road network, are part of the economic, social and legal infrastructure that supports economic activity and hence the tax revenues needed to pay for public services.

As illustrated in Figure 6.1, total public sector assets at 31 March 2017 of £1.9 trillion were reported, equivalent to 94% of GDP or approximately £28,500 per person living in the UK. These were more than offset by liabilities of £4.3 trillion at the same date, equivalent to 214% of GDP or £65,500 per person.

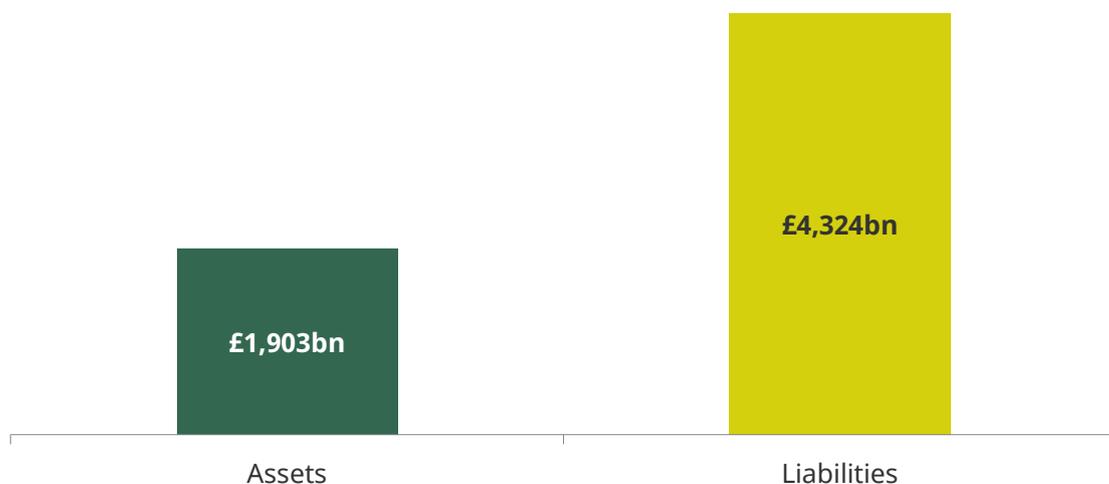
As a consequence, net liabilities were £2.4 trillion – 120% of GDP and an increase of £435 billion from 31 March 2016.

The government is undertaking a Balance Sheet Review, considering how it can use public assets in the most effective way to advance its policy priorities, and how it manages its liabilities and other financial commitments. A progress report is expected with the 2018 Autumn Budget.

The review provides an opportunity for the government to develop a comprehensive investment and asset management strategy, going beyond ad hoc initiatives such as the recent establishment of the Government Property Agency to improve the management of general-purpose central government property.

Section 0 provides an overview of the assets recorded in the public balance sheet at 31 March 2017 and compares them with those of other nations. Section 6.3 examines fixed assets in more detail, including infrastructure, land and buildings, and equipment, while Section 6.4 looks at capital expenditure. Section 6.5 looks at other assets, including

**Figure 6.1. Public sector assets and liabilities at 31 March 2017**



Source: HM Treasury, *Whole of Government Accounts 2016–17*.

investments, receivables, inventories and financial assets, and Section 6.6 discusses how the Balance Sheet Review can be used to improve the utilisation of public assets and the prospects for a comprehensive investment and asset management strategy. Section 6.7 concludes.

### **Box 6.1. What is an asset?**

Accounting standards define an asset as a resource that has arisen from a current or past event and from which future economic benefits are expected to flow.

The definition includes cash, contractual rights that will turn into cash, and resources that can be exchanged for cash or other assets. It also includes tangible and intangible resources that can be used to generate value, which in the case of government includes providing public services.

Assets are initially recorded at fair or market value, in most cases cost or transaction amount. Their value in later periods depends on the type of asset. Fixed assets are reduced by depreciation each year, although an accounting policy to revalue them can be adopted (see Box 6.2 later).

Most investments and financial assets are updated to current market values, though loans are generally recorded at the amount lent plus accrued interest (less provisions for non-repayment). Most other assets are not revalued, unless they need to be written off or impaired.

Assets include resources that are controlled but not owned, such as NHS hospitals under the Private Finance Initiative that are legally the property of private companies.

Not all rights to receive income in the future are recognised as assets. For example, the right to levy tax revenues is not considered to be an asset as it does not arise from a past event. (This is similar to the accounting definition of a liability, which does not include all future payments; for example, commitments to pay the state pension and welfare benefits in the future are not counted as liabilities.)

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

## 6.2 Assets in the Whole of Government Accounts

The 2016–17 Whole of Government Accounts (WGA) can be summarised as shown in Table 6.1.

The accounting loss of £98 billion was higher than the reported fiscal deficit of £45 billion for 2016–17. This was principally because of the inclusion of long-term liabilities, including those for public sector pensions, nuclear decommissioning and clinical negligence, all of which increased between March 2016 and March 2017.

Total assets were recorded at book values adding up to £1,903 billion. Although this is not necessarily the same as their market or potential sales value (as explained in Section 6.3), book values do provide an indication of the level of resources being deployed by the state in providing public services, enabling the financial position of public bodies to be monitored and analysed.

Assets can be categorised as fixed assets, investments, financial assets or working capital assets. Fixed assets are used in production or are needed to support the delivery of services, while investments are generally held with the intention of generating an income and/or capital growth.

Financial assets include cash and bank deposits that can be used to acquire other assets or to meet liabilities as they fall due, as well as short-term loan receivables, gold holdings and financial derivatives. Working capital assets arise as a consequence of operational activities and include receivables and inventories.

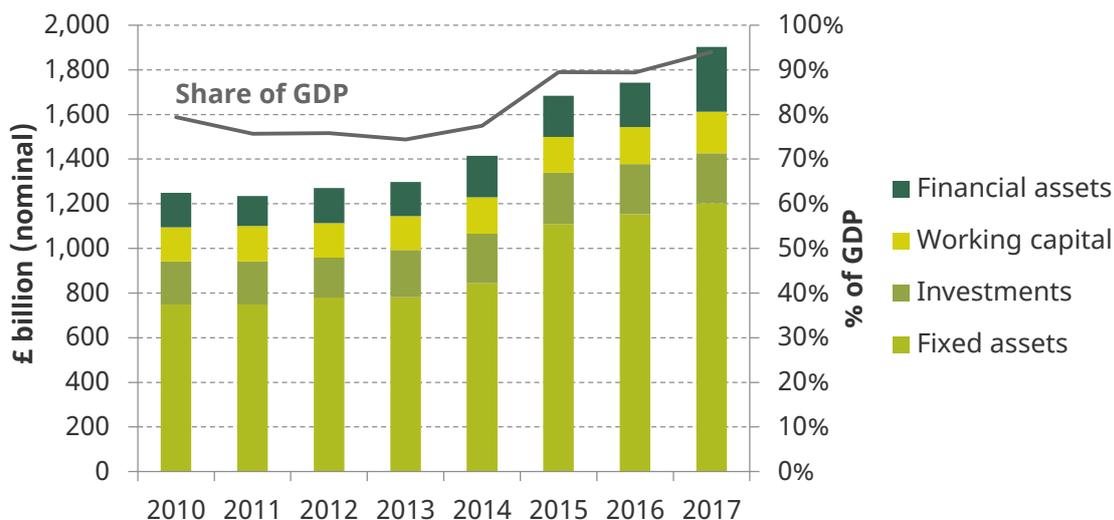
**Table 6.1. Summarised Whole of Government Accounts 2016–17 (£ billion)**

<b>Balance sheet</b>		<b>Revenue and expenditure</b>	
<b>Assets</b>	1,903	Revenue	721
Liabilities	(4,324)	Expenditure	(819)
<b>Net liabilities</b>	<b>(2,421)</b>	<b>Accounting (loss) for the year</b>	<b>(98)</b>
<b>Cash flows</b>		<b>Change in financial position</b>	
Operating cash inflow	70	Accounting (loss) for the year	(98)
Investing cash outflow	(53)	Pension revaluations	(361)
Interest and similar outflows	(33)	Asset revaluations	40
Financing cash inflow	19	Other movements	(16)
<b>Change in cash balances</b>	<b>2</b>	<b>Change in financial position</b>	<b>(435)</b>

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

Source: HM Treasury, *Whole of Government Accounts 2016–17*. These, and those for earlier years, can be downloaded from <http://www.gov.uk/government/collections/whole-of-government-accounts>.

**Figure 6.2. Total assets, March 2010 to March 2017 (£ billion and % of GDP)**



Source: HM Treasury, *Whole of Government Accounts 2016–17* and earlier years.

This increase looks more significant than it is.

As illustrated in Figure 6.2, the value of recorded assets increased by more than 50% between March 2010 and March 2017. As a share of national income, assets grew by 15 percentage points.

As summarised in Table 6.2, half of the increase between 2010 and 2017 arises from the incorporation of additional public bodies into the WGA, principally Network Rail in 2014 and 2015.

A further £83 billion is from revaluations net of impairments.

Net additions included £103 billion (£15 billion a year) added to fixed assets, as discussed in more detail in Section 6.3, and £112 billion more in financial assets, as discussed in Section 6.5.

**Table 6.2. Change in total assets over the seven years to 31 March 2017 (£ billion)**

	Fixed assets	Investments	Working capital	Financial assets	Total
31 March 2010	749	192	153	155	1,249
More public bodies <sup>a</sup>	282	12	1	24	319
Net revaluations <sup>b</sup>	68	-	15	-	83
Net additions	103	20	17	112	252
<b>31 March 2017</b>	<b>1,202</b>	<b>224</b>	<b>186</b>	<b>291</b>	<b>1,903</b>

<sup>a</sup> Network Rail £306 billion and other public bodies of £13 billion.

<sup>b</sup> Revaluations of £145 billion less impairments and write-downs of £62 billion.

Source: HM Treasury, *Whole of Government Accounts 2016–17* and earlier years; ICAEW calculations.

## International comparison

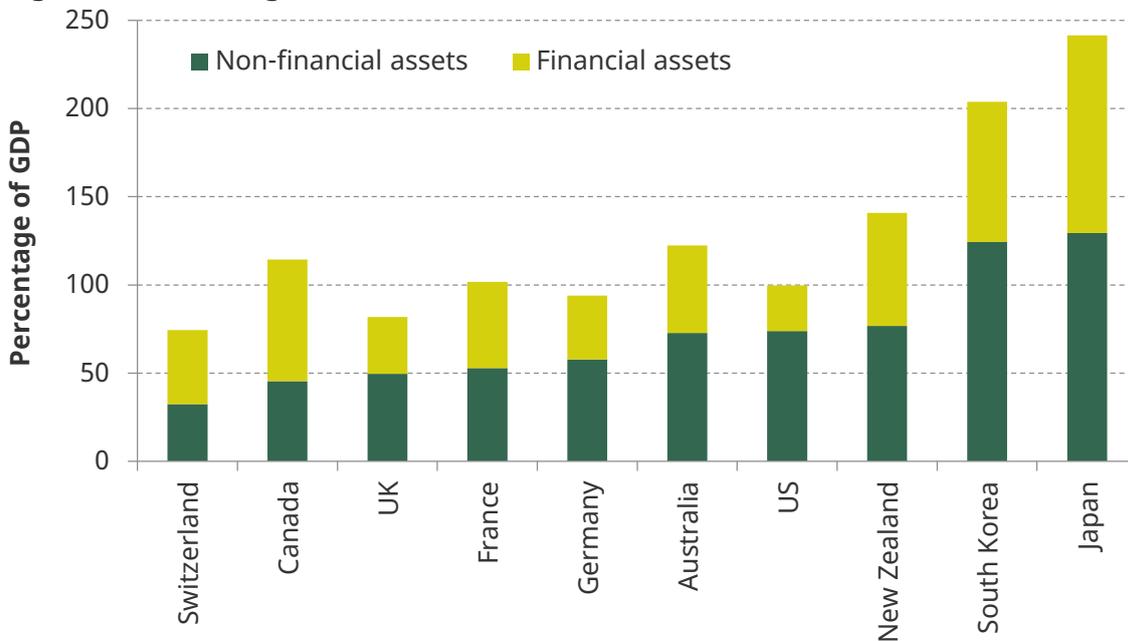
Figure 6.3 compares the assets held by general government (comprising central government, state/provincial government and local authorities) of several countries in proportion to the size of their respective economies.

The amounts are based on National Accounts statistical returns, as the UK is the only country that produces integrated financial statements like the WGA that encompass the entire public sector.

Financial assets can vary significantly depending on each country's fiscal position and financial investment strategy.

The UK's non-financial assets are similar to those of Canada, France and Germany at around 50% of GDP. However, countries such as the US and Australia hold non-financial assets worth 75% of their national income, while Japan and South Korea have non-financial asset holdings that exceed the UK's total assets as a share of the economy.

**Figure 6.3. General government assets at 31 December 2016 (% of GDP)**



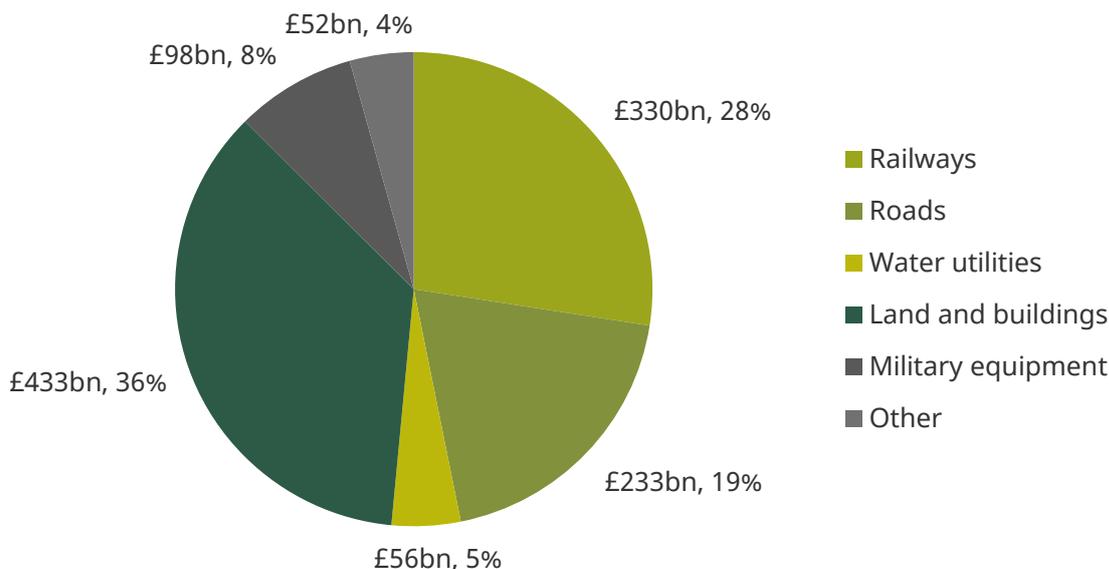
Note: Non-financial assets here comprise fixed assets, inventories and non-financial investments. Financial assets include receivables and financial investments in addition to cash. The UK's general government assets of 82% of GDP at 31 December 2016 are different from assets in the WGA of 94% of GDP at 31 March 2017 due to the exclusion of public corporations from the former and differences in land valuation.

Source: IMF, *Government Financial Statistics 31 August 2018*; Federal Statistics Office of Germany; Japan Cabinet Office.

## 6.3 Fixed assets

At 31 March 2017, the public sector reported tangible and intangible fixed assets with a book value of £1,202 billion, equivalent to 59% of GDP.

**Figure 6.4. Fixed assets at 31 March 2017 (£ billion and % of fixed assets)**



Note: Railways includes Transport for London infrastructure of £19 billion.

Source: HM Treasury, *Whole of Government Accounts 2016–17*; accounts of government departments.

As illustrated by Figure 6.4, just under half of these relate to transport infrastructure such as the road and railway networks, while a further third or so are in the form of land and buildings.

The strategic road network and local roads not only enable people to get around, but also are essential to economic activity. Land and buildings include schools and hospitals needed to deliver education and health services and social housing for 4.5 million people, as well as central and local government offices and facilities. Military equipment includes tanks, ships, aircraft, missiles and other military systems to support the defence of the realm, while publicly owned water utilities provide water and sewerage services to Scottish and Northern Irish households.

Public sector bodies are estimated to own approximately 2 million hectares out of the 24 million hectares that make up the UK, including 450,000 hectares of forest, 220,000 hectares owned by the Ministry of Defence (MoD) and 140,000 hectares owned by the Crown Estate.

As part of its Balance Sheet Review, the government intends to evaluate its stock of fixed assets, the income they generate, and whether they are being used efficiently and in line with policy priorities. It states: ‘The government’s Balance Sheet Review is intended to help release resources for further investment in public services and improve the sustainability of the public finances’.<sup>2</sup>

Assets can be used to support policy priorities directly. For example, the government has been keen to identify land to build new housing, with the Ministry of Housing,

<sup>2</sup> Government Actuary’s Department, ‘Autumn Budget 2017: a GAD technical bulletin’, 2017, <https://www.gov.uk/government/publications/autumn-budget-2017-a-gad-technical-bulletin>.

Communities and Local Government in England aiming to release land for 160,000 new homes over the five years to 2020. Managing the government's estates to free up land in the more promising sites would have a clear impact on this target, and play a part in helping halt the decline in homeownership rates among the young (see Chapter 9).

Government assets can also be deployed indirectly to support a range of policy priorities. Some assets could be sold and the cash used to pay for other programmes. Proceeds might also be used to invest in other assets or to settle or fund liabilities.

In practice, the majority of public assets are integral to the delivery of public services and so are difficult to sell. Even in the case of assets that are not essential to public service delivery, sales are not always straightforward. Many 'non-core' assets are in the form of forest, open spaces, heritage buildings and government-owned art and museum collections, and proposed sales can generate substantial political opposition. For example, a proposal in 2011 to raise £350 million by selling half of the publicly owned forests in England was reversed in the face of strong public opposition.

Even where assets are surplus to requirements, there can be practical difficulties in establishing ownership before they can be sold. Many public assets are on sites that were originally donated or are subject to restrictive covenants. In particular, many state schools are built on land owned by religious institutions.

In other cases, the ownership of assets may be uncertain or disputed. An example is the St Bartholomew's Hospital site in the City of London – although the main hospital was closed in the 1990s, most of the site it occupied could not be sold and so continues to be used for public purposes.

It is important to understand that the book values at which fixed assets are recorded in the WGA are not necessarily the same as the amount they could be sold for. For most other organisations preparing accounts, market values of fixed assets are usually higher than the depreciated historical cost book values at which they are usually recorded if for no other reason than inflation.

The government's approach of revaluing land to an estimate of current market value avoids this issue for land, which in theory should be capable of being sold for a similar price to its recorded book value.

However, the government's use of an unusual accounting policy – depreciated replacement cost – for infrastructure, equipment and other fixed assets can result in the opposite problem. Many fixed assets are recorded in the books at more than they could be sold for, one of the drivers behind the £62 billion of impairments and write-downs recorded in the WGA over the seven years to 31 March 2017.

This accounting approach is discussed further in Box 6.2.

### Box 6.2. Revaluing fixed assets

Most preparers of financial statements carry fixed assets at **depreciated historical cost**, which is the amount incurred on the original acquisition or construction, less accumulated depreciation to reflect age and usage. It is not adjusted for inflation.

The government instead chooses to revalue its fixed assets each year. Land is updated to estimated market values, with external valuations carried out every five years. Most other fixed assets (including buildings and equipment) are uplifted to an estimate of the cost of replacing them at current prices, adjusted for depreciation.

The latter approach is known as **depreciated replacement cost** and it enables assets acquired or constructed a long time ago to be reported at a current value. It also has the benefit of aligning the accounting book values with the amounts recorded in National Accounts statistical returns, while requiring government departments to assess the value of their fixed asset portfolios each year, potentially providing useful information that can be used in managing those assets.

However, there are some significant disadvantages.

Replacement costs can be difficult to estimate and so are inherently less certain than the original cost of acquiring an asset. While the depreciated historical cost approach tends to value assets at less than they could be sold for, depreciated replacement cost is more likely to overvalue assets, leading to write-offs rather than gains when assets are disposed of. Some transport network enhancements have to be impaired immediately, because their individual cost is greater than the value they add to the overall network. Where an asset has been the subject of an upward revaluation, the depreciation charges recorded over the life of an asset will exceed the original cost of buying it.

One rationale for using depreciated replacement cost is that it can act as a proxy for market value. Unfortunately, this is not the case for most fixed assets owned by government – either because a ready market does not exist or because a rational purchaser would not pay that amount. For example, it would not be possible to sell the national railway network for its £289 billion book value based on the financial returns available from operating it.

Another issue is that local authorities continue to use depreciated historical cost for road infrastructure, causing a mismatch within the WGA. The Treasury estimates that local roads would be recorded at least £53 billion higher if depreciated replacement cost were used.<sup>a</sup>

Using depreciated replacement cost creates unnecessary complexity in government accounting. A substantial proportion of the value of fixed assets relates to the land on which assets are built, so as long as land is updated to its current value, using depreciated historical cost for other fixed assets would be simpler and would enable more transparency and accountability. For example, impairments that deserve proper scrutiny – actual losses compared with the original cost – would no longer be obscured by technical impairments resulting from this choice of accounting policy.

<sup>a</sup> Page 152 of HM Treasury, *Whole of Government Accounts 2016–17*.

## Infrastructure, land and buildings

Table 6.3 sets out the main components of economic infrastructure, land and buildings.

Economic infrastructure on the public balance sheet almost entirely relates to transport infrastructure, with the exception of publicly owned water and sewerage utilities in Scotland and Northern Ireland.

The remainder of the UK's economic infrastructure – electricity, gas, water and telecommunications networks and most air transport infrastructure – is in the private sector, albeit subject to government regulation.

The valuation of the railway network illustrates how the choice of accounting policies can make a significant difference to the values at which assets are recorded. Network Rail itself records the rail network at £56 billion, on a value-in-use basis, reflecting the track access fees it can charge. This contrasts with the £289 billion book value in the WGA, which is the estimated current value of rebuilding the network, less depreciation to reflect the age and usage of the assets concerned. It could be argued that the market value of the railway network is actually negative, as without public subsidies, in the order of £7 billion a year, it would make significant losses. However, the government is able to take account of the value of the railways to the overall economy in justifying the carrying value it uses in the WGA.

Land and buildings include 1.9 million homes owned by local authorities in Great Britain, with a value of approximately £88 billion or around £46,000 per dwelling. This includes

**Table 6.3. Economic infrastructure, land and buildings as at 31 March 2017 (£ billion)**

<b>Economic infrastructure</b>		<b>Land and buildings</b>	
National railway network <sup>a</sup>	292	Local government <sup>d</sup>	220
Strategic road network	148	Whitehall departments	48
Local roads <sup>b</sup>	124	Academy schools	46
Water utilities <sup>c</sup>	59	Department of Health	43
Transport for London	19	Ministry of Defence	32
Other public transport	7	Scottish and Welsh governments <sup>e</sup>	10
Understatement <sup>b</sup>	(53)	Public corporations and other	21
<b>Economic infrastructure</b>	<b>596</b>	<b>Land and buildings</b>	<b>420</b>

<sup>a</sup> Network Rail £289 billion and High Speed 1 £3 billion.

<sup>b</sup> Northern Ireland strategic and local roads £26 billion and England, Scotland and Wales local roads £98 billion at estimated depreciated replacement cost; the latter are recorded at depreciated historical cost of £45 billion, a £53 billion understatement.

<sup>c</sup> Scottish Water £56 billion and Northern Ireland Water £3 billion.

<sup>d</sup> Includes social housing and local authority schools in addition to local government offices and other facilities.

<sup>e</sup> Includes NHS Scotland and NHS Wales assets of £4 billion.

Source: HM Treasury, *Whole of Government Accounts 2016–17* and other public accounts for 2016–17.

1.6 million homes in England, for which the average rent is £380 per month, at an average gross rental yield of 10%.

Whitehall departments own land and buildings with a recorded value of £48 billion. Many of these properties will be transferring over time to a new executive agency set up to manage general-purpose property. This new body, known as the Government Property Agency, came into existence on 1 April 2018 with the intention of managing the property portfolio more commercially. This includes a strategy to co-locate government departments together in 'hubs' comprising modern office buildings in cities around the UK. It is envisioned this will reduce the space required per public employee and free up spare capacity to be sold or leased out to the private sector.

A significant change within the public balance sheet has been the transfer of schools from local government to central government as they have converted to academy status. Unfortunately, poor financial controls at the Department for Education have meant that it has been unable to report a reliable value for academy schools transferred during 2016–17. The WGA included academies as at 31 August 2016, which means schools that transferred out of local authorities between September 2016 and March 2017 have been temporarily 'lost' from the balance sheet. This is not material to the government's overall financial position, but it represents a significant failure of financial control. It has resulted in the Comptroller and Auditor General qualifying his audit opinion.<sup>3</sup>

Land and building used for health purposes include hospitals, GP surgeries and ambulance stations across the country, including £11 billion through the Private Finance Initiative (PFI) and £1 billion in 'donated assets'.

Government has sought to encourage departments to identify surplus property that either could be sold to generate cash to reinvest in public services or could be used for new housing, a policy priority. Only a very small element of departmental assets have been identified so far – for example, the Department of Health has identified £23 million or 0.05% of its fixed assets as surplus to requirements, while the Ministry of Defence has identified £26 million or 0.08% of its fixed assets as surplus. There are more opportunities with assets owned by local government, with British local authorities reporting £2 billion or approximately 1% of their fixed assets as potentially surplus to requirements.<sup>4</sup>

### **Other fixed assets and assets under construction**

Other fixed assets and assets under construction are set out in Table 6.4. This includes military assets of £98 billion (in addition to £32 billion of MoD properties above in Table 6.3). These are discussed in more detail in Chapter 7. Most other fixed assets relate to the delivery of public services, including IT equipment, systems and software, vehicles, and office furniture and fittings across central and local government.

Assets under construction included £10 billion for the Elizabeth Line (Crossrail) in London at 31 March 2017. This is two-thirds of the budgeted cost of £15 billion forecast to be incurred by the originally scheduled opening of the Elizabeth Line in December 2018. Costs incurred on the estimated £55 billion High Speed 2 project were still less than £1 billion at this point.

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<sup>3</sup> Page 155 of HM Treasury, *Whole of Government Accounts 2016–17*.

<sup>4</sup> CIPFA, *Local Authority Asset Statistics 2017*.

**Table 6.4. Other fixed assets and assets under construction (£ billion)**

Other fixed assets	Book value	Assets under construction	Book value
Defence equipment and systems <sup>a</sup>	71	Ministry of Defence	27
Other equipment and vehicles	19	Transport for London	19
Furniture, fittings and other	17	Other transport projects	10
Software and other intangibles	11	Schools, hospitals and other	13
<b>Other fixed assets</b>	<b>118</b>	<b>Assets under construction</b>	<b>69</b>

<sup>a</sup> Military equipment £33 billion, transport equipment £11 billion, plant, machinery and IT equipment £4 billion, and systems, software and technological designs £23 billion.

Source: HM Treasury, *Whole of Government Accounts 2016–17* and other public sector accounts for 2016–17.

Other fixed assets include £34 billion in intangible assets, such as software and other non-hardware elements of developing computer systems and technological designs. The majority of these intangible assets relate to military equipment, as discussed in Chapter 7.

Fixed assets include £45 billion of leased assets not owned by the government, but which it has the right to use under leases or that are embedded within long-term contracts. The latter include schools, hospitals, service housing, military equipment and other assets constructed under PFI. These assets (and the related obligations<sup>5</sup>) are gradually declining as the government now enters into few new PFI contracts. Between 1997 and 2010, on average 55 contracts were signed a year. Since May 2010, 84 contracts have been signed, an average of 12 a year.<sup>6</sup>

### Off-balance-sheet resources

The government is also able to benefit from resources that are not recorded on the balance sheet. These include a number of off-balance-sheet assets as described in Box 6.3, but these are relatively small in comparison with the unmeasured value of resources that generate value for the government in the form of future tax revenues.

Examples of the latter include the benefits a stable legal system has for economic activity; the contracts the government has with suppliers that enable it to deliver public services; the financial benefits that treaties such as the WTO, NATO and the EU bring to the UK economy (and hence tax revenues); the government's rights to regulate certain businesses such as utilities; its rights to grant planning permissions for development; and the right to compulsory purchase of property for public purposes.

The most important group of these intangibles can be collectively described as the productive power of the UK economy that supports tax revenues. This is akin to goodwill

<sup>5</sup> Obligations under finance lease and PFI contract liabilities amounted to £192 billion at 31 March 2017, with £43 billion in liabilities relating to the assets and £149 billion in service charges and future interest.

<sup>6</sup> <https://www.gov.uk/government/publications/private-finance-initiative-and-private-finance-2-projects-2017-summary-data>.

in a commercial context: it is the difference between the total value of individual assets and the value of the overall enterprise – in this case ‘UK plc’.

In practice, the government is restricted in its ability to control or utilise many of these intangible resources as it is limited by legal, political and other constraints. Entering into a particular treaty might benefit tax revenues, but other factors could offset any gain. Planning decisions can be challenged in the courts, while compulsory purchase powers are subject to restrictions on their use and political considerations.

### **Box 6.3. Off-balance-sheet assets**

Certain assets are excluded from the balance sheet, even though they meet the accounting definition of an asset.

Leased assets of £18 billion are not recorded because of an exemption under current accounting standards, which treat ‘operating leases’ differently from other assets. These are leases where the majority of the financial risks and rewards of an asset accrue to the legal owner rather than to the user of the asset. This inconsistency in the accounting rules will cease in 2019, and these assets will be brought onto the WGA balance sheet, together with the associated lease liabilities.

The government does not record some assets in the WGA that it should do under accounting standards. It excludes housing association properties in the order of £70 billion, further education colleges of £12 billion and trust ports of £5 billion, together with an unquantified amount of assets used by the armed forces embedded inside contracts between the MoD and the defence industry.

The exclusion of housing associations was based on planned changes in the law that reduce the level of government influence over them, made specifically to change their status from being part of the public sector to being in the private sector. Further education colleges and trust ports have not been included in order to minimise differences with public sector assets reported in the statistics-based National Accounts.

The government also excludes the Royal Bank of Scotland (RBS) from the WGA on the grounds that incorporating the operations of a large commercial bank would distort the financial picture presented.

Neither accounting nor statistical definitions of assets include the assets of universities, charities or other bodies that are used to deliver public services, even where these bodies are almost entirely reliant on public funding. Generally, this is because although the government has significant influence over how these assets are used, this is not the same as the level of control that would require them to be consolidated within the WGA or count as public bodies in the National Accounts.

## 6.4 Capital investment

Capital expenditure and net additions to fixed assets are summarised in Table 6.5.

Capital expenditure of £55 billion in 2016–17 was equivalent to 2.8% of GDP. This is less than 7% of non-capital expenditure of £819 billion for the same period. Set against this was depreciation of £33 billion and disposals of £4 billion, leaving net additions at £18 billion.

Investment in transport infrastructure of £17 billion included £6 billion invested in the strategic road network and £4 billion in local roads. Of the £7 billion invested in railway and Tube projects, £4 billion went into the national railway network, with £2 billion on the Crossrail project in London and £1 billion on High Speed 2.

Net additions of £8 billion to transport assets (after depreciation and disposals) accounted for almost half of net capital additions. However, these additions are worth just over 1% of the £589 billion value of the government's portfolio of transport assets, reflecting the incremental amounts being invested in roads and railways in the UK.

Investment in social housing, schools, hospitals and general-purpose central and local government property, including offices, was offset by depreciation and disposals.

Although capital expenditure (including Network Rail) was similar in 2009–10 and 2016–17 – at £54 billion and £55 billion respectively – this corresponds to a real-terms cut of 9%.

Capital expenditure in the WGA can be reconciled with the public sector investment measures reported in the National Accounts, as shown in Table 6.6.

**Table 6.5. Capital expenditure in 2016–17 (£ billion and % of GDP)**

	Capital expenditure	Depreciation	Disposals	Net additions	% of GDP
Transport infrastructure	17	(9)	-	8	0.4%
Land and buildings <sup>a</sup>	14	(11)	(3)	-	0.0%
Defence equipment	10	(4)	-	6	0.3%
Other tangible assets	10	(6)	(1)	3	0.2%
Software and other intangibles	4	(3)	-	1	0.0%
<b>Additions during year</b>	<b>55</b>	<b>(33)</b>	<b>(4)</b>	<b>18</b>	<b>0.9%</b>
<b>% of GDP</b>	<b>2.8%</b>	<b>(1.7%)</b>	<b>(0.2%)</b>	<b>0.9%</b>	

<sup>a</sup> Includes £3 billion on new social housing, £2 billion in capital works on existing social houses and £4 billion on schools and hospitals.

Source: HM Treasury, *Whole of Government Accounts 2016–17* and other public sector accounts for 2016–17.

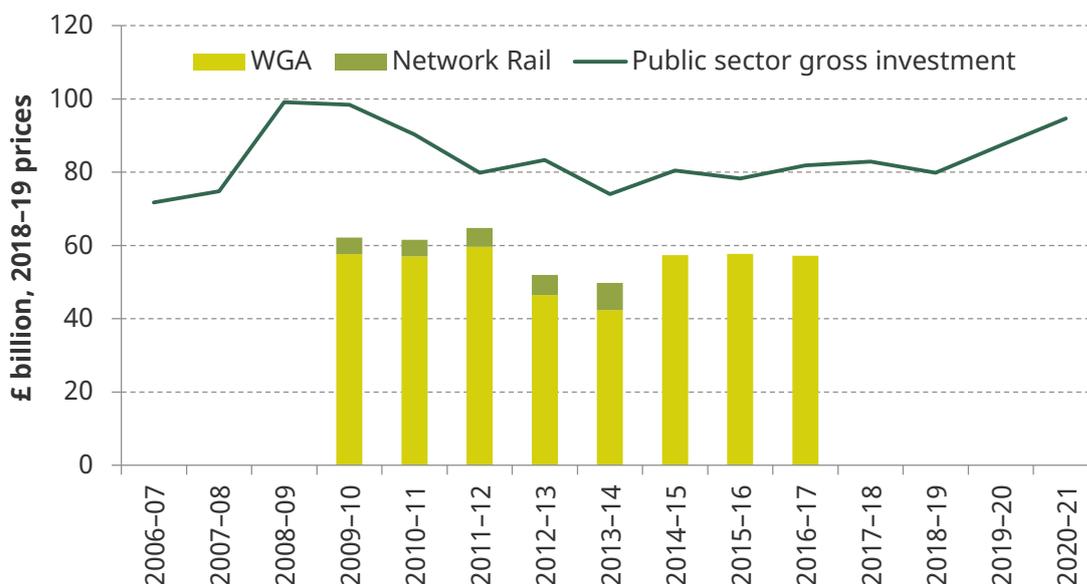
**Table 6.6. WGA capital expenditure and public sector investment in 2016–17**

	£ billion
<b>Capital expenditure in WGA</b>	<b>55</b>
Student loans	11
Capital grants <sup>a</sup>	9
Housing associations (excl. £3 billion in capital grants)	6
Research and development	3
Less: fixed asset disposals	(5)
<b>Public sector gross investment</b>	<b>79</b>
Less: depreciation in the National Accounts	(41)
<b>Public sector net investment</b>	<b>38</b>

<sup>a</sup> Capital grants included £3 billion to housing associations, £1 billion to universities and research institutions, £2 billion to other UK recipients and £3 billion in official development assistance.

Source: HM Treasury, *Whole of Government Accounts 2016–17*; Office for Budget Responsibility, *Economic and Fiscal Outlook: March 2016*; Office for National Statistics, *Public Spending Statistics*, July 2017.

The principal differences relate to student loans (discussed in Section 6.5) and capital grants. Housing associations have subsequently been returned to the private sector. Amounts for disposals and depreciation are also different between the WGA and the National Accounts.

**Figure 6.5. Capital expenditure and investment since 2006–07 (in 2018–19 £ billion)**

Note: Capital expenditure on a WGA basis is not available prior to 2009–10.

Source: HM Treasury, *Whole of Government Accounts*, 2009–10 through 2016–17 (Network Rail financial statements for periods before its capital expenditure was included in the WGA); Office for Budget Responsibility, *Public Finances Databank*, 3 September 2018.

Figure 6.5 provides an analysis of both public sector gross investment (since 2006–07 and forecasts to 2020–21) and capital expenditure (between 2009–10 and 2016–17).

These illustrate slightly different patterns for the period in which we have data for both. Public sector gross investment increased in response to the financial crisis, but then fell – initially as a result of non-capital expenditure elements, with lower capital expenditure following in 2012–13 and 2013–14.

Forecasts for the next four years are for the government to increase investment by £13 billion between 2016–17 and 2020–21 in 2018–19 prices, a real-terms increase of 16% in public sector gross investment over that period (although still below the level seen in 2009–10).

Only £3 billion of the additional investment planned for 2020–21 has been allocated to spending departments so far, mostly to the Department for Transport to cover planned investment in the High Speed 2 railway link between London and Birmingham.

Some £7 billion is included in a ‘National Productivity Investment Fund’ controlled by the Treasury. This is a budgetary heading rather than a fund, which for 2020–21 includes £3.4 billion in additional funding for housing, £2.0 billion extra for research and development, £1.3 billion more for transport and £0.3 billion for digital infrastructure.

There is a significant risk that not all of planned capital investment will be made, especially as much of the additional plans have yet to appear in the National Infrastructure Pipeline. Underspensing has been an issue in the past, as researchers from IFS have reported.<sup>7</sup>

More important is the question of whether all of this investment will provide high value for money, a particular issue for large complex infrastructure and defence projects that involve significant risk.<sup>8</sup>

## 6.5 Investments, financial assets and working capital

Financial and other assets in the WGA amounted to £701 billion at 31 March 2017, just over a third of the total assets in the balance sheet. Investments amounted to £224 billion, there was £291 billion in cash and other current financial assets, and £186 billion in receivables and other working capital assets.

The majority of investments and financial assets have arisen from the delivery of public policy objectives. These include student loans used to support students undertaking higher education in England and Wales, loans and cash advances provided by the Bank of England to support the financial sector, foreign reserves used to support sterling, and stakes in the International Monetary Fund and other international organisations.

The main exceptions are the pension fund investments of local authorities and some other public bodies (which are not included in assets as they are instead netted against

<sup>7</sup> R. Crawford, P. Johnson and B. Zaranko, *The Planning and Control of UK Public Expenditure, 1993–2015*, IFS Report R147, 2018, <https://www.ifs.org.uk/publications/13155>.

<sup>8</sup> Department for Transport, ‘Annual update on Crossrail’, Written Statement to Parliament, 24 July 2018, <https://www.gov.uk/government/speeches/annual-update-on-crossrail-2018>.

liabilities), the assets of the Pension Protection Fund, and investment properties owned by the Crown Estate, Network Rail and local authorities. These behave more like traditional investments, held by government with the aim of generating financial gain or in order to provide an income stream to match liabilities or future financial commitments.

Table 6.7 sets out the principal elements of investments and financial assets at 31 March 2017.

**Table 6.7. Investments and financial assets at 31 March 2017 (£ billion)**

<b>Investments</b>		<b>Financial assets</b>	
Student loans	67	Foreign reserves	104
Long-term loans and deposits	32	Short-term loans and deposits	69
Equity investments <sup>a</sup>	53	Repurchase agreements	51
Derivatives and other	32	Derivatives and other	29
International Monetary Fund	22	Cash and cash equivalents	28
Investment property	18	Gold holdings	10
<b>Investments</b>	<b>224</b>	<b>Financial assets</b>	<b>291</b>

<sup>a</sup> RBS £20 billion, Lloyds £1 billion, European Investment Bank £10 billion, Pension Protection Fund £23 billion.

Source: HM Treasury, *Whole of Government Accounts 2016–17*.

One financial asset that has attracted significant attention is the government's student loan book, as described in Box 6.4.

Loans and deposits include £20 billion of mortgages advanced by Bradford & Bingley, Northern Rock and other nationalised banks and retained in a 'bad bank' after the financial crisis. These are gradually being sold off, with £16 billion disposed of during 2016–17.

There is also £55 billion in low-cost loans provided to high-street lenders through the Bank of England's Term Funding Scheme; these are due to be repaid by 2020–21.<sup>9</sup>

Equity investments include a £20 billion investment in RBS, a bank that the government rescued during the financial crisis. The initial loss on this investment was £19 billion, a consequence of the decision to bail out RBS to avoid contagion in the banking sector. Subsequently, once this risk was confidently deemed to be past, the government should have sold off the shares in an orderly, gradual process – regardless of whether the price at that moment in time was higher or lower than it had originally paid. Instead, the government has held the investment in the hopes that the share price would recover. However, so far this has not come to pass; instead, the market value has fallen by £6.5 billion since 31 March 2012, a 24% reduction over five years.

<sup>9</sup> A further £72 billion was lent out in 2017–18, which is due to be repaid by 2021–22.

### Box 6.4. Student loans

Unlike with most other loans, student loan repayments are linked to graduates' earnings and the system is explicitly designed to insure graduates against low earnings. Most graduates – around 80% – will not subsequently earn enough to repay their debt in full.<sup>a</sup> To reflect this, student loans with a face value of £97 billion have been impaired by £30 billion to allow for loans that are expected not to be repaid, together with implicit subsidies in some older loans. New student loans issued during 2016–17 amounted to some £14 billion, but were immediately impaired by £4 billion.<sup>b</sup>

The student loan system is similar in economic effect to a graduate tax, but the government was able to meet the accounting and statistical criteria for student loans to be presented as assets in the WGA and as investment spending in the National Accounts.

The government intends to sell part of the student loan book in order to reduce public sector net debt. In the first part of this sale, in December 2017, the government sold student loans with a face value of £3.5 billion for proceeds of £1.7 billion. This was a 50% discount to face value that resulted in an accounting loss of £0.9 billion,<sup>c</sup> although the National Audit Office estimates that the economic loss was lower – £0.6 billion – when using a different model for calculating expected repayments than that used for accounting purposes.<sup>d</sup>

If future sales result in similar losses, then the government would achieve a £12 billion reduction in public sector net debt at a net cost of £4 billion. This is not a sensible use of public money: if the asset is worth more when held by the public sector than when held by the private sector, then the public sector should continue to hold it. In the case of student loans, there are good reasons to think that these are best retained by government: much of the difference between the government's valuation and the lower sale price is driven by the lower cost of borrowing enjoyed by the government, which is helped even more by the current low-interest-rate environment.

<sup>a</sup> C. Belfield, J. Britton and L. van der Erve, 'New higher loan repayment threshold is a big (and expensive) giveaway to graduates', IFS Press Release, 3 October 2017, <https://www.ifs.org.uk/publications/9965>.

<sup>b</sup> This was an impairment to face value of 29%. These loans have subsequently been impaired to 45% of their face value, principally because of an increase in the repayment threshold.

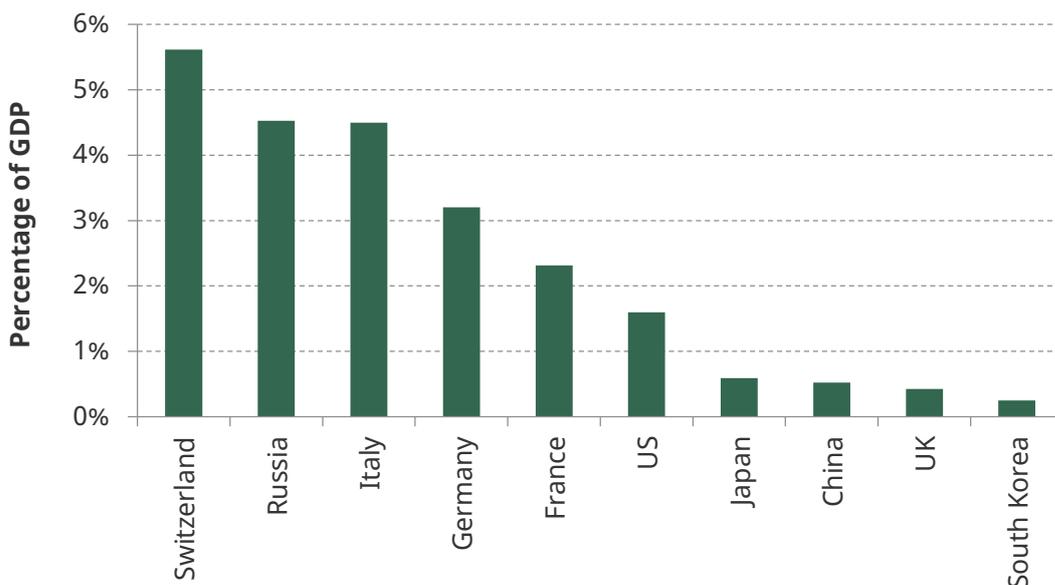
<sup>c</sup> These loans had previously been impaired by 26% to £2.6 billion.

<sup>d</sup> National Audit Office, *The Sale of Student Loans*, 2018, <https://www.nao.org.uk/report/the-sale-of-student-loans/>.

The government is expecting to record a write-down in 2018–19 in its investment in the European Investment Bank. Although this is valued at £10 billion in the WGA at 31 March 2017, the UK has subsequently agreed with the EU – as part of the 'divorce settlement' – that it will only recover its original £3 billion investment and will not receive its share of profits accumulated while the UK has been a shareholder.<sup>10</sup>

<sup>10</sup> ICAEW, 'Analysing the EU exit charge – an update', July 2018, <https://www.icaew.com/technical/economy/brexit/analysing-the-eu-exit-charge>.

**Figure 6.6. Gold holdings (30 June 2018 holdings as % of GDP)**



Note: US (8,133 tonnes), Germany (3,370), Italy (2,452), France (2,436), Russia (1,944), China (1,843), Switzerland (1,040), Japan (765), UK (310), South Korea (104). Not shown: IMF (2,814 tonnes), European Central Bank (505 tonnes), Netherlands (613), other EU countries (1,854).

Source: World Gold Council, Reserves Statistics, 2018 Q2; IMF, World Economic Outlook Database, April 2018.

Foreign reserves comprise interest-bearing government securities issued by the US, Japan and other major economies, principally in the EU. The UK has been increasing its level of foreign reserves over the last few years, while the fall in the pound following the EU referendum has also increased their reported value when translated back into sterling. There is a risk to holding these securities from movements in bond prices and exchange rates, although some of these exposures are hedged using derivative financial instruments. On the other hand, these assets could also be used to hedge government purchases denominated in foreign currencies; Chapter 7 discusses this in the case of the Ministry of Defence.

Although London has the largest stores of gold of any city in the world, very little of this is owned by the UK government. No longer needed to back sterling, successive administrations have reduced gold holdings, culminating in Gordon Brown’s decision in 1999 to sell 415 tonnes of the 715 tonnes then owned. The UK currently owns 310 tonnes of gold, worth £10 billion at 31 March 2017. This is equivalent to 0.4% of GDP, less than for other countries, as illustrated by Figure 6.6.

### Working capital assets

Working capital assets at 31 March 2017 amounted to £186 billion, comprising £122 billion in taxes owed and accrued, £52 billion in trade and other receivables, £9 billion in inventories and £3 billion in assets held for sale. These were net of £11 billion in bad debt provisions for taxes owed or accrued and £10 billion in provisions against trade and other receivables.

Working capital assets are necessary to the operation of any organisation. However, they often involve an opportunity cost as many do not earn any financial return. Because of

this, most businesses seek to reduce their investment in working capital to the minimum necessary to operate effectively. Governments are no different in principle – every amount unnecessarily tied up in working capital assets could be better used elsewhere.

Although taxes owed and accrued for UK central and local government of £122 billion do not appear unreasonable at 2.3 months of total tax revenues, it should be possible to reduce this further. The government continues to look at ways to accelerate payments further where it can, with electronic filing (Making Tax Digital), improved compliance, and plans to accelerate the payment of corporation tax.

There are also opportunities to accelerate the collection of trade and other receivables, such as making it easier to collect court fines or to pay for local services.

### **Public sector pension schemes**

The balance sheet includes £319 billion in pension fund assets of local government and other public sector funded pension schemes. Thanks to strong investment returns, these had grown by £53 billion or 20% over the 2016–17 financial year.

These ring-fenced investments are not included on the asset side of the balance sheet, but are instead netted against the £457 billion of obligations that they are set aside to cover. They represent 70% of the related liabilities, reducing the net obligation to £138 billion.

By contrast, central government pension schemes for workers including civil servants, health workers, armed forces, teachers and former Royal Mail workers are unfunded, with no assets set aside to meet the estimated £1,697 billion of accumulated pension entitlements. Instead, the payment of these pensions will come from the future contributions of employees and future tax revenues.

When combined with public debt and other unfunded government liabilities, this represents a significant transfer of value between generations.

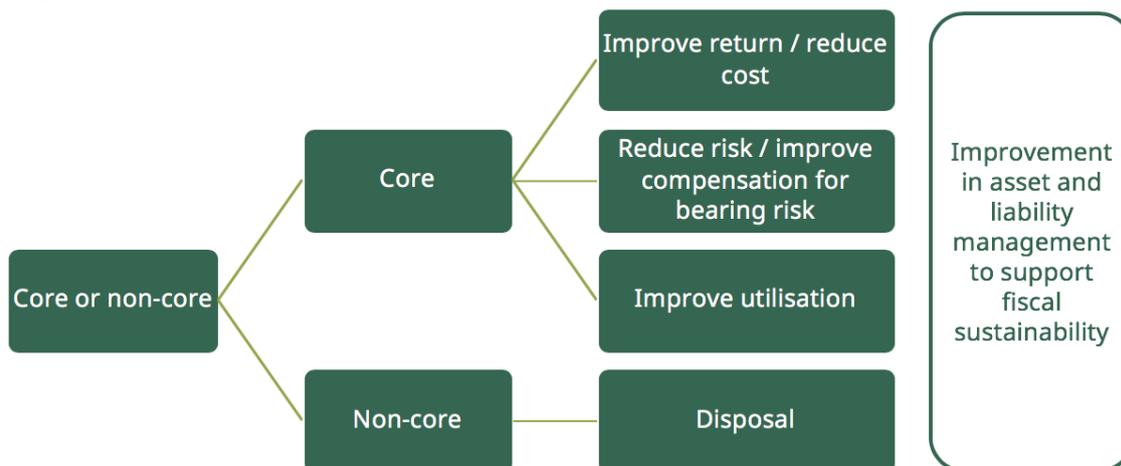
## **6.6 The Balance Sheet Review and the potential for a public investment and asset management strategy**

There has been an increased focus on how to track and manage public assets more effectively over the last couple of decades.

Government departments have compiled registers of the assets they own, and local authorities have followed suit in the past couple of years. The advent of the WGA in 2012 has helped the government to understand better the resources that are available to public bodies to achieve policy objectives.

These developments mean that it is now possible to go further, and the government initiated a Balance Sheet Review last year to look at how it can manage public assets and liabilities more effectively. The government intends to deliver a progress report on this review alongside this year's Autumn Budget.

**Figure 6.7. HM Treasury Balance Sheet Review**



Source: HM Treasury, 'Balance Sheet Review', 2018, [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/718021/FR\\_AB\\_132\\_05 - 03 Balance Sheet Review presentation.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/718021/FR_AB_132_05_-_03_Balance_Sheet_Review_presentation.pdf).

As part of this review, the government plans to take stock of the assets that it holds and how these could be used to generate greater value, whether from more efficient utilisation, generating commercial income or selling off non-core assets.

The Balance Sheet Review provides an opportunity for the government to consider its overall strategy around public assets. Should government be in the business of owning certain assets, or would they be better situated in the private or third sector? Is it investing enough in its assets, and in the right places? Should it be investing for financial returns and not just for public service delivery? Is it better to pay off public debt or establish funds earmarked for specific liabilities that continue to grow?

In the past, these questions have been considered only on a piecemeal basis, when at all. For example, the decision to transfer inland waterway assets to a charitable trust came out of a review of government organisation, rather than as part of a more comprehensive review of public assets and liabilities.

Figure 6.7 illustrates the review’s approach to evaluating assets.

Assets held to achieve a policy or financial purpose (core assets) are being assessed to determine whether they are meeting policy objectives and providing adequate returns (either financial or non-financial). This includes assessing whether assets could be better used – for example, by being more efficient in the use of office space or by obtaining better financial returns from commercial property or financial investments.

Assets surplus to requirements (non-core assets) will be sold.

The government has already made progress with general-purpose central government property assets – the ‘Government Estate’. The Government Property Agency (GPA) came into existence on 1 April 2018, with a plan to expand its scope from an initial 80 properties to over 1,000. Ownership of the property assets will transfer to the GPA, which will in effect

compete with private landlords to provide cost-effective office space to central government departments. Properties surplus to requirements will be sold.

Initially, the GPA is working with HMRC to create 12 'government hubs' to consolidate government office space in cities across the UK. The aim is to save £1 billion over 10 years by reducing average space per employee from 8 to 6 square metres – for example, by promoting new working practices such as hot-desking. The Cabinet Office already claims £38 million in new income from letting out vacant space freed up as a result of this work.

General-purpose central government property does not include operational assets, such as schools, hospitals and defence properties. Optimising these assets will remain the responsibility of the relevant government departments in England and the devolved administrations in Scotland, Wales and Northern Ireland, although the Balance Sheet Review is likely to look at whether there is a case for establishing health, schools and defence estates within their respective departments to complement the Government Estate and the Crown Estate in managing public sector property holdings effectively.

Similarly, regional and local government could be asked to consider whether (for example) a Yorkshire Estate or a Greater Manchester Estate might provide a better and more effective way of managing and generating value from general-purpose and commercial property in these areas.

The review should provide greater transparency on the government's portfolio of assets and comparative performance in delivering economic, social and financial returns.

### **Investment and asset management strategy**

Currently, central government departments, devolved administrations and local authorities have been left to develop their own approaches to investing in and managing public assets, albeit supported by some centrally established investment principles. These principles are set out in government guidance, in particular the *Managing Public Money* and *Green Book* manuals as described in Box 6.5.

The Balance Sheet Review provides an opportunity for the Treasury to develop an explicit strategy for investment and managing public assets. Some of the building blocks for such a public-sector-wide strategy are already being developed.

The government has been working on its strategy for investing in infrastructure, with the establishment of the National Infrastructure Commission and the National Infrastructure Plan. This involves central government departments, local authorities and the private sector working together to improve economic and social infrastructure across the country – for example, on the 'Northern Powerhouse' initiative in the north of England.

The government has also been working to develop a new approach to investing in social infrastructure, in particular social housing, where the government wants to increase construction from current levels.

### **Box 6.5. Managing Public Money and the Green Book**

The government sets out principles for managing public assets in *Managing Public Money* and the *Green Book*. The Balance Sheet Review provides an opportunity to build on these principles and develop them further as part of an investment and asset management strategy.

*Managing Public Money* is a government handbook that summarises the fiduciary duties of ministers and departments in overseeing public funds. It sets out how parliament grants the right to raise, commit and spend resources in order to implement government policies and deliver public services.

It provides guidance on all aspects of financial management by central government departments and the public bodies they control. This includes maintaining asset registers, developing a department-level asset management strategy and encouraging the commercial exploitation of assets that are not fully used. It also provides for clawback provisions on capital grants to ensure assets created are used as intended.

*The Green Book* provides guidance and methods for appraising and evaluating financial decisions. These range from the need for a cost-benefit analysis before approving spending requests or making changes to the tax or social security system, through to the need for comprehensive project appraisals before investing in infrastructure assets and ensuring that alternatives are properly considered.

Business cases need to assess social, environmental and economic costs and benefits of a proposal as well as the financial costs and any financial returns available to the government itself. This is encompassed by the five-case model: strategic, economic, commercial, financial and management. These five cases summarise the key criteria to be considered in making a financial decision: the economic and social value generated, how risks will be managed and who will bear them, the implications for the public finances, and the ability to deliver as planned.

*The Green Book* includes specific guidance on assessing residual asset values and on when and how to generate value from asset sales, and criteria to be considered before entering into public-private partnerships.

### **Better information and analysis are needed**

The ability of the public sector to improve its management of assets is dependent on the information available and the analysis that is possible as a result. Historical practice has been to focus on income and expenditures, with little analysis about the value of the resources used to support public services.

The Balance Sheet Review provides a chance for government to consider these longer-term issues more deliberately and comprehensively. However, this is only a first step: this type of assessment should not be limited to one-off reviews, but should be embedded into financial management in government.

Government departments need to do more to analyse how assets are being deployed and how they could be used more effectively. Resource allocation decisions need to look at more than just the cash expended.

An example of where analysis could be improved is the Ministry of Housing, Communities & Local Government's annual release of statistics on English social housing.<sup>11</sup> This exercise fails to include data on land or house values reported in local authority financial statements. This limits the ability of the department to have a full picture of the resources being deployed in the provision of social housing, the financial returns being made on existing houses or the returns that might be available from investing in new housing.

### **Funding liabilities and financial commitments**

A public investment and asset management strategy needs to consider more than just the delivery of public policy objectives. It should also address the role that assets can play in the management and settlement of liabilities, financial obligations and other financial commitments.

An underlying presumption of the government's current approach is that surplus resources should generally be used to repay public debt. This default principle means that generally no consideration is given to settling or funding other liabilities or financial commitments, even where this might be more effective in reducing future cash outflows or in reducing risk.

The establishment of pension funds by local authorities and a number of other public bodies illustrates how net liabilities can be reduced by taking an alternative approach. Although there would be additional interest on the public debt needed to establish such funds, this could be more than offset by the higher returns over the decades over which pension promises build up. This approach might also encourage government to manage public expenditure more effectively, by reflecting the cost of pension promises made into its fiscal measures that currently count cash payments but do not count the debts owed to public sector employees.

The Crown Estate, a monarchical legacy that has continued into the present day, and the Pension Protection Fund have also seen strong investment growth in recent years, which in the latter case means that it is possible that lost pension entitlements may be partially restored.

The decision to establish the Pension Protection Fund in 2005 arose because of the growth of liabilities in the Financial Assistance Scheme, which covered members of defined benefit occupational pension schemes that failed between 1997 and 2005. This cashed in the investments of failed schemes, resulting in a then-growing liability to be paid for out of central government budgets.

This contrasts with the approach adopted by the Department for Health and Social Care clinical negligence claims. These are increasing at around £6 billion a year, as summarised in Table 6.8, but no money is being set aside to match these liabilities.

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<sup>11</sup> The latest release is Ministry of Housing, Communities & Local Government, 'Local authority housing statistics: year ending March 2017', 2018, <https://www.gov.uk/government/statistics/local-authority-housing-statistics-year-ending-march-2017>.

**Table 6.8. Examples of financial assets to fund liabilities or commitments (£ billion)**

	Invested assets	Liability or commitment	Comments
Financial Assistance Scheme	0	7	Schemes no longer being added since advent of the Pension Protection Fund.
Pension Protection Fund	29	23	Investment performance has exceeded growth in liabilities.
Clinical negligence claims	0	67	Liability increasing by £6 billion a year (£8 billion new claims – £2 billion paid).

Source: HM Treasury, *Whole of Government Accounts 2016–17*.

Paying clinical negligence claims over time will save money compared with the previous practice of making one-off financial settlements, as well as being fairer to claimants.<sup>12</sup> However, it has flattered health budgets in fiscal terms, with the full cost of claims not scoring against the budget deficit.

A more commercial approach might involve risk-based premiums being levied on hospitals and GP practices and the proceeds being invested to create a fund to pay for claims which in some cases can extend for decades into the future. This might have other advantages, such as providing a financial incentive for clinicians to invest in safer practices and more generally the true cost of different activities being considered.

Financial pressures on the public finances are unlikely to permit a significant amount of resources to be put into setting up funds for clinical negligence claims or for other liabilities such as nuclear decommissioning or currently unfunded pension obligations. However, even relatively small investments made now could have the benefit of substantially improving the financial position in several decades' time, through investment growth (admittedly with some risk). This would also ensure that the costs of claims are fully recognised in the fiscal measures when incurred.

A wider debate is also underway about how to address the costs associated with an ageing population. For example, funding greater levels of adult social care might benefit from establishing investment portfolios to support the cost. A pot of money that can be added to over time, whether or not funded through premiums or additional taxes, might be more sustainable than the current approach of waiting for the bill to fall due, and the consequential pressure that places on other public services.

Such an approach might also provide a vehicle for reducing risks to personal finances through an insurance mechanism similar to that proposed in the Dilnot Review.<sup>13</sup>

<sup>12</sup> As ongoing claims can be adjusted to reflect actual needs, rather than needing to re-litigate settlements.

<sup>13</sup> Commission on Funding of Care and Support, *Fairer Care Funding*, 2011, <http://webarchive.nationalarchives.gov.uk/20130221121534/http://www.dilnotcommission.dh.gov.uk/our-report/>.

## The potential for nationalising utilities and service providers

One question that is likely to be outside the scope of the current review is the potential for acquiring private businesses, such as those proposed in the Labour party's 2017 general election manifesto and currently being developed further. Proposals potentially include the nationalisation of electricity, gas and water utilities in England and Wales, the Royal Mail and PFI contracts and to return train operating companies to the public sector as their franchises expire.

The consequence would be to increase assets in the public balance sheet, with liabilities increasing both from the debt used to fund each acquisition and from existing liabilities acquired with the nationalised companies. Any profits of the utilities and other businesses acquired in this way could be used to help fund the increased interest payments in respect of the higher debt, although profits may be reduced given that Labour have also indicated that they would like to see lower charges to consumers and improved pay and conditions for workers.

Nationalising utilities, train operations, the Royal Mail and PFI contracts could potentially increase public debt by more than £200 billion, depending on the particular businesses and assets acquired and the price paid. For example, nationalising the water industry could cost between £80 billion and £90 billion.<sup>14</sup>

These acquisitions would increase the level of risk in the public finances, potentially affecting the perception of investors in UK gilts. With public debt already in excess of £1.8 trillion and likely above £2.0 trillion if this programme of renationalisation occurred, higher borrowing costs could add significantly to government expenditures.

Although Labour indicate that they will target a fiscal measure for the deficit that excludes borrowing to fund capital investment, there is the potential that capital investment could be constrained to meet their target to reduce public debt as a share of national income. Politically, it can be easier to cut investment than to reduce spending on public services or welfare.

While the stated purpose of nationalisation might be to increase investment, experience suggests that nationalised industries compete with other government priorities for spending, and investment within the public sector can in fact be lower than in the private sector. That risks a deterioration in economic infrastructure on which economic growth depends.

## 6.7 Conclusion

With a reported value of £1.9 trillion or 94% of GDP, the government's assets are not insubstantial. They are, however, less than half the reported liabilities of £4.3 trillion or 214% of GDP.

Of course, the public sector retains the right to raise taxes, perhaps the most valuable resource available to government. But, as the Office for Budget Responsibility has shown,

<sup>14</sup> Social Market Foundation, *The Cost of Nationalising the Water Industry in England*, 2018, <http://www.smf.co.uk/publications/water-nationalisation/>.

taxes will have to be raised from current levels if the public finances are to be put on a sustainable footing – and this may be politically challenging to achieve.

The Balance Sheet Review, due to report in the Autumn Budget, is expected to identify opportunities to improve the utilisation of public assets, generate some additional income and release value by disposing of surplus assets or redeploying them – for example, to provide land for social housing. The Government Property Agency provides a model that could be used to improve asset management in other parts of the public sector if it proves successful. However, care should be taken to avoid suboptimal financial decisions, such as continuing to sell student loans at a loss.

Consideration is needed not only of the assets that are there, but of those that are not.

This extends beyond identifying infrastructure that is necessary to support greater economic growth, critical though that is. There are no social security or social care funds. No money has been invested to provide for £1.9 trillion in unfunded pensions, clinical negligence or nuclear decommissioning liabilities.

Consideration should be given as to whether it might make sense to put money aside to fund certain liabilities or financial commitments now rather than waiting until the bills fall due, even if this means assuming some investment risk. For example, establishing a clinical negligence fund might help reduce the pressure on future health budgets.

The government remains dependent on its ability to continue borrowing at an affordable rate of interest, especially as it remains politically difficult to increase taxes. As our chapter on public debt in the 2017 Green Budget makes clear, in these circumstances the most important thing is maintaining the confidence of investors.

Maintaining that confidence, and that of the British public, would be made easier by an investment and asset management strategy that sets out how the government plans to improve the resilience of the public finances through a stronger balance sheet and better utilisation of public assets.

## 7. ICAEW: defence

### Ross Campbell (ICAEW) and Martin Wheatcroft (for ICAEW)

#### Key findings

- **The UK has enjoyed a substantial post-Cold-War peace dividend that has effectively been used to fund the growing welfare state.** The proportion of UK public spending going on defence and security has decreased from 15% fifty years ago to just over 5% today. Over the same period, spending on social security and health has increased from around a quarter to over half of the total.
- **Further cuts to the defence budget to fund other spending priorities are no longer possible if the UK is to meet its commitment as a member of NATO to spend 2% of national income on defence.** Defence and security spending in 2017–18 of 2.1% of GDP only marginally exceeded the 2% NATO threshold.
- **Changing perceptions of potential threats could lead to higher defence spending over the next few years, adding to the pressure on the public finances.** The UK's national security strategy is under review in response to increasing international tensions. The Defence Committee of the House of Commons believes the Armed Forces need to be larger and better equipped for the UK to maintain its leading position within NATO and has called for defence spending to rise by £20 billion a year, or an extra 1% of national income.
- **The UK needs to match its aspirations for a global military role to the amount it is willing to spend on defence.** UK defence spending of £36 billion in 2017–18 was higher as a fraction of national income than that of most G7 countries, though a smaller share than the US. And, in cash terms, it was less than 8% of the £470 billion spent by the US in 2017 and around a fifth of the amount spent by China.
- **There is a significant potential for cost overruns in the procurement budget.** The National Audit Office has identified risks that could lead to additional costs of between £5 billion and £21 billion in the 2017 to 2027 Equipment Plan.
- **The 10-year Equipment Plan would cost an extra £4.6 billion at an exchange rate of \$1.25 to £1 instead of the \$1.55 to £1 rate originally forecast.** This could adversely affect defence capabilities if additional funding is not found. Denominating a proportion of parliamentary funding for defence in dollars would reduce the risk of having to make cuts to personnel or equipment if sterling weakens, or the incentive to spend currency gains if sterling strengthens.

## 7.1 Introduction

The UK spent £36 billion or 1.8% of national income on defence in 2017–18, or £43 billion (2.1% of national income) on defence and security once spending on security services, counter-terrorism and military pensions is included.

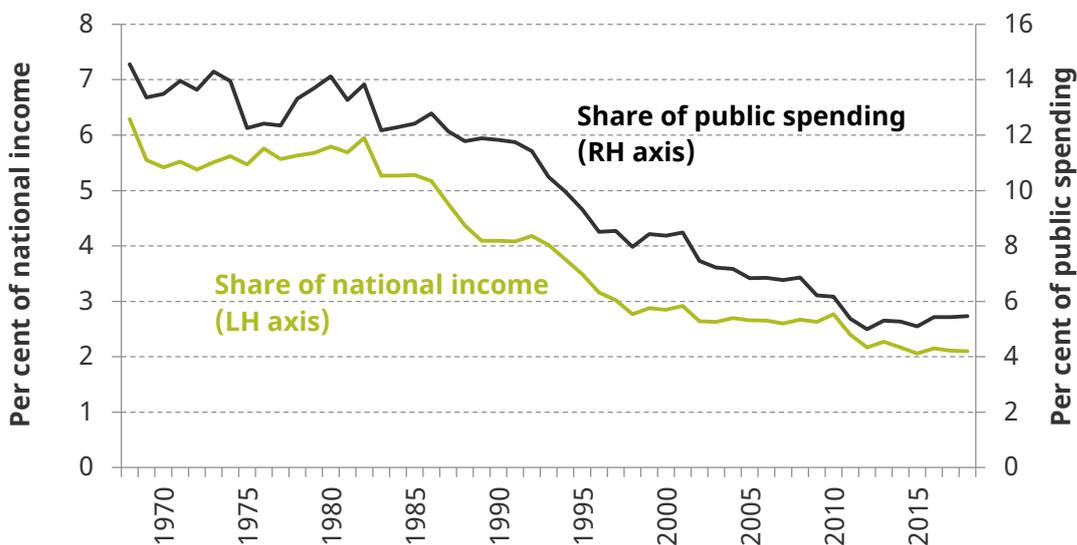
There are growing questions as to whether this level of spending is sufficient to provide for the defence of the UK. The Defence Committee of the House of Commons has argued that spending on defence and security may need to increase from 2% to 3% of national income, an additional £20 billion a year.

... if the UK wishes to maintain its leadership position in NATO and to continue such fruitful defence relations with the United States, then it will have to invest more in its Armed Forces. Analysis we commissioned has demonstrated that at current spending levels, the Ministry of Defence will not be able to maintain UK military capacity and capability. Diminished capacity reduces the UK’s usefulness to the US and our influence within NATO. The Government must not allow this to happen.<sup>1</sup>

In addition, Gavin Williamson, the Secretary of State for Defence, has reportedly lobbied for an additional £4 billion a year.<sup>2</sup> These questions reflect the UK’s changing strategic position amid greater international tensions, together with significant cost pressures on the defence budget that could mean cutting existing defence capabilities if not addressed.

Spending on defence and security has fallen significantly over the last 50 years, shrinking from 6.3% of national income or 15% of total managed expenditure in 1968 to 2.1% of

**Figure 7.1. UK defence and security spending over time**



Source: NATO; Office for Budget Responsibility.

<sup>1</sup> Defence Select Committee, *Indispensable Allies: US, NATO and UK Defence Relations*, Eighth Report of Session 2017–19, HC 387, 2018.

<sup>2</sup> ‘Billions more needed for defence, says Gavin Williamson’, *The Times*, 27 June 2018.

national income or just over 5% of overall public spending this year. Most of this decrease reflects a post-Cold-War peace dividend over the last 30 years, as illustrated in Figure 7.1.

The savings from reduced defence expenditure have effectively been used to fund increases in spending on social security and health, which has more than doubled as a share of public spending from 25% in 1967–68 to 54% in 2017–18.

Defence spending by both western European countries and central and eastern European nations that were formerly part of the Warsaw Pact has also decreased significantly. Even in the US, which continues to spend the most on defence in both absolute and proportional terms, defence spending has fallen by 45% since 1988 – from 5.7% to 3.1% of national income – a similar fall in share of national income to the UK, but a smaller proportion of the total.

This peace dividend has enabled countries to devote resources to other areas, such as the welfare state. Globally, defence spending has fallen from 5.9% of national income in 1968 to 2.2% in 2017.<sup>3</sup>

In recent years, however, there has been concern from within the NATO alliance that defence spending has fallen too far. The US has also indicated, under both the current and previous administrations, that its European allies should spend more on defence and be less reliant on the US's protective umbrella.<sup>4</sup> This culminated in a decision at the 2014 NATO summit to adopt a new approach, asking members to spend a minimum of 2% of their GDP on defence and security, with the aim of reaching this threshold by 2024.<sup>5</sup>

In 2017, just five NATO members (the US, the UK, Poland, Greece and Estonia) met the 2% commitment, although eight are expected to meet it in 2018. However, the UK's spending on defence and security – at 2.1% of national income – is only just above the threshold. This means that there is little scope to cut defence spending further without breaching this commitment.

Figure 7.2 illustrates that NATO members would have spent £83 billion more on defence and security in 2017 if all members had met the 2% threshold (and countries already exceeding it continued to spend at the same level). Spending by EU member states within NATO other than the UK would constitute £70 billion of this increase, an increase of 50% over their existing spending.

US President Donald Trump has called for NATO members to go further and spend 4% of GDP on defence.<sup>6</sup> Although other NATO members have not agreed with this proposal, if implemented it would result in additional spending by the US of £62 billion and by other NATO members of £288 billion, of which £38 billion would need to be spent by the UK.

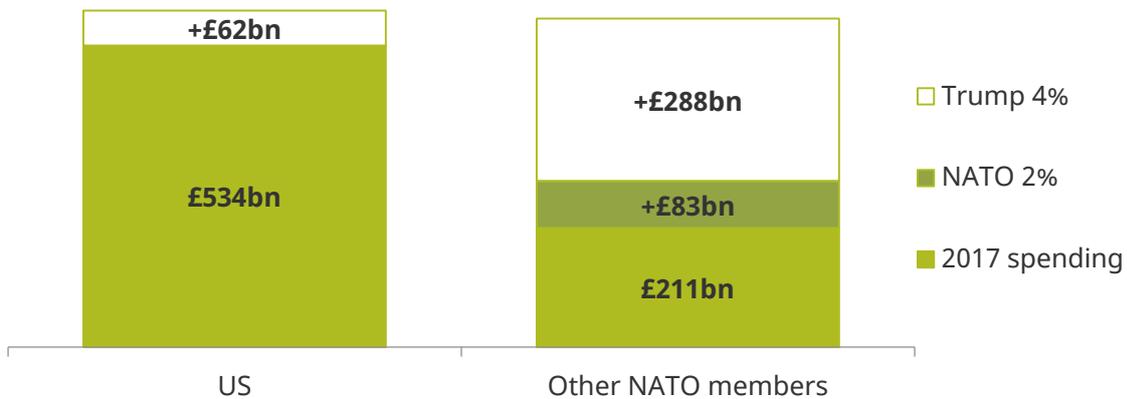
<sup>3</sup> World Bank / Stockholm International Peace Research Institute, 'Military expenditure 1961 to 2017'.

<sup>4</sup> Speech by President Obama, 'NATO needs to boost presence in eastern Europe', 26 March 2014.

<sup>5</sup> NATO, *Wales Summit Declaration*, 5 September 2014.

<sup>6</sup> White House, 'Remarks by President Trump at press conference after NATO Summit', 12 July 2018.

**Figure 7.2. Meeting the NATO 2% commitment / Trump’s 4% proposal**

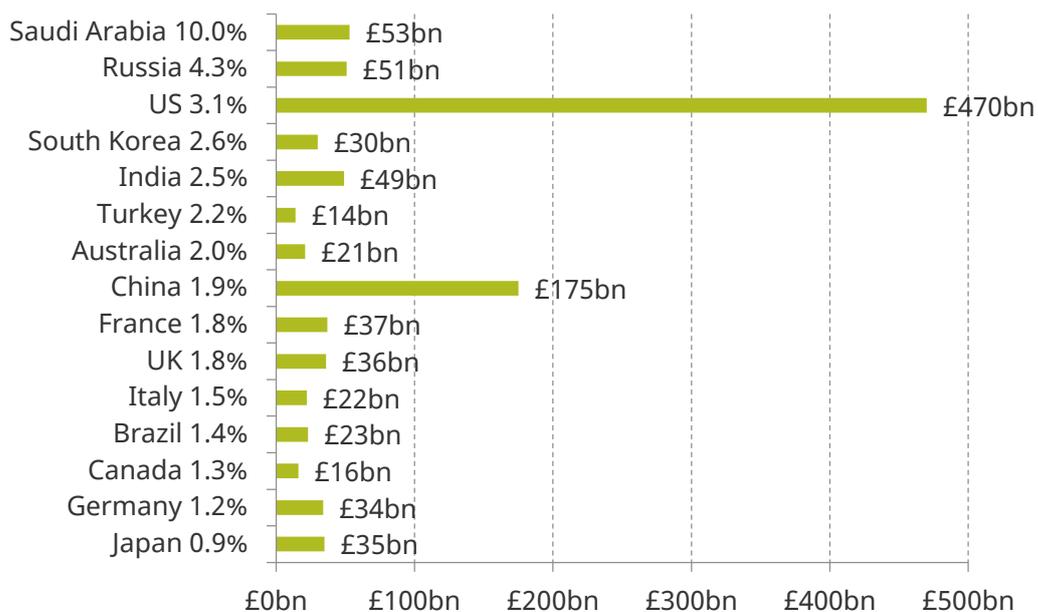


Note: ‘NATO 2%’ refers to the NATO target to spend 2% of national income on defence and security. ‘Trump 4%’ refers to US President Donald Trump’s call for NATO members to spend 4% of GDP on defence.

Source: NATO Annual Report 2017; ICAEW calculations.

The NATO 2% commitment, if met, would change the balance of defence and security spending within Europe. As it stands, the UK is the second-biggest spender in Europe on defence and security within the NATO alliance, and accounts for 24% of the £179 billion total for EU members of NATO in 2017. Had the 2% commitment been met across the board, the UK’s spending would have been 17% of the £243 billion spent by the 22 EU countries that are members of NATO. This could result in a re-ordering of the importance of the UK within NATO, with Germany in particular taking a more prominent role due to its larger economy.

**Figure 7.3. Defence spending by country in 2017**



Note: The % figures are percentages of GDP.

Source: National governments or Stockholm International Peace Research Institute.

Globally, the UK is currently the seventh-biggest spender on defence, after the US, China, Saudi Arabia, Russia, India and France and just ahead of Japan and Germany. Figure 7.3 highlights defence spending by country as a share of national income and in sterling terms.

This chapter considers how the evolving defence and security position may affect defence resources and spending, and the pressure that this could put on the public finances.

Section 7.2 provides an overview of the UK's defence arrangements and the international strategic situation. It also considers the ongoing update to the 2015 National Security Strategy and Strategic Defence & Security Review (the 2015 SDSR) and what that might mean for defence spending and for the public finances.

Section 7.3 looks in more detail at the finances of the Ministry of Defence (MoD) and the resources available to defend the UK, including military and civilian personnel, military bases, ships, tanks and aircraft, and military equipment and systems. This is followed by Section 7.4, which looks at financial management within the MoD, including the management of multi-year complex programmes to procure new equipment and currency and other risks of multi-year capital programmes.

Section 7.5 concludes.

## 7.2 The defence of the realm

One of the first duties of any government is to provide for the defence and security of its citizens, its territories and its interests. In the UK, this is primarily provided by the British Armed Forces, the UK's security services and by counter-terrorism police, as described in Box 7.1.

### Box 7.1. National security responsibilities in the UK

Responsibility for defence and security in the UK sits with the **National Security Council**, a Cabinet committee comprising the Prime Minister; the Minister for the Cabinet Office; the Foreign, Home, Defence, Business and International Development Secretaries of State; and the Attorney General. The National Security Council is supported by the Defence Council and the Joint Intelligence Committee.

The Queen is the Commander-in-Chief of the British Armed Forces, which comprise the Royal Navy (founded in 1546), the British Army (1660) and the Royal Air Force (1918). In practice, her role is exercised by the **Defence Council**, which is legally entrusted with the defence of the UK and its overseas territories. It consists of the Secretary of State for Defence, four other government ministers, two senior civil servants and the Defence Staff.

The **Defence Staff** comprises six of the eight most senior military officers in the UK: the Chief and Vice Chief of the Defence Staff, the heads of the Royal Navy, the British Army and the Royal Air Force, and the commander of Joint Forces.

The **Joint Intelligence Committee** is a Cabinet Office committee tasked with coordinating the actions of the UK's intelligence agencies. These include the Secret Intelligence Service (SIS or MI6) and the Government Communications Headquarters (GCHQ) within the Foreign and Commonwealth Office; the Security Service (MI5) within the Home Office; Defence Intelligence within the Ministry of Defence; and the Joint Intelligence Organisation (JIO) within the Cabinet Office.

Security resources also include the National Crime Agency and the Office for Security and Counter-Terrorism, together with the Counter Terrorism Command of the Metropolitan Police Service, and anti-terrorist and special branch (domestic security) units of other police forces around the UK.

The government has identified three principal national security objectives: to protect the UK, its citizens and its way of life; to project influence globally; and to use defence, security and diplomatic resources to promote UK prosperity.<sup>7</sup>

### The Strategic Defence and Security Review

The UK conducts frequent reviews of its defence and security capabilities, with the most recent major review being the 2015 National Security Strategy and Strategic Defence & Security Review (the 2015 SDSR). The key elements are summarised in Box 7.2.

According to the 2015 SDSR, the Armed Forces' primary missions are to defend the UK and overseas territories, to conduct military operations and to maintain the nuclear deterrent. They must deliver strategic intelligence, conduct rescue and peacekeeping operations, work with allies, reinforce international security and provide humanitarian assistance and disaster relief. The Armed Forces need to be ready for and capable of conducting major combat operations, including under NATO's Article 5 mutual defence clause. This is based around a 'Whole Force' approach, which seeks to combine regular forces with reserves, contractors and allies in order to deliver improved capability at a lower cost.<sup>8</sup>

The 2015 SDSR continued a path of reductions in the size of the Armed Forces, subject to a specific floor in the size of the Army of 82,000 regular forces (including trainees). There was a commitment to increase defence spending in real terms, but with spending on the security services expected to increase this could mean the defence element of defence and security spending falling below 1.8% of national income without breaching the NATO 2% commitment.

Although the 2015 SDSR was completed less than three years ago, the government has commissioned several updates to address developments in the international defence and security environment. The National Security Capability Review reported in early 2018. It concluded that the UK has entered a period of sharply increased complexity and risk and that strategic challenges identified in the 2015 National Security Strategy have intensified and combined at a greater pace than was foreseen.

<sup>7</sup> HM Government, *National Security Strategy and Strategic Defence and Security Review*, Cm 9161, 2015.

<sup>8</sup> J. Louth and T. Taylor, *Beyond the Whole Force: The Concept of the Defence Extended Enterprise and its Implications for the Ministry of Defence*, Royal United Services Institute, 2015, <https://rusi.org/publication/occasional-papers/beyond-whole-force-concept-defence-extended-enterprise-and-its>.

This has been followed by a further review, the Modernising Defence Programme (MDP), which is expected to feed into the 2019 Spending Review.

In the context of a global security situation characterised by sharply increased complexity and risk, the MDP has two headline goals: to strengthen our world-leading Armed Forces against the harder threats that we and our allies now face; and to put UK Defence on an enduringly affordable footing, so that our contribution to national security and prosperity is sustainable over the long term.<sup>9</sup>

### **Box 7.2. 2015 SDSR national security objectives and commitments (abridged)**

The 2015 Strategic Defence and Security Review delivered an assessment of the key threats facing the UK and outlined a 10-year defence strategy to meet these challenges. It identified 89 recommendations, including the following:

#### **Protect our people at home, in our overseas territories and abroad, and protect our territory, economic security, infrastructure and way of life.**

- Meet NATO 2% pledge. Increase defence budget each year in real terms. A Joint Security Fund growing to £1.5 billion by 2020. Protect counter-terrorism budget.
- Renew the UK's nuclear deterrent. Invest in globally deployable Armed Forces. Work with allies to respond to the re-emergence of state-based threats.
- Invest in security and intelligence agencies and cyber-warfare. Tackle terrorism, radicalisation and extremism, and organised crime.
- Increase resilience to threats and hazards. Improve crisis management.

#### **Project our influence globally, reducing the likelihood of threats materialising and affecting the UK, our interests, and those of our allies and partners.**

- Spend 0.7% of GNI on development, 50% in fragile states and regions.
- Expand soft power – diplomats, development funds, BBC and British Council.
- Strengthen alliances and build stability overseas. Reinforce the rules-based international order. Help others develop resilience to respond to conflict and crises.

#### **Promote prosperity by working innovatively and supporting UK industry.**

- Champion an open and rules-based international trading environment.
- Exploit economic opportunities from defence, security, diplomacy and development.
- Grow defence, resilience and security industries. Invest in skills and innovation.

<sup>9</sup> Ministry of Defence, *Modernising Defence Programme*, 2018, <https://www.gov.uk/government/consultations/modernising-defence-programme-public-consultation>.

This established four workstreams: (i) a refreshed and clearer operating model for the MoD; (ii) improving efficiency and cost-effectiveness; (iii) improving the MoD's commercial capability and supplier management; and (iv) analysing the global security context and its implications for defence policy and capabilities.

The government has indicated in each of these updates that it needs to strengthen and modernise the Armed Forces further. This might imply an increase in funding to deliver better military capability. But the government has yet to announce how much it plans to allocate, and clearly will have to balance these demands against other priorities.

### The international context

Globally, the UK is considered to be a medium-tier military power: on a par with France, India and Japan, and below regional powers Russia and China and the global military power, the US.<sup>10</sup>

The military forces of these countries are summarised in Table 7.1.

Numbers do not provide a full picture of comparative military strength. The more powerful equipment and weapons available to the US, Japan, France and the UK in particular, combined with better training and intelligence, make them more effective than militaries with larger numbers of armed personnel and less advanced ships, submarines, tanks, aircraft and helicopters.

The UK is part of the 'Western alliance', a network of international treaties and relationships that link a number of countries to the US. This involves multilateral treaties such as NATO and the Rio Pact (which covers many of the countries in North and South America), together with bilateral agreements between the US and a number of other nations. Several of these include mutual defence commitments.

**Table 7.1. Military forces of major powers**

	US	China	Russia	India	Japan	France	UK
Regular forces ('000)	1,350	2,180	1,010	1,400	250	200	150
Aircraft carriers	11	1	1	2	0	1	1
Warships	177	125	105	51	43	26	21
Submarines <sup>a</sup>	70	14	39	2	2	10	10
Tanks	8,850	9,151	15,398	6,464	688	200	227
Aircraft	3,680	3,720	3,547	2,086	777	395	284
Helicopters	1,830	579	1,438	809	207	293	295

<sup>a</sup> Nuclear-powered nuclear-armed ballistic missile submarines and nuclear-powered fleet submarines.

Source: Stockholm International Peace Research Institute; national governments.

<sup>10</sup> M. Chalmers, 'Tier one or bust?', Royal United Services Institute, 2018, [https://rusi.org/commentary/Tier\\_One\\_or\\_Bust](https://rusi.org/commentary/Tier_One_or_Bust).

The most comprehensive of the UK's alliances is NATO, a mutual defence alliance of 29 countries that commits members to come to the aid of any member that is attacked. NATO's military roles are to provide an integrated command structure and operational planning and to conduct support for military operations; to improve the capabilities of members' militaries; and to enable joint working – for example, through the interoperability of equipment. NATO had a direct budget of £1.3 billion in 2017, of which the UK contributed £0.2 billion. A senior UK officer is Deputy Supreme Allied Commander Europe, while the current Chair of the NATO Military Council is also a British officer.

NATO countries have 3.2 million active military personnel, of which the US and Canada have 1.4 million, European members 1.4 million and Turkey 0.4 million.

The UK is also a member of the EU's Common Security and Defence Policy, as well as having a number of bilateral agreements and close working relationships with other countries and their militaries. EU security cooperation dates back to 1975, when the TREVI anti-terrorism network was established, which in turn led to the creation of its police agency Europol and judicial instruments such as the European Arrest Warrant. This has since expanded to include defence as part of a Common Security and Defence Policy that continues to evolve. There is a substantial overlap between the EU and NATO, with 22 European countries, including the UK, belonging to both.

The EU does not have any military forces of its own beyond a small planning staff; instead, it draws on national or multinational forces as needed. Under the 2002 Berlin Plus agreement, the EU can use NATO facilities and command structures to conduct military operations. Multinational forces include Eurocorps, with its 5,000 strong Franco-German Brigade, and the European Maritime and European Rapid Operational Forces (composed of forces from France, Italy, Portugal and Spain). These forces also form part of the NATO command structure.

In addition to its defence alliances, the UK is a member of an intelligence-sharing treaty with the US, Canada, Australia and New Zealand known as the Five Eyes alliance. This started with the routine sharing of signals intelligence (intercepted communications) but has expanded to include wider intelligence sharing and security cooperation. Five Eyes members also exchange intelligence with European and other allies through a mixture of formal and informal mechanisms.

The international geopolitical landscape also includes major security alliances between other countries. The Collective Security Treaty Organisation (CSTO) is a mutual defence alliance comprising Russia, Armenia, Belarus, Kazakhstan, Kyrgyzstan and Tajikistan, with Afghanistan and Serbia as observers. Combined defence spending by the CSTO countries amounted to £61 billion in 2017, with total active military personnel of 1.2 million.

The Shanghai Cooperation Organisation is an alliance of eight countries in mainland Asia. It was established by China in 2001 and its members include Russia and four other members of the CSTO, India and Pakistan. Iran is an observer, while Turkey (a NATO member) is a 'dialogue partner'. The Shanghai Pact is not a mutual defence alliance, but its member nations conduct joint military exercises, as well as cooperating in other ways on defence and security matters.

Defence spending by China, India and Pakistan in 2017 respectively amounted to £175 billion, £49 billion and £7 billion, with total active military personnel of 2.2 million, 1.4 million and 0.7 million.

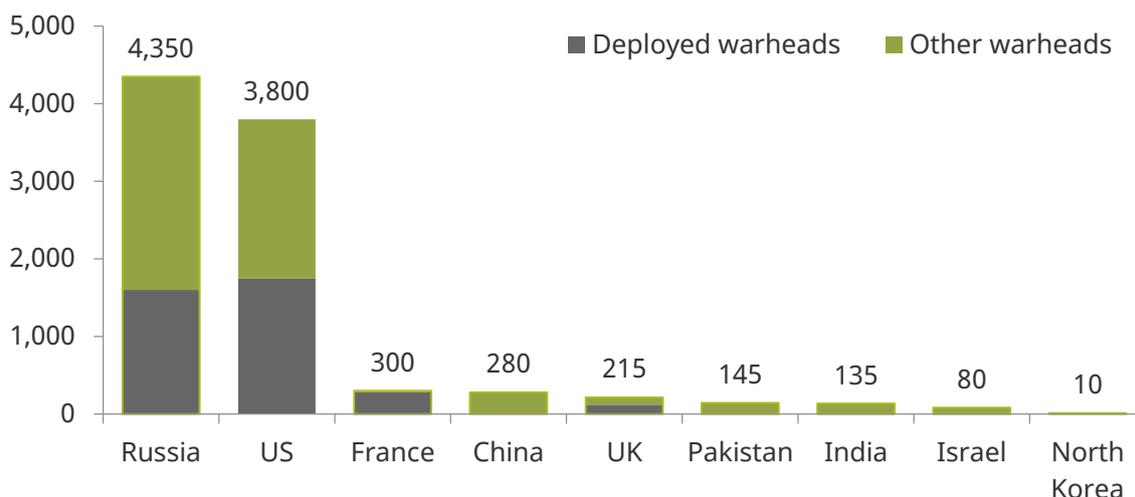
Defence alliances provide a key resource for many militaries, enabling them to utilise the military resources of other nations. This can range from the straightforward sharing of equipment through to joint operations with allies that multiply force strength, or the integrated command and control seen in a comprehensive military alliance.

Examples of the benefits of alliances in practice include the UK’s use of US heavy lift aircraft to transport troops and equipment to Iraq and Afghanistan, while the Royal Navy was able to train sailors and aircrew on US and French aircraft carriers while *HMS Queen Elizabeth* was under construction. Similarly, the UK supports other nations through the provision of training and technical expertise.

Military cooperation can reduce the amount of defence resources needed by an individual nation – for example, by sharing equipment, collaborating on the development of new military equipment, or enabling the stronger formations that joint forces or operations can provide. In mutual defence alliances, this sharing of resources can extend to the entire military. An armed attack on any one NATO nation should result in a response from all 29 members of NATO, including the use of armed force if necessary.

The corollary is that members of a defence alliance need to provide resources to that alliance, whether in the form of personnel, making equipment available or pooling forces and equipment with other nations – either temporarily as part of joint operations or more permanently as part of joint forces. There may be costs incurred in ensuring that equipment, weapons and ammunition are inter-operable – for example, in ensuring command and control systems can work together or in installing compatible equipment.

**Figure 7.4. Nuclear warheads by country**



Note: Excludes 2,500 Russian and 2,650 US retired warheads awaiting dismantlement.

Source: Stockholm International Peace Research Institute.

## Nuclear weapons

There are an estimated 9,315 nuclear warheads in the possession of the nine countries reported to have nuclear capabilities, not including retired warheads scheduled for dismantlement (see Figure 7.4). In practice, the number available for immediate use is much lower – the US has 1,750 nuclear weapons deployed on missiles or with operational forces, compared with Russia’s estimated 1,600 and the 280 and 120 deployed by France and the UK respectively. It is unclear how many other nuclear weapons are actively deployed, in particular those of China.

## Capabilities

Military effectiveness is determined not only by the number of personnel and the equipment available to military forces, but also by their capabilities in terms of logistical expertise, training, strategic and tactical abilities, and so on.

The combination of modern equipment and capabilities means that the British Armed Forces are more powerful than other, much larger forces. For example, the UK’s 147,000 regular forces are considered to be significantly stronger than those of South Sudan, which has 185,000 people in uniform.<sup>11</sup> This also helps explain why many defence resources are dedicated to support activities. A soldier with a gun is much less effective than a well-trained soldier with a gun, the ability to communicate and coordinate with fellow soldiers and to call on artillery and air support, with access to surveillance and reconnaissance, equipped with detailed intelligence, and with clear objectives and a comprehensive plan to achieve them. As a consequence, the cost of additional front-line combat troops will be many times higher than their individual salaries once the cost of additional support personnel, equipment and other support requirements are factored in.

Not reflected in the balance sheet is the right of the Armed Forces to pay for or (*in extremis*) commandeer privately owned resources, such as the merchant shipping fleet or commercial aircraft or helicopters. Although the official merchant fleet has reduced in recent years, with passenger and cargo ships increasingly sailing under the flags of other nations, many of these are still owned by companies based in the UK or allied nations.

Capabilities also include the ability to utilise diplomatic, economic and other non-military or ‘soft power’ means to deliver objectives – for example, in persuading a potential adversary not to use force in the first place.

Economic sanctions are an important tool available to the world’s largest economies, in particular the US, the EU, China and Japan. They can range from targeted sanctions aimed at specific individuals, through bans on arms sales or providing finance, to wider ranges of sanctions that seek to affect an entire country’s economy. For example, international sanctions on North Korea prevent it from taking part in most aspects of international trade. Conversely, the potential use of military force is an important element in supporting the diplomatic objectives of a civilian government – for example, in supporting peacekeeping operations to reduce tensions, in demonstrating support for allied nations, or through the threat of force.

<sup>11</sup> Global Firepower, *2018 Military Strength Ranking* – UK ranked 6 and South Sudan ranked 99.

### 7.3 UK defence finances

Table 7.2 reconciles the £36 billion spent on defence with the £43 billion spent on defence and security in 2017–18, once funding for the security services, counter-terrorism and pensions is added to spending on military capabilities.

The Ministry of Defence recorded net expenditure of £43.5 billion in 2017–18 in its financial statements, as summarised in Table 7.3. This included non-cash charges other than depreciation of £9.2 billion and war pensions of £0.7 billion in addition to the £33.6 billion of current spending reported in the fiscal numbers (Table 7.2). The vast majority of the non-cash charges – £8.3 billion – related to historic nuclear decommissioning provisions.

**Table 7.2. Defence and security spending, 2017–18**

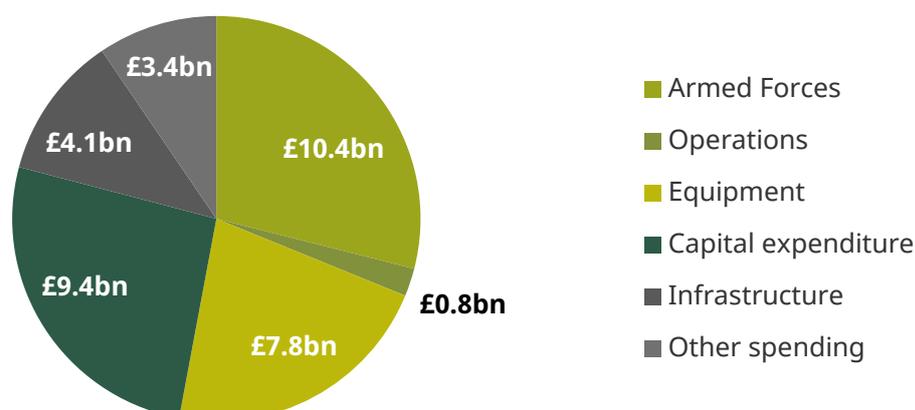
	Current spending (£bn)	Net investment (£bn)	Managed expenditure (£bn)	Share of GDP (%)
Defence	33.6	2.3	35.9	1.8%
Security services	2.4	0.2	2.6	0.3%
Counter-terrorism	0.8	0.1	0.9	
Military pensions	1.6	-	1.6	
War pensions	0.7	-	0.7	
Other	1.3	-	1.3	
<b>Defence and security</b>	<b>40.4</b>	<b>2.6</b>	<b>43.0</b>	<b>2.1%</b>

Source: Ministry of Defence; Cabinet Office; NATO.

**Table 7.3. Ministry of Defence financial statements 2017–18, £ billion**

Balance sheet		Revenue and expenditure	
Assets	143.7	Revenue	1.4
Liabilities	(37.3)	Expenditure	(44.9)
<b>Net assets</b>	<b>106.4</b>	<b>Net expenditure for the year</b>	<b>(43.5)</b>
Cash flows		Change in financial position	
Operating cash outflows	(27.8)	Net expenditure for the year	(43.5)
Investing cash outflows	(8.2)	Asset revaluations	3.0
Financing cash outflows	(0.1)	Other movements	(0.5)
Inflow from Consolidated Fund	36.4	Parliamentary funding	36.4
<b>Change in cash balances</b>	<b>0.3</b>	<b>Change in financial position</b>	<b>(4.6)</b>

Source: Ministry of Defence, *Annual Report and Accounts 2017–18*. This report, and those for earlier years, are available from <https://www.gov.uk/government/collections/mod-annual-reports>.

**Figure 7.5. Defence spending of £35.9 billion in 2017–18**

Note: £35.9 billion = current spending £33.6 billion + capital expenditure £9.4 billion – depreciation £7.1 billion.

Source: Ministry of Defence, *Annual Report and Accounts 2017–18* (adjusted to exclude war pensions).

Ministry of Defence assets of £143.7 billion at 31 March 2018 comprised fixed assets of £134.4 billion and £9.4 billion of working capital assets and cash.

Capital expenditure during 2017–18 was £9.4 billion, of which £8.3 billion was paid in cash. This was partially offset by £0.1 billion from asset disposals to give an investing cash outflow of £8.2 billion. Fixed assets were revised up in value by £3.0 billion in accordance with the government’s accounting policy to record land at current value and other fixed assets at their depreciated replacement cost (see Chapter 6).

Defence spending of £35.9 billion (excluding non-cash expenditure and war pensions and including capital expenditure) can be analysed as shown in Figure 7.5.

Just under 30% (£10.4 billion) went on Armed Forces military and civilian personnel, while over half (£21.3 billion) was used to fund equipment support, the procurement of new equipment and infrastructure.

Like other departments, the Ministry of Defence is currently under significant financial pressure. The Army has returned to operations in Afghanistan and sent troops to NATO units in eastern Europe. The Royal Navy has launched one aircraft carrier, with a second under construction, and is conducting freedom of navigation operations in the South China Sea. Royal Marines are to be integrated with Norwegian forces in the Arctic and the RAF has squadrons operating in the Middle East. The MoD is also investing in cyber-warfare capabilities and developing responses to increases in perceived threat levels, in particular from Russia. These demands have been exacerbated by higher procurement costs as a consequence of a greater than 15% fall in the value of sterling from the \$1.55 to £1 rate used in the 2017 to 2027 Equipment Plan.

The ability to attract new talent is also an issue, with upward pressure on pay given the need to compete with civilian employers for technical specialists, especially those with transferable skills. The National Audit Office reported that there were 102 trades with

shortfalls in skilled personnel and a 24% shortfall in the number of regulars recruited in 2016–17 compared with annual targets.<sup>12</sup>

## Personnel

Personnel costs in 2017–18 amounted to £12.4 billion, of which £10.4 billion was on the Armed Forces and £2.0 billion was on civilian support functions. £9.8 billion was paid to an average of 159,000 military personnel and £2.6 billion to 59,000 civilian staff.<sup>13</sup>

At 1 April 2018, there were just under 239,000 personnel employed by the Ministry of Defence, as summarised in Table 7.4. Around 60% are regular forces on active duty, with a further 15% employed in a reserve capacity. The remainder of the MoD's employees provide civilian support, either working directly with one of the Armed Forces or working for one of the MoD's agencies or support organisations.

Of the total regular forces of 146,560, 6,850 are stationed elsewhere in Europe, 1,190 are based in North America, 830 in the Middle East and 1,110 are permanently stationed in other parts of the world.<sup>14</sup>

Only a small proportion of military personnel are likely to be directly involved in combat. For example, there are fewer than 2,000 pilots in the Royal Air Force, with the other 31,000 personnel there to provide that small group of people with the necessary support and protection in order to use force effectively. Similarly, less than a quarter of army personnel and less than a third of naval personnel are in direct combat roles.

**Table 7.4. Military and civilian personnel at 1 April 2018**

	Regular forces	Reserve forces	Civilian staff	Total
Royal Navy and Royal Marines	29,300	2,760	-	32,060
British Army	77,120	26,960	-	104,080
Royal Air Force	30,350	2,510	-	32,860
<b>Total Armed Forces</b>	<b>136,770</b>	<b>32,220</b>	-	<b>169,000</b>
Trainees	9,790	-	-	9,790
Gurkhas	-	3,150	-	3,150
Civilian personnel	-	-	56,870	56,870
<b>Total Ministry of Defence</b>	<b>146,560</b>	<b>35,370</b>	<b>56,870</b>	<b>238,810</b>

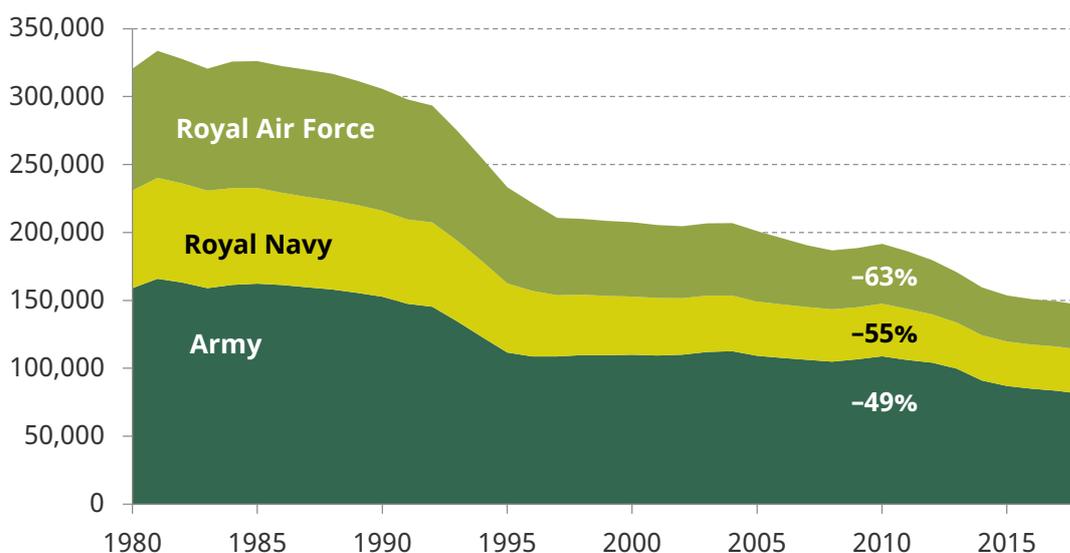
Note: Armed Forces Reserves include 5,010 on full-time service.

Source: Ministry of Defence, *Annual Report & Accounts 2017–18*; N. Dempsey, 'UK defence personnel statistics', House of Commons Library Briefing Paper CBP7930, 2018.

<sup>12</sup> National Audit Office, *Ensuring Sufficient Skilled Military Personnel*, HC 947, Session 2017–19, 2018.

<sup>13</sup> On a full-time-equivalent basis.

<sup>14</sup> This excludes forces that are deployed overseas on operations or for exercises.

**Figure 7.6. Military personnel, 1980 to 2018**

Source: N. Dempsey, 'UK defence personnel statistics', House of Commons Library Briefing Paper CBP7930, 2018.

As Figure 7.6 illustrates, military personnel numbers have fallen significantly since 1980, with regular forces (including cadets and trainees) declining by more than half from 320,700 in 1980 to 146,560 in 2018. Army numbers have fallen by 49%, while Royal Navy and Royal Air Force personnel have fallen by 55% and 63% respectively.

These falling numbers have been the result of successive defence reviews that have in turn concluded that smaller numbers of military personnel are necessary. Although technology and military efficiency have contributed to some of the fall of each Armed Force, most of the decline has been as a consequence of scaling back operational capacity, with fewer vessels, fewer brigades, fewer tanks and fewer aircraft. Originally, these reductions were presented as a 'peace dividend' following the end of the Cold War and the Good Friday Agreement in Northern Ireland, but more recent reductions have been as a consequence of budgetary pressures.

The reduction in Armed Forces personnel has had a disproportionate effect on the number of people in direct combat roles – although overall numbers have more than halved, it is estimated that there has been a disproportionately greater reduction in the number of deployable combat units. For example, the Royal Navy has reduced its combat vessels by 70% from 106 in 1981 to 32 today.<sup>15</sup> In a shorter period, the Royal Air Force fast jet fleet fell by three-quarters, from almost 750 aircraft in 1989 to 178 today.<sup>16</sup>

At the same time, in recent years, the Ministry of Defence has struggled to meet its targets for planned strength in the Armed Forces. Active duty forces of 136,770 are approximately 8,800 (6.0%) below the planned strength for 2018 and around 7,500 below the 2020 target of 144,260. With around 15,000 service personnel leaving active duty each year, this means that, to meet its target, the Armed Forces would need to recruit an average of 19,000 a year over the next two years, compared with 12,000 recruited in 2017–18. The Reserves

<sup>15</sup> J. Moore, *Jane's Fighting Ships 1981–82*, Jane's Publishing Company Ltd, 1981.

<sup>16</sup> 'World's air forces 1989', *Flight International*, 60–61, 29 November 1989.

face similar pressures: they are under strength based on assessed needs by 4,000 or so today, and by just under 3,000 compared with the 2020 target of 35,060.

The Ministry of Defence attributes the challenges experienced in recruitment to competition from the private sector and a reduction in the number of white men aged 16–24, the traditional demographic for Armed Forces recruits.

These challenges may lead to pressure to increase wages, in particular to attract the skilled graduates needed for an expanding range of technical roles, including engineering and weapons specialists, intelligence analysts, cyber-warfare technicians and drone pilots amongst others.

Despite the financial pressures, UK Armed Forces typically have a higher proportion of the general and flag officer ranks relative to the US and some other allies.

Table 7.5 analyses the UK regular forces by rank. The proportion of senior officers, at 3.2% of the total, is slightly higher than the US military, where 38,406 American senior officers comprise 2.9% of total US service personnel.<sup>17</sup> General and flag officers (the most senior ranks) comprise 0.3% of the total (30 for every 10,000 personnel), a much higher ratio than the US, where there are just 7 general or flag officers for every 10,000 personnel. Although the ideal ratio of general and flag officers to other ranks is likely to vary by country, there are some indications that the UK may have more very senior officers than is appropriate based on its current force structure.

For example, the Royal Navy has more than three-and-a-half times as many admirals and commodores as it has submarines and combat ships. This is particularly striking in comparison with the US Navy, where the equivalent ratio is close to 1:1.

The Ministry of Defence also has plans to reduce the number of civilian support workers that it employs. Under current plans, the number of civilian support personnel will fall by 16,000 (28%) over the next two years. This reduction is predicated on significant efficiency

**Table 7.5. UK regular forces by rank at 1 April 2018**

	<b>General officers (OF 9–6)</b>	<b>Senior officers (OF 5–4)</b>	<b>Other officers (OF 3–1)</b>	<b>Senior enlisted (OR 9–6)</b>	<b>Other enlisted (OR 4–1)</b>	<b>Total regular forces</b>
Royal Navy	121	1,281	5,403	8,034	17,644	<b>32,483</b>
British Army	207	2,207	10,373	18,379	49,950	<b>81,116</b>
Royal Air Force	112	1,262	6,238	8,072	17,273	<b>32,957</b>
<b>Total</b>	<b>440</b>	<b>4,750</b>	<b>22,014</b>	<b>34,485</b>	<b>84,867</b>	<b>146,556</b>
<b>% of total</b>	<b>0.3%</b>	<b>3.2%</b>	<b>15.0%</b>	<b>23.5%</b>	<b>57.9%</b>	<b>100.0%</b>

Note: General officers include 83 Commodores, 149 Brigadiers and 76 Air Commodores. Total officers by rank: 7 (OF 9), 29 (OF 8), 96 (OF 7), 308 (OF 6), 1,053 (OF 5), 3,697 (OF 4), 8,128 (OF 3), 9,196 (OF 2) and 4,690 (OF 1).

Source: Ministry of Defence, 'Quarterly service personnel statistics', 1 April 2018.

<sup>17</sup> US Department of Defense, 'Active duty military personnel by rank/grade', 31 March 2018.

savings being identified and realised on a tight timescale; otherwise, going ahead with the cuts will adversely affect the level of support provided.

If these savings are not possible, then there may be a need either for additional funding or for savings to be made in other areas. This might include further scaling back of the size of the Armed Forces or making cuts in defence procurement.

### Pension costs

Excluded from the Ministry of Defence financial statements was a £7.0 billion loss reported in the Armed Forces Pension Scheme accounts for 2017–18 together with associated liabilities of £198.3 billion. The loss reflected an increase of £9.9 billion in accrued pension entitlements less £2.9 billion received in departmental contributions for current military personnel.<sup>18</sup> These contributions were used to fund payments to pensioners of £4.5 billion, requiring additional public sector funding of £1.6 billion. The UK counts these payments towards its NATO 2% commitment even though they relate to former rather than current military personnel.

Pension payments of £4.5 billion are high compared with wages and salaries of £6.3 billion for current military employees. This reflects the much smaller size of the Armed Forces today compared with previous eras, as well as the more generous nature of the Armed Forces Pension Scheme compared with other public sector schemes.

### Equipment in service

Equipment in service at 31 March 2018 is summarised in Table 7.6.

Supporting this equipment cost £7.8 billion in 2017–18, including the £1.1 billion budget of Defence Equipment and Support, an arm's-length body with 12,000 staff within the MoD responsible for supporting equipment in addition to procuring most of the £9.4 billion incurred in capital expenditure.

Equipment includes both military equipment that is specific to defence purposes and general equipment such as transport vehicles and IT systems.<sup>19</sup> The former can be divided into mobile equipment and fixed equipment.

**Table 7.6. Equipment in service at 31 March 2018**

Equipment	£ billion
Military equipment	49.5
Transport equipment	14.9
Other equipment and systems	5.0
<b>Equipment in service</b>	<b>69.4</b>

Note: Equipment in service includes £3.3 billion under leases and PFI contracts.

Source: Ministry of Defence, *Annual Report and Accounts 2017–18*.

<sup>18</sup> This excludes £0.4 billion in employer pension contributions paid to pension schemes for civilian staff.

<sup>19</sup> In this chapter, we use the term 'military equipment' for single-use military equipment (SUME) and the term 'general equipment' for dual-use equipment that can be used for military or civilian purposes.

Mobile equipment ranges from British Army unmanned aerial vehicles (UAVs) used for reconnaissance and surveillance that each weigh 450kg, up to the 65,000 tonne *HMS Queen Elizabeth* aircraft carrier. Fixed equipment includes land-based radar, dedicated military fibre optic and microwave communications networks, and defensive weapons systems.

Military equipment also includes command and control systems, cyber-warfare tools and other intangibles – for example, software used to manage logistics and supply. Weapons range from handguns and rifles through to ballistic and nuclear missiles.

These are complemented by the Skynet military satellite communications network and dedicated surveillance satellites.

**Table 7.7. UK Armed Forces mobile equipment at 1 April 2018**

<b>Royal Navy</b>		
10 nuclear submarines	4 nuclear-armed submarines	6 fleet submarines
22 combat ships	1 aircraft carrier 6 destroyers	13 frigates 2 amphibious ships
52 support and auxiliary vessels	13 minehunters 3 patrol ships 3 survey vessels 1 icebreaker 18 patrol boats	3 fleet tankers 3 support ships 3 platform docks 4 sealift ships 1 training ship
85 helicopters	30 attack helicopters	55 transport helicopters
81 marine vessels	32 landing craft 38 raiding craft 4 fast assault craft	3 mini-submarines 3 patrol vessels 1 fast insertion craft
<b>British Army</b>		
2,187 combat vehicles	227 battle tanks	1,960 fighting vehicles
2,069 support vehicles	1,907 patrol vehicles	162 engineering vehicles
123 helicopters	89 attack helicopters	34 patrol helicopters
236 aircraft	15 patrol aircraft	221 short-range UAVs
<b>Royal Air Force</b>		
203 combat aircraft	137 Eurofighters 41 Tornados	15 F-35b Lightning IIs 10 long-range UAVs
126 support aircraft	6 early warning 3 signals intelligence 9 reconnaissance	19 tankers 39 transports 50 reconnaissance UAVs
87 helicopters	27 utility helicopters	60 transport helicopters

Note: Excludes 115 jets, 37 helicopters, 168 propeller aircraft and 75 gliders used for training.

Source: Ministry of Defence, 'UK Armed Forces equipment and formations 2018', 2018.

The principal items of mobile equipment in use by the UK Armed Forces are summarised in Table 7.7.

### Assets under construction and capital expenditure

Assets under construction represents the cumulative capital expenditure incurred on assets that are not yet in service, which at 31 March 2018 amounted to £33.1 billion, as summarised in Table 7.8. This includes a substantial proportion of the capital expenditure incurred during 2017–18 of £9.4 billion given the multi-year nature of most defence procurement.

Mobile equipment includes £7 billion for the aircraft carriers *HMS Queen Elizabeth* and *HMS Prince of Wales*. *HMS Queen Elizabeth* is undergoing sea trials and is expected to be fully operational in 2020, at which point it should have 24 F-35b fighters jointly operated by the RAF and the Royal Navy. *HMS Prince of Wales* is expected to be fully operational in 2022.

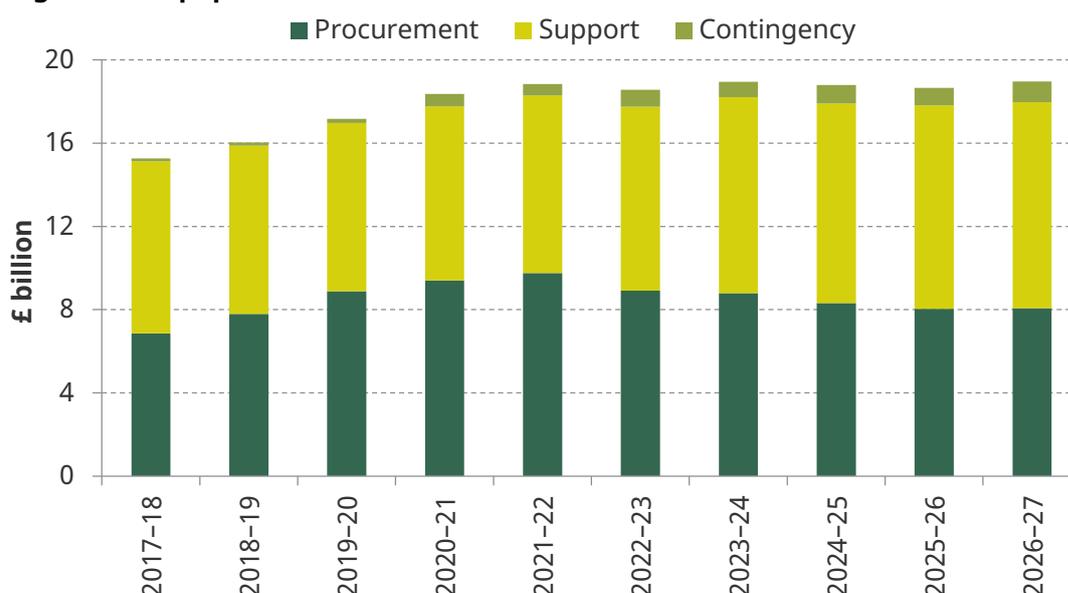
Capital expenditure in 2017–18 included £6.6 billion to construct or purchase military equipment and £2.8 billion for general equipment and other assets, including transport equipment, operating facilities and housing. The former included £1.2 billion for the

**Table 7.8. Assets under construction at 31 March 2018**

Assets under construction	£ billion
Military equipment	26.5
Transport and other general equipment, and other assets	6.6
<b>Assets under construction</b>	<b>33.1</b>

Source: Ministry of Defence.

**Figure 7.7. Equipment Plan**



Source: Ministry of Defence, 2017 to 2027 Equipment Plan.

**Table 7.9. Major procurement and support programmes, over 10 years**

Programme	Significant purchases and associated support requirements	
Submarines £44 billion	4 nuclear-armed submarines (to enter service from 2028)	7 fleet submarines
Ships £20 billion	2 aircraft carriers <sup>a</sup> 8 combat frigates <sup>b</sup> 5 general-purpose frigates <sup>c</sup>	5 patrol vessels 1 tanker Refit 6 existing destroyers
Land equipment £20 billion	Extend life of tanks to 2035 <sup>d</sup> Extend fighting vehicle lives	New fighting vehicles New patrol vehicles
Combat aircraft £18 billion	Additional Eurofighters 33 F-35b Lightning IIs <sup>e</sup>	90 F-35c Lightning IIs
Support aircraft £23bn	9 patrol aircraft 5 tactical support aircraft	7 transports <sup>f</sup> Upgrade early warning aircraft
Helicopters £10 billion	50 Apache attack helicopters Upgrade existing helicopters	Develop rotary wing UAVs
Other £36 billion	Skynet update Cyber-warfare systems	Weapons IT and other

<sup>a</sup> HMS Queen Elizabeth launched in 2017–18.

<sup>b</sup> Type 26 frigates.

<sup>c</sup> Type 31e frigates.

<sup>d</sup> Challenger 2 tanks.

<sup>e</sup> Carrier capable.

<sup>f</sup> A400 transports.

Source: Ministry of Defence, *Equipment Plan 2017*.

development of the Dreadnought submarine programme being designed to replace the existing nuclear-weapon-equipped submarine fleet and £1.8 billion on the two aircraft carriers.

As illustrated by Figure 7.7, the Ministry of Defence's 2017 to 2027 Equipment Plan sets out a £180 billion budget over 10 years, procuring £85 billion of equipment and £89 billion of equipment support, with a central contingency of £6 billion. This is an average of £18 billion a year.

Most of the equipment to be procured will replace or upgrade existing equipment. For example, the Royal Navy is partway through replacing its fleet of seven Trafalgar-class attack submarines with new Astute-class submarines. The two new aircraft carriers replace three previous carriers that were decommissioned in 2005, 2011 and 2014.

One of the challenges for the Armed Forces is that they are involved in an arms race – literally. Military equipment needs to be continually updated or replaced as other countries improve or develop equipment and weapons. For example, unmanned aerial vehicles (UAVs) are increasingly important both for long-range surveillance and strike missions and for short-range battlefield intelligence activities.

Conducting an arms race also means investing in new technology to best an opponent's equipment and weapons. This can often result in resources being expended on developing military equipment that is not (yet) needed – for example, to counter military

technologies announced by a potential opponent that have not yet been deployed. In some cases, this can be a consequence of deliberate misinformation, highlighting the importance of good intelligence in deciding on equipment priorities.

There is pressure on the Ministry of Defence to increase its procurement budget in order to strengthen the Armed Forces to meet an increased level of threat. In addition, the UK's departure from the EU may affect its participation in the Galileo geo-positioning and surveillance satellite system, with £92 million already allocated to explore a UK alternative.<sup>20</sup> Given Galileo is projected to cost €10 billion (roughly £9 billion), to develop a UK system, even in conjunction with other potential partners such as Australia, could add substantially to the defence procurement budget over the next decade.

### Property and facilities

Property and facilities of £31.9 billion at 31 March 2018 are shown in Table 7.10.

**Table 7.10. Property and facilities at 31 March 2018**

Property	£ billion
Land	9.4
Bases, buildings and facilities	12.7
Housing	9.8
<b>Property in use</b>	<b>31.9</b>

Note: Includes leased and PFI contract assets of £8.7 billion and donated assets of £0.5 billion.

Source: Ministry of Defence, *Annual Report and Accounts 2017–18*.

Property and facilities include military bases, operational structures, training schools and other buildings, as well as accommodation for military personnel and their families. The cost of maintaining bases, housing and other infrastructure amounted to £4.1 billion in 2017–18.

Housing includes leased assets under the Annington outsourcing deal for service accommodation. This estate was sold to private investors in 1996 and leased back to the Ministry of Defence under 200-year leases. Rents are due to be reviewed in 2021, which is likely to lead to a significant increase in future payments when a 58% discount no longer applies. The National Audit Office estimates that this arrangement has resulted in a loss in value to the taxpayer of up to £4.2 billion.<sup>21</sup>

### Other assets and liabilities

Other assets in the Ministry of Defence balance sheet comprise inventories of £4.4 billion, receivables of £2.8 billion and cash and financial assets of £2.2 billion. Inventories include £1.2 billion of munitions, £2.4 billion of engineering and technical stores, and £1.2 billion of other materials.

<sup>20</sup> <https://www.gov.uk/government/news/space-sector-to-benefit-from-multi-million-pound-work-on-uk-alternative-to-galileo>.

<sup>21</sup> National Audit Office, *The Ministry of Defence's Arrangement with Annington Property Limited*, HC 762, Session 2017–19, 2018.

Liabilities of £37.3 billion comprised £6.5 billion in lease and PFI contract obligations, £11.2 billion in creditors and other liabilities, and £19.6 billion in nuclear and other provisions. Leases and PFI contracts include £1.7 billion with respect to the Annington outsourcing deal (discussed above), £2.1 billion for the strategic tanker aircraft programme, £0.7 billion for the rebuild, refurbishment, management and operation of facilities for service accommodation, and £0.5 billion for the Skynet 5 satellite network.

The vast majority of provisions – £18.5 billion – has been set aside for the decommissioning of nuclear research facilities and nuclear-powered submarines, and the treatment, storage and disposal of their fuel and waste.

Pension and compensation scheme liabilities are reported in a separate set of accounts from those of the Ministry of Defence itself, comprising £195.5 billion in pension liabilities, £2.2 billion relating to the Armed Forces Compensation Scheme and £0.6 billion in other liabilities, partially offset by £0.3 billion in receivables and cash.

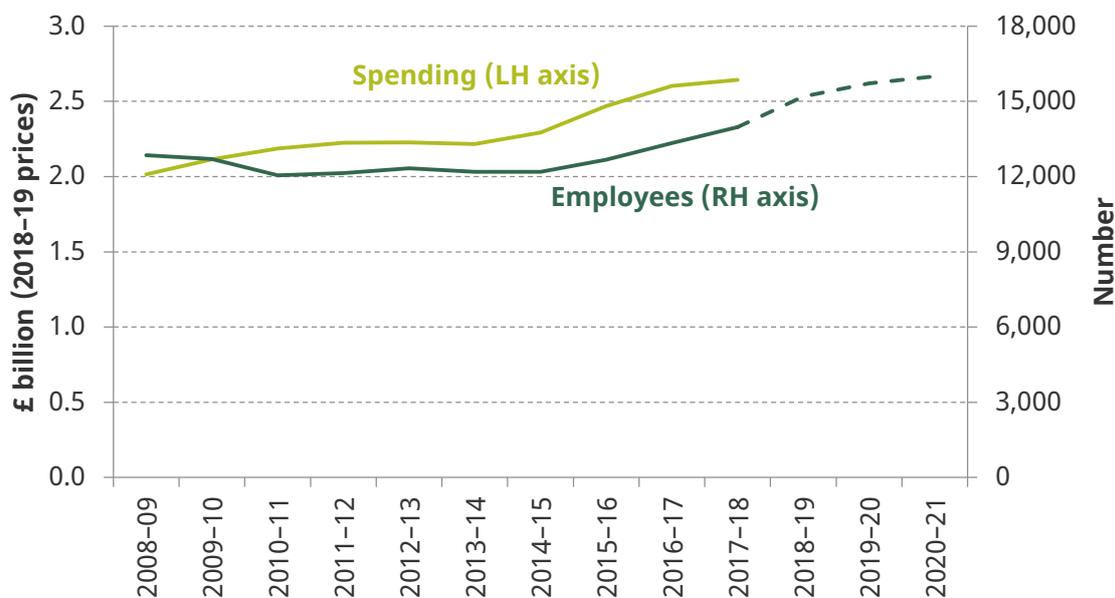
Combined liabilities of the Ministry of Defence and the Armed Forces Pension Scheme exceeded combined assets by £91.6 billion, reflecting the absence of any pension fund investments to support the payment of pensions to retired service personnel.

### Intelligence agencies

The intelligence agencies are funded collectively through the Single Intelligence Account, a separate budget heading from departmental budgets. They spent £2.6 billion in 2017–18, a 34% real-terms increase from the £1.7 billion spent in 2008–09.

Although this is a relatively small part of total defence and security spending, the Single Intelligence Account stands out as one of the few areas where spending has increased

**Figure 7.8. Single Intelligence Account: spending and staff numbers**



Note: Excludes the £300 million budget of Defence Intelligence and 3,700 military and civilian staff and the £950 million budget of the Office for Security and Anti-Terrorism and its 600 staff.

Source: Cabinet Office, *Single Intelligence Account Financial Statement 2017–18* and prior years.

significantly in the past decade, with most of the spending growth coming between 2013–14 and 2016–17.

Staff numbers fell by 6% from 12,858 at 31 March 2009 to 12,049 two years later, but have increased by 16% since then to 13,967 at 31 March 2018. This includes around 5,000 with MI5, 3,000 with SIS and 6,000 with GCHQ.

Staff numbers are projected to increase to 15,996 over the next three years, a further 15% increase, reflecting heightened risk assessments about the threats to the UK from terrorism and other sources.

Staff costs of £850 million made up just under one-third (32%) of intelligence spending, while capital expenditure amounted to £610 million (23%). The balance was predominately incurred on the purchase of goods and services, including a substantial number of IT and other contractors.

## 7.4 Financial management

To a greater extent than many other departments, the Ministry of Defence is exposed to risk. Unpredictable global events, the actions of other countries, currency movements, the risk of technological obsolescence and other factors outside of its control all make financial management a particular challenge.

This has been compounded by the departure of experienced civilian staff since 2011, which has reduced spending but at the expense of specialist policy, financial, personnel, technical and commercial expertise. For example, the National Audit Office has reported that there is a 21% shortage of trained and qualified staff within naval supply teams, while Sir John Parker's report on shipbuilding strategy reported that the MoD has lost expertise in both design and project contract management.<sup>22</sup>

The National Audit Office reported in 2017 that the MoD was short by 386 (24%) in commercial posts, which are particularly critical in negotiating billions of pounds worth of contracts.<sup>23</sup> There is a risk that further planned reductions in civilian staff could further diminish the expertise available to ensure that money is spent effectively.

Although the government routinely provides the Ministry of Defence with additional funds to pay for major military operations, such as in Iraq and Afghanistan, the Armed Forces otherwise still need to manage within their budgets.

### Managing procurement programmes

Procuring equipment presents a significant financial management challenge. The cost of platforms and associated hardware can rise significantly given its specialised nature and developments in technology. Only a small number of firms have the necessary expertise

<sup>22</sup> National Audit Office, *Investigation into Equipment Cannibalisation in the Royal Navy*, HC 525, Session 2017–19, 2017; Sir John Parker, *An Independent Report to Inform the UK National Shipbuilding Strategy*, 2016.

<sup>23</sup> National Audit Office, *Improving Value for Money in Non-Competitive Procurement of Defence Equipment*, HC 412, Session 2017–19, 2017.

and security approvals to supply military equipment, limiting the potential benefits of competition amongst suppliers.<sup>24</sup>

Cost is not the only significant factor in deciding on suppliers; security and strategic concerns have a major influence on procurement decisions. In addition, there are often domestic political concerns – for example, in the location of jobs – compounded by an institutional preference for national champions, even if they are less efficient than other options. Defence companies lobby hard to build and support this belief, utilising the experience of former senior military officers to help persuade ministers and procurement teams of their case.<sup>25</sup>

Managing multi-year complex procurement programmes is inherently challenging, especially for technologically advanced systems that are being implemented (in many cases) for the first time. Multiple risks have to be addressed, with a high likelihood of delays and cost overruns. Often these are not caused by suppliers, but by changing specification, deliberate delays (for example, to offset a cost overrun elsewhere) or problems in other programmes.

The National Audit Office reported in 2015 that, although the MoD had improved its management of procurement programmes since 2010, the Armed Forces need to develop their financial skills and project and programme management capability.<sup>26</sup>

In 2016, the Public Accounts Committee reported:

We remain concerned about project and contract management by the Department, particularly in relation to the Armed Forces who are now responsible for managing over 70% of the defence budget. Failure to improve its skills and capabilities in these areas and to put in place strong assurance mechanisms to identify any problems at the earliest opportunity could threaten the Department's ability to maintain the stability of its financial position.<sup>27</sup>

Management of these programmes is not helped by issues in evaluating risk, estimating costs and ensuring contractual flexibility to deal with changes, while regular rotation of key staff means that expertise is not built up, a disadvantage in negotiating with well-resourced and better-experienced sales teams at defence suppliers.

A small number of very expensive 'big-ticket' items make up a large proportion of the procurement budget, meaning that there is less available for smaller and therefore lower-profile but still important equipment. This puts pressure both on operational effectiveness today and on the procurement budget in later years, when a desired replacement or update turns into an essential and urgent requirement.

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<sup>24</sup> Defence Committee of the House of Commons, *Gambling on 'Efficiency': Defence Acquisition and Procurement*, HC 431, First Report of Session 2017–19, 2017.

<sup>25</sup> 'MoD staff and thousands of military officers join arms firms', *The Guardian*, 15 October 2012.

<sup>26</sup> National Audit Office, *Strategic Financial Management in the Ministry of Defence*, HC 268, Session 2015–16, 2015.

<sup>27</sup> Public Accounts Committee, *Strategic Financial Management of the Ministry of Defence and Military Flying Training*, HC 391 incorporating HC 392, Eleventh Report of Session 2015–16, 2015.

The National Audit Office concluded in early 2018 that the 2017 to 2027 Equipment Plan is not affordable even after taking account of the £6 billion contingency. It identified potential additional costs of between £4.9 billion and £20.8 billion, depending on whether the financial risks of cost growth materialise and whether the MoD achieves the procurement savings assumed in the plan.<sup>28</sup>

### Managing change and delivering efficiencies

The MoD's financial plans are dependent on delivering substantial cost savings while maintaining similar levels of military capability and delivery of the 2017 to 2027 Equipment Plan. This will require significant change in many areas of the MoD, in particular in civilian support functions where substantial reductions in headcount are planned.

The MoD is likely to find this especially challenging given the need to maintain the capacity of the Armed Forces to respond to threats at all times and the potential for events that could disrupt the delivery of efficiency programmes.

A series of National Audit Office reports have highlighted issues in delivering planned cost savings, with weaknesses identified in financial management and programme management amongst other concerns.<sup>29</sup>

For example, it took combat operations to expose shortcomings in systems for deployed inventory, leading to investment and improvements as a matter of necessity rather than because of planning or design, as reported by the National Audit Office in 2011.<sup>30</sup> Over the subsequent six years, the MoD has made progress to address these shortcomings – for example, by consolidating 270 legacy logistics systems supported by 50 separate contractors under 120 contracts into 160 systems, supported by a single contractor, with one other system supported by another supplier.<sup>31</sup> However, the fact that 160 different logistics systems remain in service provides an illustration of the challenges faced by the MoD as it seeks to streamline operations and improve efficiency.

### Management of the estate

The Ministry of Defence is responsible for housing military personnel either on or close to army bases so that they can be mobilised when needed.

Unfortunately, service accommodation is considered not to be in a good state, especially for the Army. In particular, the Annington sale and leaseback of service housing is reported to have lost the MoD billions of pounds of asset value,<sup>32</sup> with the MoD reportedly accepting that the deal was a 'catastrophic mistake', with former Defence Minister, Kevan Jones, and the former First Sea Lord, Lord West, describing it as 'incredibly bad' and

<sup>28</sup> National Audit Office, *The Equipment Plan 2017 to 2027*, HC 717, Session 2017–19, 2018.

<sup>29</sup> National Audit Office, 'Written evidence to the Defence Committee of the House of Commons', 24 October 2017.

<sup>30</sup> National Audit Office, *Ministry of Defence: The Use of Information to Manage the Logistics Supply Chain*, HC 827, Session 2010–11, 2011.

<sup>31</sup> Ministry of Defence, 'Response to freedom of information request on logistics supply chain', 16 October 2017, [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/656827/2017-09477.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/656827/2017-09477.pdf).

<sup>32</sup> National Audit Office, *The Ministry of Defence's Arrangement with Annington Property Limited*, HC 762, Session 2017–19, 2018.

'causing major problems'.<sup>33</sup> Meanwhile, the final redeployment of service personnel from Germany back to the UK has required a further £1.8 billion to be spent on the estate, especially for family accommodation.<sup>34</sup>

Other estates-based PFI projects are considered to have delivered more reasonable service quality, but have reduced financial flexibility in maintenance and upkeep spending.<sup>35</sup> The move to 'super garrisons' where military units are concentrated in a region with less frequent unit moves (with the idea of improving family life) has required investment, diverting funds that might have been available for other maintenance projects elsewhere.

The National Audit Office criticised the MoD's estate strategy in 2016, stating that maintaining the estate will be a 'huge challenge' because of years of underinvestment, with only essential maintenance carried out since 2009. This has led to a steady decline in the overall condition of the estate with assets needing to be replaced rather than repaired, a more costly option in the longer term.<sup>36</sup>

The MoD has agreed to release surplus land with capacity for 55,000 housing units between 2015 and 2020.<sup>37</sup>

### Managing currency risk

One of the major causes of over- and under-spends in the procurement budget arises from currency movements. This is because a substantial proportion of equipment purchases is denominated in US dollars or, to a lesser extent, euros, meaning that changes in exchange rates can increase (or cut) costs significantly.

The Ministry of Defence does attempt to hedge in-year currency movements through advance purchases of US dollars to protect it against exceeding the parliamentary funds allocated each year. However, there is less in the way of medium- to long-term hedging to protect against currency movements over many years.

Over the last decade, the exchange rate between the dollar and the pound has ranged from over \$1.80 to £1.00 to as low as \$1.20 to £1.00, with the rate in recent months being close to \$1.30 to £1.00.

The Defence Committee of the House of Commons highlighted in January 2018 that planned equipment purchases over a 10-year period could be £4.6 billion more expensive if the exchange rate over that period were \$1.25 to £1 instead of the \$1.55 to £1 rate used in the 2017 to 2027 Equipment Plan for 2018–19 onwards. This is illustrated in Figure 7.9.

With the current US dollar exchange rate at around \$1.30 to £1, it is likely that there will be additional costs in excess of £200 million in the current financial year. This will need to be

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<sup>33</sup> 'How the MoD's plan to privatise military housing ended in disaster', *The Guardian*, 25 April 2017.

<sup>34</sup> <https://www.army.mod.uk/who-we-are/future-of-the-army/army-basing-programme>.

<sup>35</sup> MoD Private Finance Unit, *Review of MoD PFI Projects in Construction and Operation*, 2005.

<sup>36</sup> National Audit Office, *Delivering the Defence Estate*, HC 782, Session 2016–17, 2016.

<sup>37</sup> Ministry of Housing, Communities and Local Government, *Public Land for Housing Programme 2015–2020*, 2018.

**Figure 7.9. Currency exposure in the Equipment Plan over 10 years**

Source: Defence Select Committee, *Indispensable Allies: US, NATO and UK Defence Relations*, HC 387, Eighth Report of Session 2017-19, 2018 (National Audit Office analysis).

funded either through savings elsewhere within the MoD's budget or through additional funding through the supplementary estimates process.

There are several ways to address currency risk in the procurement budget, which could best be managed at a national rather than departmental level. The most straightforward approach would be to denominate a proportion of parliamentary funding for defence in dollars. This would remove a substantial proportion of the risk from the procurement budget, preventing both the need to offset sterling weakness with cuts in personnel, equipment or capabilities, and reducing the incentive from a stronger exchange rate to incur unplanned spending to absorb currency gains.

HM Treasury would still need to manage the risk that currency movements in the defence budget pose to the overall public finances. However, given its portfolio of foreign reserve assets and liabilities, it is much better placed than the Ministry of Defence to do so.

## 7.5 Conclusion

### Funding for defence needs to be better managed and made more secure

The National Audit Office and others have identified multiple issues in the management of the defence budget, ranging from the likelihood of overruns in the 2017 to 2027 Equipment Plan to the challenges in filling technical roles in the Armed Forces and in civilian support organisations in the MoD.

Equipment costs for each successive generation of equipment continue to increase well above inflation.<sup>38</sup> This makes strong project and programme management even more important if the MoD is to deliver military capabilities in an efficient and cost-effective way.

In particular, currency risks need to be better managed, which is more likely if done at the national rather than departmental level. This would avoid cuts to other parts of the defence budget when sterling weakens and reduce the incentive to increase spending when sterling strengthens.

Long-term procurement and strengthening homeland defence would be aided through longer-term certainty over budgets, ensuring adequate resources are devoted to training and development and to sufficient pay and conditions to attract skilled personnel. These areas need to be addressed as part of the Modernising Defence Programme and the 2019 Spending Review.

### **The long decline in defence spending is over**

Over the last 50 years, the UK has substantially reduced its spending on defence as the perceived threats to its security and interests have fallen. This has enabled public funds to be put to other uses, in particular expanding health and welfare provision domestically. That trend has come to an end.

The NATO 2% commitment provides a floor in spending on defence and security. The UK currently meets this target – unlike most other NATO countries – although only just. Additional cuts as a share of national income to free up funds for other priorities are unlikely to be possible without breaching promises made to allies and risking damage to the UK's stature as a leading member of NATO and the wider Western alliance.

Furthermore, there are calls from within government to increase defence capabilities in response to a higher level of perceived threat and in order to maintain or enhance the UK's strategic position as a major power. This includes from the cross-party Defence Committee of the House of Commons, who have argued that the UK should spend 3% rather than 2% of national income on defence, which would imply an increase in annual spending of £20 billion. It is clear there is pressure on the Chancellor to allocate additional funding to defence and security.

Of course, defence is just one of many areas with competing demands for greater public funding, driven both by concerns about the affordability of current plans and by the debate over what the UK's aspirations as a global military power should be.

The government needs to balance these demands and ensure that the public finances are sustainable over the longer term. Difficult choices will need to be made.

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<sup>38</sup> K. Hartley, 'UK defence inflation and cost escalation', *Defence and Peace Economics*, 2016, 27, 184–207.

## 8. How the UK spends its aid budget

Arthur Baker (CGD), Sam Crossman (IFS), Ian Mitchell (CGD),  
Yani Tyskerud (IFS) and Ross Warwick (IFS)

### Key findings

- **The UK has reached its target of spending 0.7% of GNI on overseas aid for five consecutive years.** This represented a £14 billion commitment in 2017. Continuing to meet this would, on the latest growth forecasts, require annual spending to rise by a further £1 billion by 2022. ODA spending has risen from 0.8% of total government expenditure in 2000 to 1.1% in 2010 and 1.7% in 2017.
- **The Department for International Development (DfID) remains the main spender of UK aid, but other departments are playing an increasingly important role.** DfID spent 73% of UK aid in 2017, down from 88% in 2013. The next most significant spender was the Foreign and Commonwealth Office.
- **Bilateral aid – provided for specific countries or regions – makes up a majority of UK aid.** The focus has not changed substantially in recent years, with humanitarian, health and education projects accounting for up to 50% of bilateral aid spending. There has been a change in country focus, however. Only five of the top ten recipient countries in 2016 were also in the top ten in 2012. For example, India was the largest recipient of aid in 2012 and has since dropped out of the top ten. Pakistan and Syria were the top two recipients of UK aid in 2016.
- **New areas of focus for UK aid have also emerged in line with the 2015 aid strategy.** Notable is an increased emphasis on ‘development capital’: public investments in the private sector with development objectives, but which create a returnable asset. These meet the international definition of aid, but do not count towards the deficit – which could create incentives to spend more in this way than would otherwise be optimal. HM Treasury has set minimum targets on this kind of spend for DfID, which increased from £100 million in 2013–14 to £5 billion for the period 2016–17 to 2019–20.
- **In 2016, the UK was the fifth-largest economy in the world but the largest contributor of core aid funds to multilateral institutions in absolute terms.** Over 60% of this aid went to just four organisations, with the EU the largest recipient overall. A number of important decisions regarding spending through these channels are approaching, with both Brexit and significant replenishments for other institutions taking place in 2019.
- **During the 2019 Spending Review, aid spending will come under close scrutiny.** With spending likely to again be dispersed across departments, the government needs to be clear about the overarching objectives for UK aid. Robust and transparent processes should be in place to help ensure that funds are allocated to where they can have the greatest impact, with assurances that departments are well-equipped to manage this spend effectively.

## 8.1 Introduction

In 2017, the UK met its target to spend at least 0.7% of gross national income (GNI) on official development assistance (ODA) for the fifth consecutive year. This is in line with the UK's endorsement of a UN Resolution in 1970<sup>1</sup> and the commitment made by the Labour government at the G8 Summit in Gleneagles in 2005, which was subsequently adopted by the coalition government in 2010. The target was enshrined into UK law in 2015<sup>2</sup> and there is currently a cross-party political consensus to maintain it.

Meeting the 0.7% target – which applies only to government aid flows – sets the UK apart on the international stage; in 2017, the OECD reports that seven countries did so. Domestically, this level of overseas aid spending is even more notable given the UK's fiscal environment, and in particular the significant cuts to departmental spending that have taken place since 2010–11 (see Chapter 4).

In light of its commitment to aid spending, the government has updated its approach to delivering aid, placing a greater emphasis on spending through a variety of government departments and cross-government funds. At the same time, it is seeking to make the potential benefits to the UK's national interest a more explicit aim of ODA. In practice, this means that ODA is now increasingly being spent by different agencies; while the Department for International Development (DfID) remains the primary spender of UK aid, non-DfID ODA has more than doubled as a share of the total since 2009 and now accounts for over a quarter of UK ODA expenditure.

It is too early to say conclusively how recent developments are impacting upon spending patterns, but the data paint a picture of both continuity and change. The increases in aid spending since 2013 have all been delivered through more bilateral ODA, provided by the donor to target a specific country or region. This spending remains highly concentrated: in 2016, more than half of bilateral spending went to ten countries, of which five were also large recipients in 2012. Humanitarian, health and education programmes continue to be important priorities for the UK, but new areas of focus are emerging too.

One notable change is the support for economic development activities through increased public spending on capital investment in developing countries in the form of loans and equity purchases, including through CDC, the UK's development finance institution. The Treasury has set DfID a minimum requirement for this kind of spend – which does not add to the headline measure of the deficit – of £5 billion between 2016 and 2021. The Secretary of State for Development, Penny Mordaunt, has recently signalled that she wants to make changes to how the returns on this spending are classified. Although the details of this proposal are not yet clear, the level of attention that her speech attracted is indicative of the ongoing interest in how the government manages its overseas aid spending.

The next few years will provide an opportunity for the government to review its strategy for aid spending. Currently, 11% of the UK's ODA spending is channelled through the European Union. The government has indicated that it would like to continue to contribute to EU-led development activities in the future, subject to some conditions. But Brexit has

<sup>1</sup> UN General Assembly Resolution 25/2626, <http://www.un-documents.net/a25r2626.htm>.

<sup>2</sup> International Development (Official Development Assistance Target) Act 2015, [http://www.legislation.gov.uk/ukpga/2015/12/pdfs/ukpga\\_20150012\\_en.pdf](http://www.legislation.gov.uk/ukpga/2015/12/pdfs/ukpga_20150012_en.pdf).

also had an impact on the UK's changing priorities for its aid budget; recent development reviews and strategies have underlined the role that ODA might play in supporting the UK's foreign policy, trade and security objectives as it prepares for a different role on the international stage after it leaves the EU.

More immediately, the 2019 Spending Review will enable the government to consider explicitly its ODA spending alongside its other commitments and priorities (see Chapter 4) and aid spending by DfID and across other government departments will undoubtedly be subject to close scrutiny.

The Spending Review is also a chance for the government to improve the process of allocating, monitoring and evaluating aid to promote greater coherence and effectiveness. This comes at a good time; the government appears to have adjusted to managing a larger aid budget, and departments that are relatively new to ODA spending have gained some experience in this area. An opportunity to reflect on the lessons learned so far and the improvements to be made going forward is welcome. But for the Spending Review to achieve these improvements, it is vital that the government is clear and transparent about the objectives of its ODA spend and that it puts in place strong mechanisms to ensure that its aid budget is well spent.

This chapter does not seek to offer new evidence on the effectiveness of UK ODA or to provide recommendations on how – or how much – aid should be spent. Instead we aim to do four things. In Section 8.2, we describe trends in aggregate ODA spending in the UK and internationally, incorporating a discussion of the history of the 0.7% target. Section 8.3 briefly outlines recent developments in UK ODA strategy and delivery. Section 8.4 describes trends in who spends ODA and Section 8.5 looks at what UK ODA is spent on, in terms of the mix between bilateral and multilateral spending, and the recipient countries and thematic spending areas. Section 8.6 concludes.

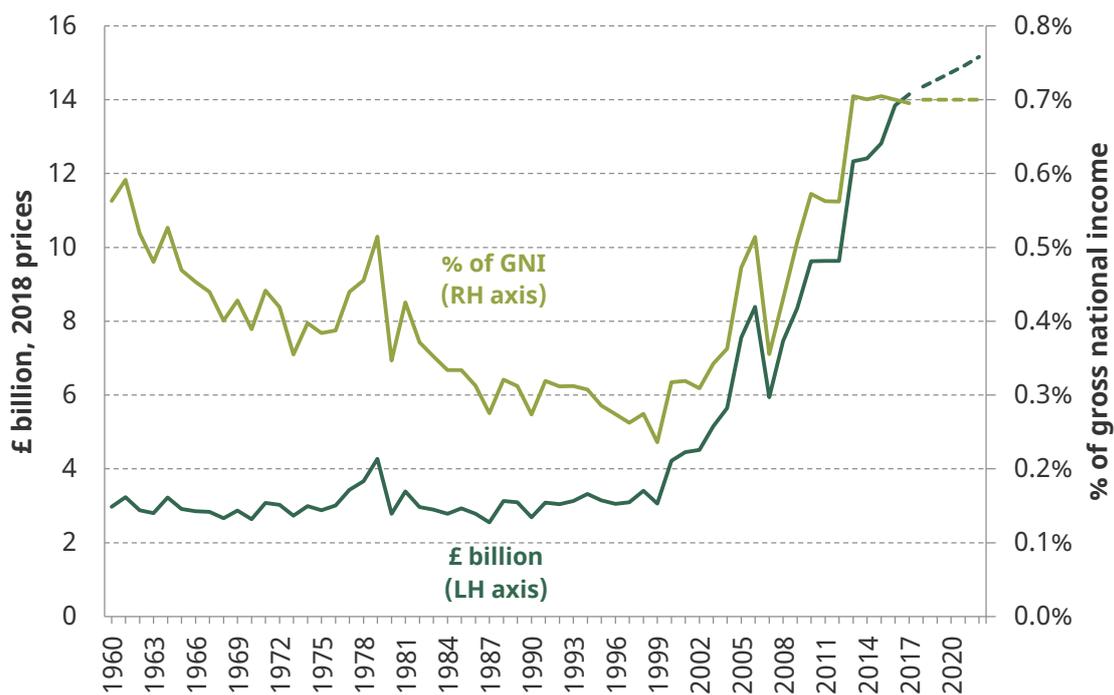
## 8.2 Reaching the 0.7% target

### The domestic context

In 2017, the UK spent £14 billion on ODA, representing approximately 1.8% of total government spending and 0.7% of national income. This is comparable to total Home Office expenditure and is high by UK historical standards.

Figure 8.1 shows the evolution of UK ODA spending since 1960, both in terms of total amount (in real terms) and as a share of national income (as measured by gross national income, GNI). Real ODA spending remained relatively stable between 1960 and 1999, though it fell as a percentage of national income from 0.6% in 1960 to just over 0.2%. Since the turn of the millennium, however, ODA has increased by over 350% in real terms and tripled as a share of national income. These increases in spending have occurred since the establishment of the Department for International Development (DfID) in 1997, which had previously operated as the Overseas Development Administration under the Foreign and Commonwealth Office (FCO). The establishment of a standalone, cabinet-level department demonstrated a marked shift in the incoming Labour government's approach to development cooperation. ODA spending has risen from 0.8% of total government expenditure in 2000 to 1.1% in 2010 and 1.7% in 2017, which, as shown in Figure 8.2, is its highest share of government spending since at least 1960.

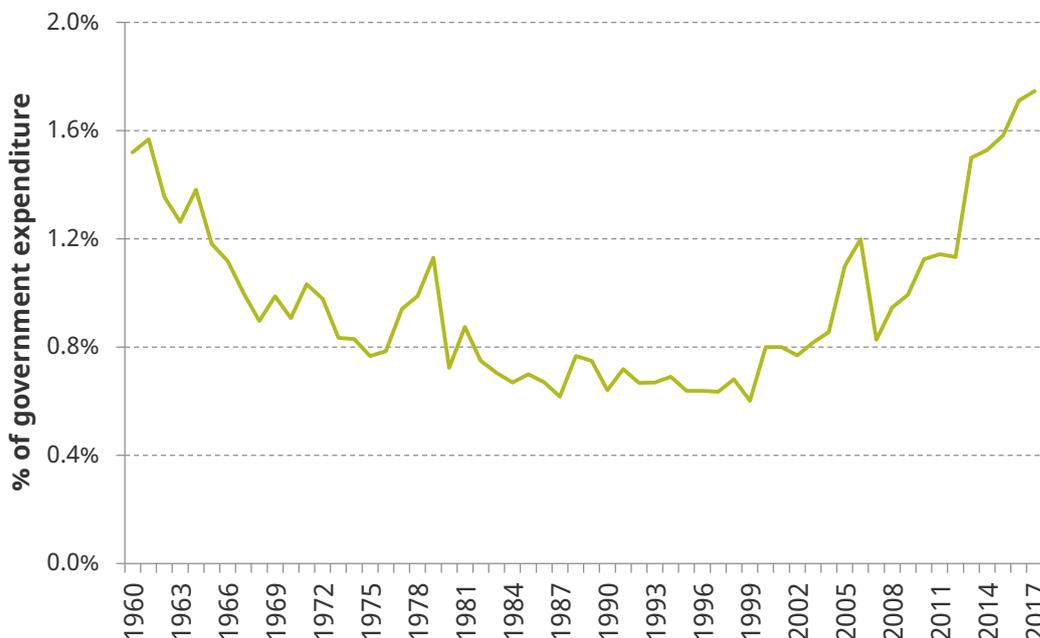
**Figure 8.1. Historical UK ODA spending**



Note: Forecasts calculated on the basis that real growth in GNI is equal to real growth in GDP, and that the UK continues to spend 0.7% of national income on ODA.

Source: Authors' calculations using data from OECD, ONS and OBR.

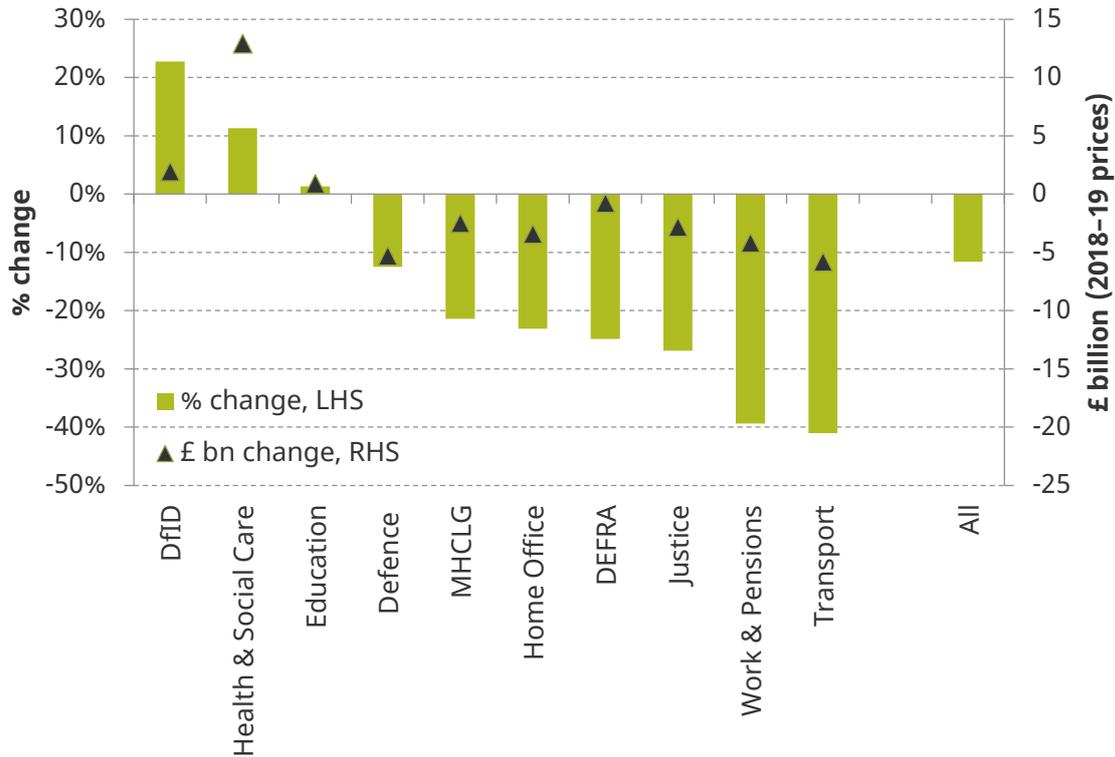
**Figure 8.2. Total UK ODA as a percentage of government expenditure**



Note: Government expenditure here is measured by total managed expenditure (TME). This covers spending by the entire public sector.

Source: ODA data are from the OECD DAC; UK TME data are from the ONS.

**Figure 8.3. Changes in departmental spending 2010–11 to 2017–18 for selected departments**



Note: MHCLG figures are for Housing and Communities. These figures are based on total departmental expenditure limits, which are the budgets set by departments for the running of services and departmental costs. Expenditure that is “demand led” – such as social security payments – are outside of these budgets.

Source: Authors’ calculations using *Public Expenditure Statistical Analyses 2018* and GDP deflator from HM Treasury.

The commitment to increased aid spending has been sustained over the last two decades and the 0.7% target currently enjoys broad cross-party support; the Conservatives, Labour, the SNP and the Liberal Democrats all made pledges to maintain it in their 2017 general election manifestos. Assuming that the UK continues to spend exactly 0.7% of GNI on aid, this implies a further increase of just over £1 billion a year in ODA by 2022; most of this rise – £600 million a year – would come during the period from 2020 to 2022, after the current Spending Review period, which runs to March 2020.

The rapid rise in the UK’s aid spending over the last 20 years is particularly notable given the pressures on the public finances during this period, including the financial crisis, and a period of prolonged stagnation in average living standards. As illustrated in Figure 8.3, during the period 2010–11 to 2017–18, most spending departments have experienced budget cuts; however, DfID was one of the few departments whose allocated expenditure increased, by 23% in real terms.

Surveys suggest that the public overestimate the total scale of aid spending in the UK. Adults surveyed for the Aid Attitudes Tracker (AAT) – a longitudinal, nationally representative survey – estimate, on average, that 16% of government spending is allocated to aid – around 10 times the actual figure. More generally, the British public has a mixed attitude towards aid spending, and it can be controversial. When informed about

the full monetary cost of aid and the percentage of government spending it represents, roughly half of British adults believe it should be cut, while 45% think it should be maintained or increased. Furthermore, half of the UK population believe that government aid is ineffective.<sup>3</sup>

Perhaps partly in response to this ambivalent attitude on the part of the public, UK ODA spending is heavily scrutinised. Detailed information about most funded projects is published on the Devtracker website, and critical oversight is provided by three independent UK bodies – the House of Commons International Development Committee (IDC), the National Audit Office (NAO) and the Independent Commission for Aid Impact (ICAI) – as well as by international peer review by the OECD. The programmes supported by UK ODA are disbursed across a wide geographic and thematic range – and the beneficiaries are also both geographically and politically remote – which might justify this level of scrutiny.

### The international context

All of the members of the OECD’s Development Assistance Committee (DAC), except the US and Switzerland, have endorsed the target to spend 0.7% of GNI on ODA.<sup>4</sup> By 1980, four countries had reached the target, and it was only at the 2005 G8 Summit in Gleneagles that a formal commitment was made, with EU-15 countries agreeing to reach 0.7% by 2015 and the UK setting itself an earlier deadline of 2013. No countries outside Europe made such a commitment to increase their ODA contributions.<sup>5</sup> Box 8.1 outlines the international history of the 0.7% target.

#### Box 8.1. The history of the 0.7% target and the definition of ODA

The 0.7% target applies to official development assistance. Since 1969, this has been defined by the OECD’s Development Assistance Committee as ‘those flows to countries and territories on the *DAC List of ODA Recipients* and to multilateral institutions which are:

- provided by official agencies, including state and local governments, or by their executive agencies; and
- each transaction of which: (a) is administered with the promotion of the economic development and welfare of developing countries as its main objective; and (b) is concessional in character and conveys a grant element of at least 25%.<sup>a</sup>

The origin of the 0.7% target specifically is often linked with academic work in the 1960s that sought to estimate the investment needed to fill savings gaps in developing countries to increase growth rates. A number of studies seemed to agree that investment flows of around 1% of ‘developed-world’ GNI would be sufficient to bring about sustained increases in living standards in recipient countries.<sup>b</sup>

<sup>3</sup> See the DevCommsLab website: <https://devcommslab.org/attitudes/>.

<sup>4</sup> The DAC is a forum which includes many of the largest funders in development and was established to promote development cooperation and policies that contribute towards sustainable development.

<sup>5</sup> Organisation for Economic Cooperation and Development, ‘The 0.7% ODA/GNI target: a history’, <http://www.oecd.org/dac/stats/the07odagnitarget-ahistory.htm>.

However, as a significant portion of total investment flows were private and thus not programmable or predictable for governments, appetite remained for a separate target for government aid flows. The Pearson Commission, set up by the World Bank in 1968, was tasked with investigating the effectiveness of international aid and the potential for a separate minimum target for official aid flows by governments. The Commission's 1969 report concluded that ODA should 'be raised to 0.70% of donor GNP [gross national product] by 1975, and in no case later than 1980'.

It is not clear to what extent this 0.70% figure was based on analytical findings as opposed to political arbitration. Some accounts indicate that, with ODA having reached 0.54% in 1961, 0.60% was deemed too modest and 0.70% was selected on the basis that it was a 'simple, attainable and adequate target'.<sup>c</sup> This target level was adopted by the UN, and since then it has become a focal point for international aid efforts.

The DAC list of ODA recipients determines which countries are eligible to receive ODA. To be eligible, a country must be either a Least Developed Country (LDC) or a low- or middle-income country. The former categorisation is determined by the United Nations (UN) on the basis of income, human assets and economic vulnerability.<sup>d</sup> The latter group comprises countries with a per-capita GNI below \$12,235 (approximately £9,300) according to the World Bank's Atlas method. Countries in either of these groups are eligible for ODA for the period 2018–20. In total, 143 countries are now eligible, with Chile, the Seychelles and Uruguay removed from the 2014–17 DAC list because of their graduation to high-income status.

<sup>a</sup> <http://www.oecd.org/dac/stats/officialdevelopmentassistancedefinitionandcoverage.htm>. Beyond 2018, the rules dictating which loans are eligible to be counted as ODA are changing. Specifically, the minimum grant element and reference discount rate will depend on the recipient and only the grant-equivalent element will count as ODA.

<sup>b</sup> P. N. Rosenstein-Rodan, 'International aid for underdeveloped countries', *Review of Economics and Statistics*, 1961, 43, 107–38; H. B. Chenery and A. M. Strout, 'Foreign assistance and economic development', 1966, *American Economic Review*, 56, 679–733.

<sup>c</sup> M. A. Clemens and T. J. Moss, 'The ghost of 0.7 per cent: origins and relevance of the international aid target', *International Journal of Development Issues*, 2007, 6, 3–25.

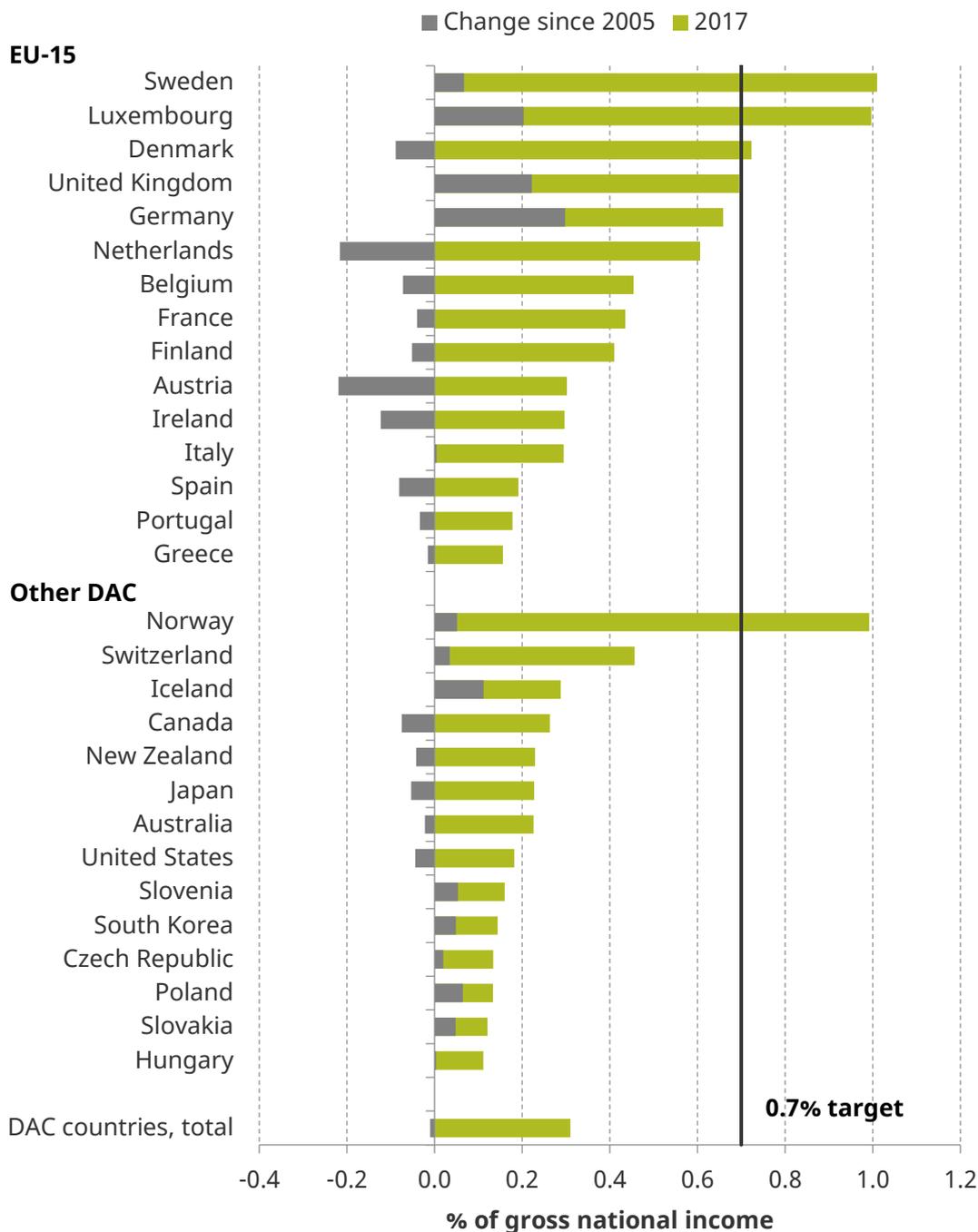
<sup>d</sup> For more detail on the criteria for identification of LDCs, see <https://www.un.org/development/desa/dpad/least-developed-country-category/ldc-criteria.html>.

Despite the international commitment to the 0.7% target, only a handful of countries actually meet it. In 2017, out of 29<sup>6</sup> DAC countries, only five – Denmark, Luxembourg, Norway, Sweden and the UK – met the target, and the contribution across all DAC countries was only 0.31% of GNI. Two further countries who report to the DAC – Turkey and the United Arab Emirates – also exceeded the 0.7% target, registering ODA flows of 0.95% and 1.31% of GNI respectively. As Figure 8.4 shows, the increase in ODA as a share of GNI registered by the UK since the Gleneagles Summit is the second-largest in the world at 0.22% of GNI – only Germany has had a larger increase.

<sup>6</sup> There are 30 members of the DAC. The EU is the 30<sup>th</sup> member.

Overall, there has been little change in the ratio of ODA to GNI amongst DAC countries in recent years. Ten of the EU-15 countries have actually decreased their relative ODA contributions since the pledges made in the mid 2000s. The US, which has recognised but never formally endorsed the target, spends 0.18% of GNI, but made the largest

**Figure 8.4. Spending on ODA, 2005–17, by country**



Note: No data are available for Slovakia in 2005, so the 2004 total is used instead.

Source: Authors' calculations using OECD data.

contribution in absolute terms in 2017 (£27.8 billion in 2018 prices), followed by Germany (£19.5 billion) and the UK (£14.1 billion).<sup>7</sup>

In 2016, Germany joined the UK as the only other G7 country to meet the target, and was able to achieve this partly because of an increase in spending on newly arrived refugees. Its contribution has since fallen to 0.66% in 2017, and it may miss the target again in future years. Although the German government has committed to continuing to meet the target, recent budget negotiations saw reduced funding for the Ministry of Economic Cooperation and Development in 2018 and slower growth in funding from 2019 through 2022.<sup>8</sup> In France, President Emmanuel Macron has committed to increasing ODA from 0.43% of GNI in 2017 to 0.55% in 2022.<sup>9</sup>

### Managing the 0.7% target

The target to spend 0.7% of national income on overseas aid – and the drive to meet this commitment – have shaped the UK's ODA expenditure over the past few years. Advocates of the UK's ODA target argue that it serves as an important reference point for foreign aid efforts, both domestically and in the international sphere. Although few other countries actually meet the target, its proponents argue that it promotes global collaborative action and that it helps to foster sustained political commitment to foreign aid, in turn facilitating longer-term planning of projects and investments.

At the same time, this target is a somewhat unusual way to allocate spending. First, ODA is one of the few areas where spending is explicitly linked to the size of the economy, which – as discussed in Chapters 2 and 3 – can be difficult to predict exactly. Other areas of public spending have targets for minimum expenditure; for example, the National Productivity Investment Fund discussed in Chapter 6 was expanded to £31 billion in the Autumn 2017 Budget. But the closest comparator to the 0.7% target is the NATO commitment, discussed in Chapter 7, to spend 2% of national income on defence. Both of these targets aim to coordinate spending across many countries.

The second notable feature of the target is that it has been written into UK legislation. The International Development (Official Development Assistance Target) Act 2015 requires the Secretary of State to report annually on the status of the target and to provide a statement to parliament, if it is not met, outlining why. In practice, this means that the government must identify a 'spender of last resort' to ensure that its legal commitment is met each year. This role falls to DfID.

The final unusual feature of the 0.7% target is the precision that it demands. Legally, the 0.7% commitment is a spending floor, requiring the government to spend at least this much on ODA. But government policy is to also treat this as a ceiling: rather than aiming to spend 0.7% or a bit more, the government tries to spend 0.7% as precisely as possible.

<sup>7</sup> It is important to note that other flows to developing countries, such as foreign direct investment (FDI) and philanthropic giving by individuals and charities, are outside the scope of ODA and can be significant.

<sup>8</sup> Reuters, 'German's spending plans likely to disappoint at home and abroad', 2 May 2018, <https://uk.reuters.com/article/uk-germany-budget/germanys-spending-plans-likely-to-disappoint-at-home-and-abroad-idUKKBN1I31GH>.

<sup>9</sup> France Diplomatie, 'Speech by President Emmanuel Macron: Ambassadors' Conference 2018', August 2018, <https://www.diplomatie.gouv.fr/en/the-ministry-and-its-network/events/ambassadors-week/ambassadors-week-edition-2018/article/speech-by-president-emmanuel-macron-ambassadors-conference-2018>.

So far, it has been remarkably successful in this: since 2013, the ratio of ODA to national income has not deviated by more than 0.005 percentage points from the 0.7% target.

Taken together, these three features mean that the government is committed to a level of ODA spending that is precise, binding and yet somewhat uncertain from year to year. This has influenced both the path that DfID has taken to meet the target and the available options for managing the aid budget going forward.

As in any area of public spending, spending driven by input targets (to increase the amount of money spent) rather than by outcome targets (to reduce measured poverty by a given amount, for example) can be at risk of being poorly directed.

Having such a precise target to meet each year can also potentially influence how the government spends its ODA budget. The government's commitment to meeting the target so precisely creates incentives to ensure that the 'right amount' of spending is classified as ODA each year. This could have costs in terms of transparency – for example, the Secretary of State may be reluctant to declassify projects that she believes do not meet the definition of ODA spending, for fear of falling below the threshold.

The level of precision may also have an administrative cost. Like all departments, DfID has departmental spending limits and plans (decided on a fiscal-year basis), but as the legislated 'spender of last resort' it must also consider the ODA target across government (reported on a calendar-year basis). Alongside problems with accurately forecasting GNI, this may complicate planning projects.

Meeting the target for the first time in 2013 meant spending rose quickly. This presented particular challenges, although in practice many of the risks were anticipated. DfID was aware of the impending funding increases a number of years in advance of first meeting the target in 2013 and made preparations by strengthening its business processes, developing a larger programme of projects, changing the size and composition of its workforce, and improving its focus on results.<sup>10</sup> Although DfID's administrative budget has been cut by over 40% since 2010–11 while its total departmental expenditure has risen by 23%,<sup>11</sup> the number of full-time-equivalent civil servants at DfID has increased by 60% in the same period.<sup>12</sup>

The National Audit Office has examined the government's approach to meeting the target twice and documents some of the adjustments made by DfID and other departments. In 2013, it found evidence that DfID did not spend its new, higher, budget smoothly over the year. DfID spent 40% of its budget in the last two months of the year, approving additional spending of perhaps £800 million. Standard departmental procedures were followed, but the NAO states that the 'need to spend quickly limited the teams' choice of projects and delivery routes for the new and extended projects'.<sup>13</sup> More recent assessments suggest

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<sup>10</sup> National Audit Office, *Managing the Official Development Assistance Target*, 2015, <https://www.nao.org.uk/report/managing-the-official-development-assistance-target/>.

<sup>11</sup> Authors' calculations using Public Expenditure Statistical Analyses (various years) and GDP deflator from HM Treasury.

<sup>12</sup> Institute for Government, 'Civil service staff numbers', September 2018, <https://www.instituteforgovernment.org.uk/explainers/civil-service-staff-numbers>.

<sup>13</sup> Page 19 of National Audit Office, *Managing the Official Development Assistance Target*, 2015, <https://www.nao.org.uk/report/managing-the-official-development-assistance-target/>.

that DfID has made improvements to its processes over time. The NAO's 2017 report found that DfID had developed a pipeline of potential projects to increase choice in decision-making, with a smoother profile of ODA expenditure across the calendar year.<sup>14</sup>

One way that DfID is able to meet its precise spending goals each year is by making use of the flexibility it has with the timing of certain ODA payments. For instance, payments to multilateral institutions often take the form of promissory notes, which count as ODA when they are issued rather than when they are cashed. DfID is also involved in many multi-year projects, where payments can easily be shifted over time.

While these mechanisms can help the department to meet its annual spending goals, it is important to note that the 0.7% commitment is far from the only target in development spending. The government often introduces new targets for how ODA spending should be allocated across areas and particular policy priorities. Some of these are discussed in greater detail in Sections 8.3 and 8.5. These targets can help to ensure that new policy priorities are reflected quickly in the government's overall aid strategy. However, they have also been criticised by the OECD DAC, which has recommended that the UK should 'minimise spending targets and manage them in ways that support flexible, context-based programming'.<sup>15</sup> Meeting these targets for where and how to spend ODA adds another challenge for departments trying to deliver a balanced programme of aid spending that meets the overall spending targets while still maintaining a long-term strategy and ensuring value for money in all projects.

### 8.3 Recent changes in the UK aid strategy

Historically, the UK's spending on aid has primarily been justified on two grounds. First, from a moral perspective, it is a demonstration of the UK's commitment to 'helping the millions of people around the world who live in poverty' and to supporting the achievement of development milestones such as the Global Goals.<sup>16</sup> The fact that spending in low- and middle-income countries can drive big social and economic gains (basic health programmes such as vaccinations are one example with a high 'benefit-to-cost' ratio) further strengthens this rationale. Second, from a strategic and geopolitical perspective, ODA supporters point to the role that aid plays in strengthening the UK's influence internationally and supporting the UK's 'place in the world'.<sup>17</sup>

However, beyond the trends in aggregate UK aid, there have been a number of important developments since 2015, which are influencing the strategy and delivery of ODA spending. In particular, the government now sees ODA spending as playing a broader role in achieving its objectives.

<sup>14</sup> National Audit Office, *Managing the Official Development Assistance Target: A Report on Progress*, 2017, <https://www.nao.org.uk/wp-content/uploads/2017/07/Managing-the-Official-development-Assistance-target-a-report-on-progress.pdf>.

<sup>15</sup> Page 17 of OECD, *OECD Development Co-operation Peer Reviews: United Kingdom 2014*, 2014, <http://www.oecd.org/dac/peer-reviews/UK%20peer%20review%202014.pdf>.

<sup>16</sup> Page 5 of HM Treasury and Department for International Development, *UK Aid: tackling global challenges in the national interest*, November 2015, [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/478834/ODA\\_strategy\\_final\\_web\\_0905.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/478834/ODA_strategy_final_web_0905.pdf).

<sup>17</sup> Ibid.

First, six months after enshrining the target into law in 2015, HM Treasury and DfID published *UK Aid: Tackling Global Challenges in the National Interest*, which set out their approach to organising ODA spending. Published as part of the 2015 Spending Review, this strategy reaffirmed the government's commitment to the 0.7% target while seeking to build 'public confidence' in aid spending by making benefits to the UK an important and explicit consideration. As the title suggests, the strategy aims to align the dual goals of improving economic development and welfare in developing countries and of enhancing UK security and prosperity. Of course, there are many ways to promote the UK's security and prosperity, and other channels may be more direct than ODA spending. But the underlying narrative of this strategy is that UK aid can have a role in improving global security and prosperity – whether through improved living standards and governance, the opening up of new markets abroad, or global public goods produced by research – and that, for a variety of reasons, this is in the UK's long-term interest. Since 2015, there have been three Secretaries of State for International Development, but the broad thrust of the strategy remains the same.

The strategy outlines four key objectives:

- strengthening global peace, security and governance;
- strengthening resilience and response to crises;
- promoting global prosperity;
- tackling extreme poverty and helping the world's most vulnerable.

A key mechanism for achieving the shift in focus outlined in the 2015 aid strategy – and perhaps also for broadening support for the 0.7% spending target – has been to distribute an increasing proportion of ODA through departments other than DfID, as well as through a number of cross-government funds, with the expectation that they should be responsible for 30% of spending by 2020.<sup>18</sup> This figure has already almost been reached, as discussed further in the next section. The government has also set out plans to deepen partnerships with researchers and academia, civil society and the private sector.

The second development shaping the ODA strategy is the UK's decision to leave the European Union. Both DfID's 2016 Bilateral and Multilateral Development Reviews and its 2017 Economic Development Strategy are framed in this context. The most direct implication of Brexit relates to the contributions that the UK makes to the EU budget, covered in Section 8.5. However, these documents also emphasise the role that ODA might play in supporting the UK's foreign policy, trade and security objectives and in facilitating the reorientation of the UK's role on the international stage after March 2019.

An increased focus on private sector engagement in developing countries is also reflected in a shift toward supporting economic growth and increasing 'development capital'. This is defined by DfID as 'public investment made in the private sector to achieve development objectives'.<sup>19</sup> Development capital investments, also known as 'non-fiscal'

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<sup>18</sup> Page 5 of National Audit Office, *Managing the Official Development Assistance Target: A Report on Progress, 2017*, <https://www.nao.org.uk/wp-content/uploads/2017/07/Managing-the-Official-development-Assistance-target-a-report-on-progress.pdf>.

<sup>19</sup> Page 54 of Department for International Development, *Rising to the Challenge of Ending Poverty: The Bilateral Development Review 2016, 2016* [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/573889/Bilateral-Development-Review-2016.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/573889/Bilateral-Development-Review-2016.pdf).

spending, can include loans, equity investments, and certain contributions to multilateral development banks. The Treasury requires DfID to spend £5 billion in this way over the 2015 Spending Review period, compared with a requirement of £100 million in 2013–14.<sup>20</sup> This sort of aid does not impact total managed expenditure (TME) because it involves a swap of financial assets, leaving the headline measure of borrowing (public sector net borrowing) unaffected by the transaction.

Possibly as part of the process of meeting this target, in 2017 parliament made the decision to quadruple the cap on DfID's potential stake in CDC Group plc (formerly the Commonwealth Development Corporation), from £1.5 billion to £6 billion, with provisions for a future increase to £12 billion. CDC is the UK's development finance institution (DFI), whose primary role is to provide investment in private enterprise in developing parts of the world. This institution is wholly owned by DfID and, as a public corporation, capital support provided to CDC by DfID does not count toward TME either, again leaving the headline measure of borrowing unchanged. Since the cap was lifted, DfID has announced capital injections of at least £3.1 billion over the next six years, covering the majority of DfID's total non-fiscal capital requirement in those years.<sup>21</sup>

The Development Secretary announced on 9 October 2018 that she would also seek to alter OECD rules on ODA such that returns on CDC's investments, if reinvested, would count as new ODA spending. As it stands, if these returns are reinvested, they do not count towards the 0.7% target. If the Secretary of State is successful, and assuming returns were positive, this would concentrate even more of the UK's ODA resources within CDC.<sup>22</sup>

One issue often raised in the discussion of DFIs is that they are simply crowding out private investors, although this effect is difficult to measure.<sup>23</sup> DfID's business case for its upcoming investments in CDC claims that this additional capital will facilitate riskier investments in nascent or failed markets, which are typically less attractive to private sector investors; it therefore expects investments in these markets to be less prone to crowding-out.<sup>24</sup> Regardless of the effectiveness of DFIs and 'development capital' spending more generally, targets such as the one that the Treasury has set for DfID create incentives to scale up this type of spending, even if the money could be better spent elsewhere.

Although it is too early to assess how these developments might be affecting the outcomes achieved by ODA spending, Sections 8.4 and 8.5 describe trends and emerging

<sup>20</sup> Page 6 of International Development Committee's Allocation of Resources Inquiry, 'Memorandum by DfID', <http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/international-development-committee/dfids-allocation-of-resources/written/28276.pdf>.

<sup>21</sup> Department for International Development, *Capital Increase to CDC, the UK's Development Finance Institution*, 2017, <https://www.gov.uk/government/publications/capital-increase-to-cdc-the-uks-development-finance-institution-to-deliver-increased-development-impact-in-africa-and-south-asia-2017-2022>.

<sup>22</sup> DEVEX, 'UK aid funding headed for "part privatization" after new announcement, observers say', <https://www.devex.com/news/uk-aid-funding-headed-for-part-privatization-after-new-announcement-observers-say-93610>.

<sup>23</sup> P. Carter, N. Van de Sijpe and R. Calel, 'The elusive quest for additionality', Centre for Global Development (CGD), Working Paper 495, 2018, <https://www.cgdev.org/sites/default/files/elusive-quest-additionality.pdf>.

<sup>24</sup> Department for International Development, *Capital Increase to CDC, the UK's Development Finance Institution*, 2017, <https://www.gov.uk/government/publications/capital-increase-to-cdc-the-uks-development-finance-institution-to-deliver-increased-development-impact-in-africa-and-south-asia-2017-2022>.

patterns in who spends ODA and in where and how it is spent. These sections use disaggregated data from the Statistics on International Development until 2016, as well as the preliminary aggregated data from 2017.

## 8.4 Spenders of UK ODA

In 2017, DfID was responsible for 72.5% of total ODA expenditure, with other government departments and cross-governmental funds (see Box 8.2 for background), and other payments and attributions (for example, to the EU), making up 18.1% and 9.4% respectively. While DfID's budget is still high by historical standards, the proportion of UK ODA disbursed by DfID has fallen in recent years. Over the period from 2009 to 2013, DfID spent between 87% and 90% of total ODA. Since then, the real-terms expenditure of DfID has fallen slightly even as total aid spending has risen; all of the increase in ODA since 2013 has come from spending outside of DfID, which has increased by 200% (or over £2.5 billion) since 2012 (see Figure 8.5).

### Box 8.2. Cross-government funds

Two cross-government funds – the Conflict, Stability and Security Fund (CSSF) and the Prosperity Fund – are overseen by the National Security Council (NSC). Both of these are 'blended' in the sense that they spend both ODA- and non-ODA-eligible funds, and each consists of a pool of money that can fund projects through different departments.

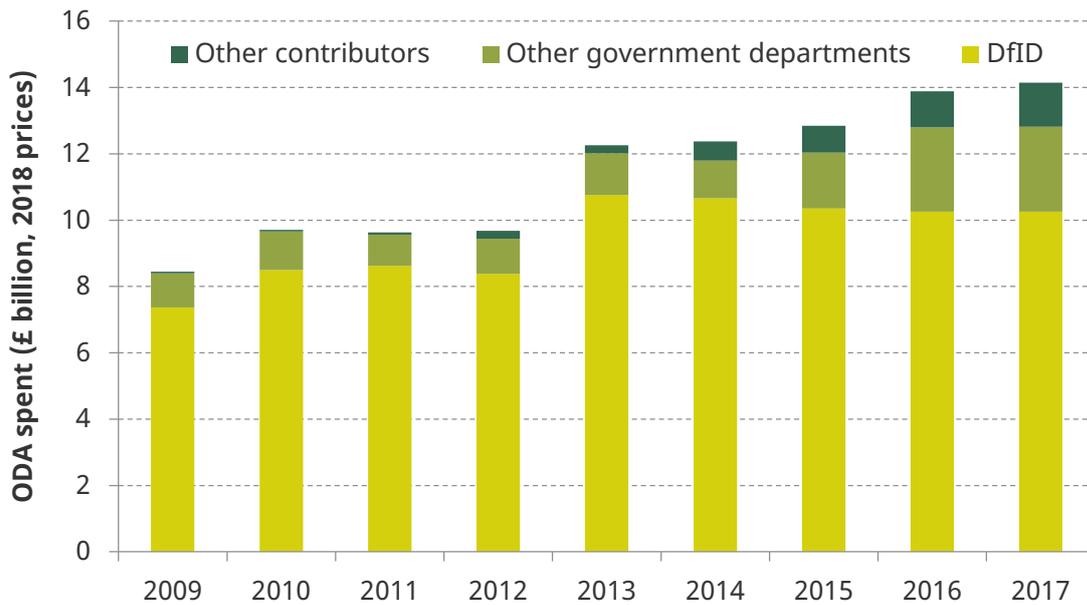
The CSSF was established in 2015 and is intended to contribute to the achievement of the UK's national security and aid objectives. In 2017–18, its total funding was £1.2 billion, 47% of which was ODA-eligible, making it one of the largest spenders of UK aid. Afghanistan (£68 million) and Syria (£59 million)<sup>a</sup> were the two countries where the most ODA was spent through CSSF in 2017–18, with 70% of total CSSF ODA going through the FCO in 2017.<sup>b</sup>

The Prosperity Fund aims to reduce poverty through inclusive economic growth. It has an explicit focus on multi-year programmes in middle-income countries, with the creation of opportunities for UK business as a secondary objective. This fund has an allocated budget of £1.2 billion over the period 2017–22 and 90% of its spending was ODA-eligible in its first year of operation.<sup>c</sup>

<sup>a</sup> Annex B of HM Government, *Conflict, Stability and Security Fund: Annual Report 2017/18*, July 2018, [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/727383/CSSF\\_Annual\\_Report\\_2017\\_to\\_2018.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/727383/CSSF_Annual_Report_2017_to_2018.pdf).

<sup>b</sup> 'Statistics on international development: provisional UK aid spend 2017'.

<sup>c</sup> Pages 3–4 of HM Government, *The Prosperity Fund: Annual Report 2016/17*, 2017, [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/670103/FCO-Prosperity-Report-2016-2017.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/670103/FCO-Prosperity-Report-2016-2017.pdf).

**Figure 8.5. Spenders of UK ODA since 2009**

Note: 2017 figures are preliminary.

Source: Authors' calculations using 'Statistics on international development 2017' and 'Statistics on international development 2017: provisional UK aid spend 2017'.

Almost two-thirds of the increase in non-DfID spending has been since 2014, in line with the new aid strategy and the 2015 Spending Review. During this Spending Review, HM Treasury invited departments to submit bids for ODA spend alongside their normal spend. Departments were asked to determine whether any existing activity could be classified as ODA and to submit bids for new ODA-eligible activities they would like to undertake.

The NAO notes that HM Treasury received 61 bids with a value of £18 billion from 12 departments, exceeding the £7 billion available to departments other than DfID over the period to March 2021. Some of the bids included existing activity that had not previously been classified as ODA, though it is not clear what share of overall spending this reclassified activity accounts for. While the Treasury asked departments to specify the objectives and costs of each project, how it aligned with strategic objectives, and its eligibility for ODA, it did not ask them to provide information on their capacity and capability to implement ODA programmes, or their plans for monitoring and evaluating project outcomes. Some departments, such as the Department for Environment, Food and Rural Affairs (DEFRA), nevertheless provided this information.<sup>25</sup>

Table 8.1 summarises total net ODA disbursement (in 2018 prices) by UK government bodies in 2014 and 2017, respectively the year before the release of the new aid strategy and the latest year for which data are available. Outside DfID, the government bodies that spent the most ODA were the Department for Business, Energy and Industrial Strategy (BEIS), which accounted for 5.5% (£780 million) of total ODA in 2017, the Foreign and Commonwealth Office (FCO) and the cross-government Conflict, Stability and Security

<sup>25</sup> Pages 20 and 21 of National Audit Office, *Managing the Official Development Assistance Target: A Report on Progress, 2017*, <https://www.nao.org.uk/wp-content/uploads/2017/07/Managing-the-Official-development-Assistance-target-a-report-on-progress.pdf>.

Fund (CSSF), which both accounted for 4.0% (£569 million and £565 million respectively). When taking into account its role in administering and allocating CSSF funds, the FCO is the second-largest spender of UK aid, behind DfID. The Home Office is the fourth-largest spender of ODA outside DfID. Collectively, other government departments accounted for around 2% of UK ODA spending in 2017.

Disbursing ODA through departments other than the aid agency is not unusual internationally. The IDC cites Sweden as one example, where only about 50% of ODA spending goes through the government authority for development cooperation.<sup>26</sup> There may be benefits to spreading the responsibility for ODA more widely across government

**Table 8.1. Spenders of UK ODA, 2014–17**

	2014		2017		Change, 2014–17	
	£m	% ODA	£m	% ODA	£m	%
<b>DfID</b>	<b>10,694</b>	<b>86.2%</b>	<b>10,259</b>	<b>72.5%</b>	<b>-435</b>	<b>-4.1%</b>
<i>Of which:</i> EU attribution	396	3.2%	446	3.2%	49	12.4%
<b>Total non-DfID</b>	<b>1,714</b>	<b>13.8%</b>	<b>3,886</b>	<b>27.5%</b>	<b>2,172</b>	<b>126.8%</b>
BEIS	286	2.3%	780	5.5%	494	172.8%
FCO	388	3.1%	569	4.0%	181	46.6%
CSSF	191	1.5%	565	4.0%	374	195.8%
Home Office	144	1.2%	340	2.4%	196	136.5%
Other departments <sup>a</sup>	132	1.1%	301	2.1%	169	128.3%
IMF PRGT <sup>b</sup>	0	0.0%	737	5.2%	737	–
Non-DfID EU attribution	444	3.6%	451	3.2%	8	1.7%
Other sources <sup>b</sup>	130	1.0%	143	1.0%	13	10.0%
<b>Total UK net ODA</b>	<b>12,408</b>	<b>100.0%</b>	<b>14,145</b>	<b>100.0%</b>	<b>1,737</b>	<b>14.0%</b>

<sup>a</sup> Other branches of government consist of DEFRA, Department for Culture, Media & Sports, Export Credits Guarantee Department, Cabinet Office, HM Treasury, CDC, Department for Education, Ministry of Defence and Office for National Statistics.

<sup>b</sup> IMF PRGT is the International Monetary Fund's Poverty Reduction and Growth Trust.

<sup>c</sup> Other sources include Gift Aid, BBC World Service, colonial pensions and the Scottish and Welsh Governments.

Note: Sorted by total net disbursement in 2017. The allocation of the EU attribution between DfID and the rest of government depends on the aims of the budget lines the contribution is spent on in that year. Spend in 2017 is provisional and may be revised. All figures are in 2018 prices.

Source: 'Statistics on international development: provisional UK aid spend 2017' and 'Statistics on international development 2015', <https://www.gov.uk/government/organisations/departments-for-international-development/about/statistics>; GDP deflator forecast from HM Treasury.

<sup>26</sup> Page 10 of International Development Committee, *Definition and Administration of ODA*, Fifth Report of Session 2017–19, HC 547, 2018, <https://publications.parliament.uk/pa/cm201719/cmselect/cmintdev/547/547.pdf>.

in terms of exploiting the varied expertise of departments and providing opportunities for programmes to be tailored to the needs of different countries.

Irrespective of which department disburses the funds, all UK ODA spending falls under the aid strategy, and must meet the definition provided by the OECD DAC (see Box 8.1 for details). ODA spending by DfID must meet the further requirement – set out in the International Development Act 2002 – of being ‘likely to contribute to a reduction in poverty’, although the Act does not specify what this means in practice. In 2014, the Act was amended to include a duty for this spending to have a regard to gender equality. ODA provided by other departments is not explicitly subject to the requirements of the 2002 Act, which may afford them greater flexibility in terms of how they approach the four key objectives set out in the aid strategy, although the government has stated that it is its view that all ODA spending by cross-government funds (but not necessarily by all departments) meets this requirement in practice.<sup>27</sup>

This potential for divergence in objectives across departments has been flagged by the NAO and the IDC as a potential area of concern. Further issues that they have highlighted include the lack of a single body or individual accountable for the delivery of the aid strategy or for managing the overall effectiveness of the government’s ODA spending, and the fact that only one of the four strategic objectives of the aid strategy – poverty reduction – has measurable outcomes.

While departments that have seen large increases in their ODA expenditure in recent years have been taking active steps to develop their capacity to manage it, there is some evidence that they have faced some problems during the recent period of scale-up. For instance, some departments have had difficulties with project pipeline development and forecasting, with the NAO identifying five departments that spent at least half of their annual ODA budget in the final quarter in 2016. In addition, not all projects scrutinised had evaluation frameworks in place.<sup>28</sup> The *Green Book* – guidance from the Treasury on how to appraise and evaluate policies, projects and programmes – currently provides few references to developing programmes for, and assessing the economic and social value of, ODA. However, DfID has agreed to expand its role in providing advice and training to help other departments in building the capacity to manage larger ODA budgets.

The more dispersed nature of aid spending across government has also raised questions of coherence and transparency. In 2016, for example, there were 6,950 bilateral projects focused on 127 countries across 13 thematic spending areas, of which 1,432 cut across multiple themes.<sup>29</sup> Managing this complex spending portfolio effectively across government is likely to pose some challenges, although the government has established a number of cross-governmental working mechanisms in order to improve coordination.

From a transparency perspective, the government has committed to ensuring that all UK departments are ranked ‘good’ or ‘very good’ in Publish What You Fund’s Aid

<sup>27</sup> International Development Committee, *Definition and Administration of ODA*, Fifth Report of Session 2017–19, HC 547, 2018, <https://publications.parliament.uk/pa/cm201719/cmselect/cmintdev/547/547.pdf>.

<sup>28</sup> Pages 29–30 and 33 of National Audit Office, *Managing the Official Development Assistance Target: A Report on Progress*, 2017, <https://www.nao.org.uk/wp-content/uploads/2017/07/Managing-the-Official-development-Assistance-target-a-report-on-progress.pdf>.

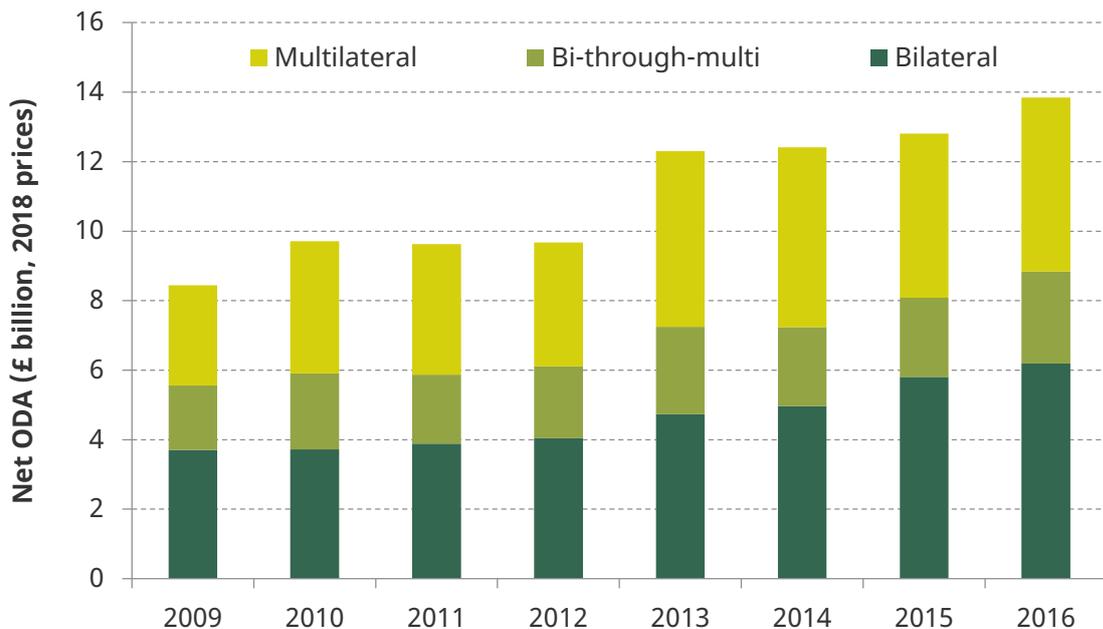
<sup>29</sup> Authors’ calculations based on ‘Statistics on international development 2017’.

Transparency Index by 2020.<sup>30</sup> This index is calculated from the data published online about specific aid projects, and in the 2018 index DfID received a ‘very good’, with an overall ranking of 3<sup>rd</sup> out of 45 international donors. The FCO, the only other UK department included in the index at present, is ranked 40<sup>th</sup> out of 45, with an overall score of ‘poor’ due to the infrequency and incompleteness of its reporting and its relatively weak overall results indicators. Newer spenders of UK ODA, such as the cross-government funds, have also been criticised for a lack of transparency by the ICAI.<sup>31</sup> The government is supporting Publish What You Fund to conduct evaluations for all departments for the 2019 index – a promising step.<sup>32</sup>

### 8.5 Recent trends in where and how ODA is spent

UK ODA is spent through bilateral and multilateral channels. Bilateral spending, disbursed directly by the donor and targeting a specific country, region or thematic spending area, is the primary channel of delivery for UK ODA. Funds are typically managed by the recipient governments, local or international non-governmental organisations, or the private sector, which handle the day-to-day running of programmes. In 2017, the UK disbursed

**Figure 8.6. Real net ODA by delivery channel and year**



Source: Authors’ calculations using data underlying Statistics on International Development 2017.

<sup>30</sup> The Aid Transparency index is calculated based on 35 weighted indicators across five categories: organisational commitments and planning, finance and budgets, project attributes, joining-up development data and performance. See: <http://www.publishwhatyoufund.org/>

<sup>31</sup> Independent Commission for Aid Impact, *The Cross-Government Prosperity Fund*, 2017, <https://icai.independent.gov.uk/wp-content/uploads/Rapid-Review-of-the-Prosperity-Fund.pdf> and *The Conflict, Stability and Security Fund’s Aid Spending*, 2018, <https://icai.independent.gov.uk/wp-content/uploads/The-CSSFs-aid-spending-ICAI-review.pdf>.

<sup>32</sup> Page 10 of International Development Committee, *Definition and Administration of ODA: Government Response*, 2018, <https://publications.parliament.uk/pa/cm201719/cmselect/cmintdev/1556/1556.pdf>.

£8.7 billion of aid bilaterally (62.4% of the total in that year).<sup>33</sup> Since 2013, the first year in which the 0.7% target was met, all of the growth in real ODA spending has come from increases in bilateral spending. Approximately a third of spending attributed as bilateral aid has in the past been through contributions to multilateral organisations which are earmarked for specific purposes. In this section, we classify this ‘bilateral-through-multilateral’ spending as bilateral aid.

Multilateral spending involves channelling ODA into the core budget of international institutions (for instance, the World Bank or the European Commission), which then allocate the funds to support their own programmes. Between 2012 and 2013 – the first year in which the UK met the 0.7% target – there was a 42% increase in spending through this channel, and multilateral contributions as a proportion of total UK ODA increased from 37% to 41%. Since then, the mix between bilateral and multilateral spending has rebalanced somewhat: in 2016, multilateral contributions accounted for 36% of the total ODA spend, just below the level of 2012. Multilateral spending disbursed by DfID peaked in 2013 before decreasing by 20% to 2016, but this has been fully offset by spending through this channel elsewhere in government increasing by 190% over the same period.

The choice of allocation between bilateral and multilateral spending is, in broad terms, a choice between having control over how resources are spent and having the opportunity to leverage and pool expertise, presence and resources in ways that might be hard to achieve if individual donor countries acted unilaterally. Striking the right balance between the two channels of delivery is thus an important task when determining how the allocation of ODA will best fit a government’s strategic objectives. In 2016, the IDC stated that while it felt that the balance was broadly correct, it was ‘not entirely apparent’ how DfID determines this balance, and recommended that the department should clearly set out its decision-making criteria.<sup>34</sup>

### Bilateral aid

DfID uses Bilateral Reviews to provide a framework for its portfolio of bilateral spending and to support the targeting and delivery of the overarching aid strategy. The reviews are developed to promote coherence and improve the overall effectiveness of spending. A key recommendation from the first review conducted in 2011 was to reduce the number of significant bilateral country programmes from 43 to 27, prioritising DfID’s expenditure in fewer countries where it could have the greatest impact.<sup>35</sup> DfID now lists 32 bilateral country programmes on its website, as well as three ‘development partnerships’ – with China, India and South Africa. These partnerships focus on the provision of technical assistance and development capital, rather than on ‘traditional’ aid.

<sup>33</sup> ‘Statistics for international development: provisional UK aid spend 2017’, <https://www.gov.uk/government/statistics/statistics-on-international-development-provisional-uk-aid-spend-2017>.

<sup>34</sup> Page 13 of International Development Committee, *UK Aid: Allocation of Resources: Interim Report*, Third Report of Session 2015–16, HC 927 incorporating HC 533, 2016, <https://publications.parliament.uk/pa/cm201516/cmselect/cmintdev/927/927.pdf>.

<sup>35</sup> By 2016, it was decided that the following programmes should close: Angola, Bosnia, Burundi, Cambodia, Cameroon, China, Indonesia, Iraq, Kosovo, Lesotho, Moldova, Niger, Russia, Serbia, The Gambia and Vietnam.

### Recipient countries

Table 8.2 shows the top 10 recipients of UK country-specific bilateral aid in 2012 and 2016.<sup>36</sup> Despite funding programmes targeting 135 countries in 2012 and 127 in 2016, over half of bilateral spending went to these top 10 countries. Similarly, 83% and 88% of this kind of spending in 2012 and 2016 respectively flowed to DfID's main bilateral country programmes.<sup>37</sup> In 2016, 57% of region-specific bilateral ODA went to Africa, with a further 39% being spent on programmes in Asia.

DfID uses an aid allocation model to focus its programmes on countries where extreme poverty affects a significant proportion of the population, where extreme poverty is likely to persist over the medium term, and where the country itself is unable to finance poverty reduction. It also takes into account 'specific risks, national security priorities, our [the

**Table 8.2. Top 10 recipients of bilateral UK ODA in 2012 and 2016**

Rank	2012		2016	
	Country	£m	Country	£m
1	India	321	Pakistan	479
2	Afghanistan	301	Syria	364
3	Ethiopia	292	Ethiopia	346
4	Nigeria	217	Nigeria	331
5	Bangladesh	216	Afghanistan	244
6	Pakistan	208	Tanzania	193
7	Tanzania	173	Jordan	181
8	Congo, Dem. Rep.	153	South Sudan	167
9	Zimbabwe	153	Sierra Leone	159
10	Malawi	137	Somalia	157

Note: ODA amounts are given in 2018 prices. These figures exclude UK funds that these countries may have received through multilateral institutions, development finance institutions or regional programmes.

Source: Authors' calculations using Statistics on International Development 2017 and GDP deflator forecast from HM Treasury.

<sup>36</sup> Although Table 8.2 covers all bilateral ODA, and not just DfID's, a large share of the ODA spent in these countries is by DfID, and the rationale for working in these countries broadly reflects criteria established in the 2016 Bilateral Review, with the justifications in the text being provided by DfID.

<sup>37</sup> Authors' calculations using 'Data underlying SID 2017'. The number of bilateral country programmes increased from 27 to 28 following independence in South Sudan in 2011, and has increased again with the crisis in Syria. The exact list in 2016 is unclear, so we use the current list on the DfID website for the 2016 calculation: <https://www.gov.uk/guidance/where-we-work>.

UK's] comparative advantage, the degree to which countries receive aid in comparison to their needs and our ability to deliver the Government's commitments'.<sup>38</sup>

India was the largest ODA recipient in 2012 but, in the same year, the Secretary of State announced that 'traditional' financial aid would end by 2015, and aid to India had reduced by 70% by 2016. This change in strategy was justified by DfID on the grounds that India has experienced a strong growth trajectory and other countries might have higher rates of poverty and be less able to fund development themselves. The IDC expressed concerns about the timing and transparency of the decision to close the India bilateral country programme, however, questioning why it was taken outside of the Bilateral Review time frame.<sup>39</sup> The UK continues to provide technical and capital support in India to support infrastructure, skills and private sector development.

Afghanistan, Ethiopia, Nigeria, Pakistan and Tanzania feature in the top 10 recipients in both 2012 and 2016. DfID's country profiles provide some insights into the rationale for these spending patterns.<sup>40</sup> Pakistan is home to the second-largest number of refugees in the world and, like Ethiopia and Nigeria, has a large population with significant minorities living in poverty; entrenched regional inequalities; and instability both internally and on its borders. Despite worries about the levels of political freedom in Ethiopia, support from the UK is further justified by DfID on the grounds of the country's commitment to investing in public services and human development, its focus on boosting growth and its success in lifting large numbers of people out of poverty since 2000. DfID has managed its largest-ever humanitarian programme in Syria, committing £2.7 billion to the regional response since 2012, with the funds also supporting human development and governance programmes, as well as the estimated 3.6 million Syrian refugees living in Turkey.

In line with the updated aid strategy, the 2016 Bilateral Review incorporates a stronger focus on ensuring 'that the people who pay for our aid budget benefit from it', through protecting the UK from disease, addressing the root causes of migration, building global security, tackling extremism and terrorism, and moving beyond aid to provide a more comprehensive approach to development.<sup>41</sup> The justifications provided by DfID on the bilateral spending priorities outlined above reflect their importance for the UK's geopolitical, security and strategic priorities: the stability of Pakistan and Afghanistan is regarded as fundamental to the stability of both their region and the UK, while Nigeria has Africa's second-largest economy and the world's tenth-largest oil reserves and ninth-largest gas reserves.

<sup>38</sup> The aid allocation model is based on the principle that aid should be allocated according to: present need as expressed by extreme poverty corrected for large deviations in child mortality and the multidimensional poverty index; aid effectiveness; future need; and ability to self-finance. See page 6 of Department for International Development, *Bilateral Development Review – Technical Note*, 2016, [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/573890/Bilateral-Development-Review-technical-note-2016.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/573890/Bilateral-Development-Review-technical-note-2016.pdf).

<sup>39</sup> International Development Committee, *The Closure of DFID's Bilateral Aid Programmes: The Case of South Africa*, 2013, <https://publications.parliament.uk/pa/cm201314/cmselect/cmintdev/822/82203.htm>.

<sup>40</sup> <https://www.gov.uk/government/collections/dfid-country-profiles-july-2018>.

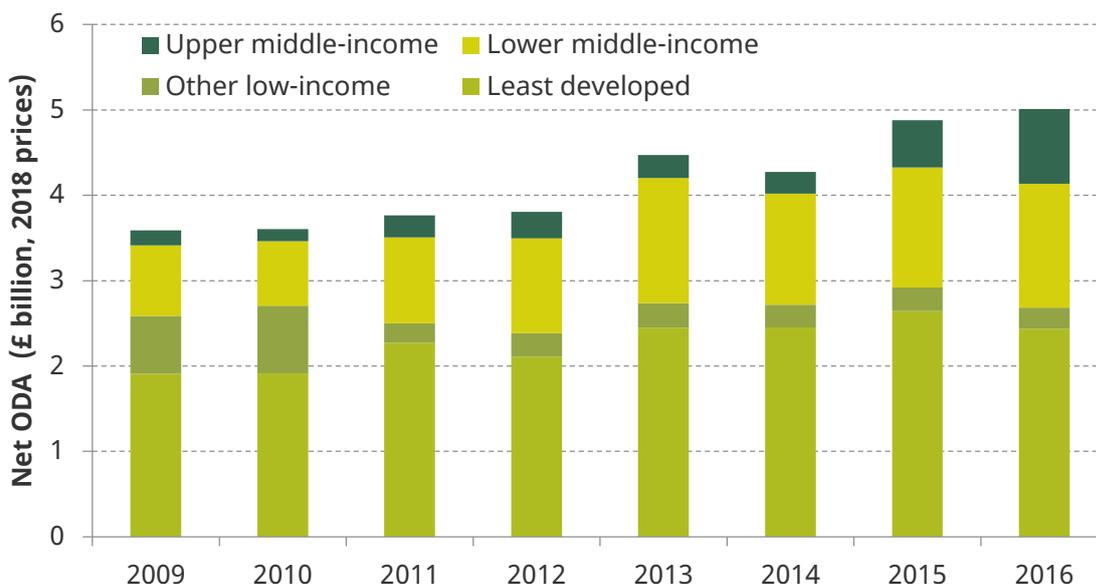
<sup>41</sup> Page 17 of Department for International Development, *Rising to the Challenge of Ending Poverty: The Bilateral Development Review 2016*, 2016, [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/573889/Bilateral-Development-Review-2016.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/573889/Bilateral-Development-Review-2016.pdf).

DfID has also pledged to spend at least 50% of its bilateral budget in fragile states and regions (up from 30% in the 2011 Bilateral Review), with a particular emphasis on expanding its work in the Middle East, the Sahel and across Africa’s ‘Arc of Instability’.<sup>42</sup> All of the top 10 countries in 2016 feature on DfID’s 2016 list of states that are fragile themselves or neighbour fragile countries.<sup>43</sup>

### Income groups of recipient countries

Tackling extreme poverty is a core objective of the 2015 aid strategy. The countries eligible to receive ODA according to the OECD DAC definition are divided into four income groups. As outlined in Box 8.1 earlier, three of these groups are based solely on per-capita GNI, while the Least Developed Countries (LDCs) are defined by the United Nations based on three criteria – income, human assets and economic vulnerability.<sup>44</sup> Figure 8.7 presents a breakdown of aggregate UK bilateral aid spending by the income group of the recipient country. The majority of the UK’s bilateral ODA goes to LDCs and other low-income countries, but despite an overall rise in bilateral aid spending between 2009 and 2016, spending in these countries remained essentially flat. Spending in LDCs specifically was increased by 28% over the period, but by much less than the increase in aid for middle-income countries, which more than doubled from just under £1 billion in 2009 to £2.3 billion in 2016, with noticeable increases to upper middle-income countries in 2015 and 2016. Four upper middle-income countries bordering Syria (Iraq, Jordan, Lebanon and

**Figure 8.7. Total country-specific bilateral ODA by income group of recipient country**



Source: Authors’ calculations using Statistics on International Development 2017 and GDP deflator forecasts from HM Treasury.

<sup>42</sup> This term includes the following countries and areas: Northern Nigeria and the Lake Chad Basin, Mali, Niger, Chad, Sudan and Somalia.

<sup>43</sup> Note that DfID’s definition of fragile states differs from that of the World Bank.

<sup>44</sup> The 2014–17 DAC list is based on 2013 country classifications and includes all LDCs, and all other low-income countries (per capita GNI of no more than \$1,045), lower middle-income countries and territories (per-capita GNI of \$1,046–\$4,125) and upper middle-income countries and territories (UMICs) (per-capita GNI of \$4,126–\$12,745) on the list published by the World Bank, with the exception of G8 members, EU members and all countries with a firm EU entry date.

Turkey) saw their collective UK ODA receipts increase from less than £100 million in 2014 to almost £525 million in 2016.

In 2016, non-DfID departments and cross-government funds spent three-quarters of their bilateral aid in middle-income countries. By contrast, DfID's spending was more focused on low-income and least developed countries, with 41% of spending allocated to middle-income countries. This may represent an efficient division of responsibilities: while DfID has considerable experience working in the least developed and other low-income countries, other departments may possess expertise more relevant to working in places that are more developed. Although their relative contributions to total bilateral spending remain small, there are some emerging differences in the bilateral programmes of the other government departments which reflect this trend: in 2016, the Department for Business, Energy and Industrial Strategy (BEIS)'s top three bilateral recipients were China, India and Brazil – all major economies – while the FCO's were Pakistan, India and China.

Increasing the resources available for middle-income countries is not incompatible with poverty reduction: lower middle-income countries all have national income per head less than a tenth of the UK's, and 73% of the world's poor live in middle-income countries.<sup>45</sup> Specific risks and events may also call for an increase in support for middle-income countries – the increased funds channelled to Syria and its neighbouring countries are an example of this. Nonetheless, it is important that aid in middle-income countries is well targeted. The IDC has raised concerns about the targeting of the Prosperity Fund's spending, for example, suggesting that a greater focus on development in rural areas and on the urban poor would better ensure that ODA reaches the poorest people.<sup>46</sup>

### Thematic spending areas

As well as working in a large number of different countries, UK bilateral aid also covers a broad range of thematic spending areas. Priorities outlined in the 2016 Bilateral Review include boosting prosperity through inclusive economic growth, investing in people through health, nutrition and education interventions, and tackling humanitarian crises, as well as the national interests objectives outlined in Section 8.3.

Figure 8.8 represents over 75% of spending between 2009 and 2016, and outlines the proportion of UK bilateral aid going to the top six thematic spending areas.<sup>47</sup> Notable is the share on humanitarian spending, which nearly doubled between 2012 and 2016. This increase was driven by UK responses to crises in Syria, Yemen, South Sudan and the Ebola outbreak in West Africa. Spending on health and sanitation, education, and governance and civil society programmes continue to account for significant portions of UK ODA.

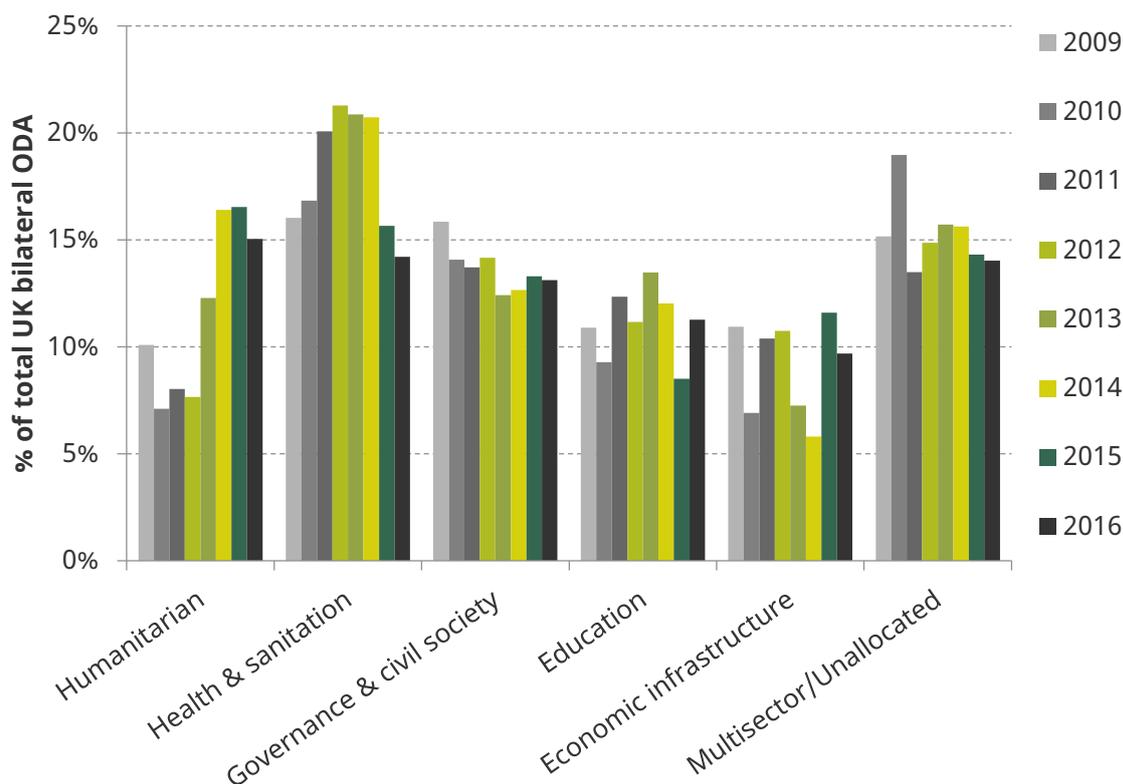
Spending on economic infrastructure and services, following a 35% decline in real terms between 2012 and 2014, more than doubled in 2015, and remained at a similar level in 2016. This was largely driven by equity injections by DfID into CDC plc (which is discussed in more detail in Section 8.3). A £450 million promissory note was deposited in CDC in 2015, and there were further capital increases of just under £300 million in 2016

<sup>45</sup> <https://www.worldbank.org/en/country/mic/overview>.

<sup>46</sup> International Development Committee, *Definition and Administration of ODA*, Fifth Report of Session 2017–19, HC 547, 2018, <https://publications.parliament.uk/pa/cm201719/cmselect/cmintdev/547/547.pdf>.

<sup>47</sup> Defined by broad-sector OECD Creditor Reporting System (CRS) code; this classification system groups aid flows by answering the question: 'Which specific area of the recipient's economic or social structure is the transfer intended to foster?'

**Figure 8.8. Percentage of bilateral ODA spent on top six spending themes, 2009–16**



Note: Health includes spending on WASH (water, sanitation and hygiene) activities. Categories excluded from the graph include administrative costs, commodity and general programme assistance, other social infrastructure spending, and spending on production services. Multisector/Unallocated spend includes cases where the sector is not specified, promoting awareness of aid work, and programmes that cut across several separate themes.

Source: Authors' calculations using 'Data underlying SID 2017'.

earmarked as spending on economic infrastructure. This followed changes in how CDC contributes to UK ODA: from 2015, capital injections have counted as ODA in the year they are provided.<sup>48</sup>

There has also been a shift towards providing aid to promote improvements in the business environment in developing countries, such as providing support to better regulatory and legal frameworks, or reducing the barriers to trade.<sup>49</sup> Although this aligns with the aid strategy's objective to boost prosperity, the ICAI has cautioned that 'the link between a more conducive investment climate and improved lives for intended beneficiaries – the poor – is indirect and complicated'.<sup>50</sup> Spending of this kind increased

<sup>48</sup> <https://www.gov.uk/government/consultations/department-for-international-development-statistical-consultation>.

<sup>49</sup> The methodology for defining this type of aid can be found in Development Initiatives, 'The enabling environment for private sector development', Discussion Paper, 2018, [http://devinit.org/wp-content/uploads/2018/03/the-enabling-environment-for-private-sector-development\\_discussion-paper.pdf](http://devinit.org/wp-content/uploads/2018/03/the-enabling-environment-for-private-sector-development_discussion-paper.pdf). This definition uses a combination of aid purpose codes and keyword searches, and cuts across a number of the broad sectors discussed here, including social infrastructure, economic infrastructure, production services, education and health.

<sup>50</sup> Page 14 of Independent Commission for Aid Impact, *DFID's Private Sector Development Work*, 2014, <https://icai.independent.gov.uk/wp-content/uploads/ICAI-PSD-report-FINAL.pdf>.

from under £400 million to £1 billion (in 2018 prices) between 2014 and 2015, and remained at roughly this level in 2016.

Although not included in Figure 8.8 because it now represents a small proportion of UK ODA, it is also interesting to note that the UK has phased out spending on general budgetary support and commodity provision, which made up only 1% of total UK ODA in 2016, down from a peak of 10% in 2010. This follows from the 2015 aid strategy, which committed to ending this form of support and moving towards more targeted forms of financing.

There is also some variation in how different departments spend ODA. In 2016, almost all ODA spending by BEIS fell under two broad categories: research and innovation (see Box 8.3 for details), and supporting developing countries to respond to climate change (through UK International Climate Finance, which invests in climate and energy funds). Nearly 40% of Foreign Office ODA spending in 2016 was spent on aid-related front-line diplomacy costs. The Conflict, Stability and Security Fund, administered by the FCO, spent 70% of its ODA on governance and civil society programmes – for instance, to support the

### Box 8.3. Research funds disbursing ODA

The 2015 aid strategy outlined a commitment to providing greater support for research to address complex global challenges. BEIS is responsible for the administration of both the Global Challenges Research Fund (GCRF) and the Newton Fund. Bidding processes and funding decisions are managed by delivery partners, such as UK Research and Innovation, the British Academy and the UK Space Agency.

The GCRF, launched in 2015, has a budget of £1.5 billion over five years. GCRF stresses interdisciplinary research partnerships, particularly between UK universities and institutions in developing countries. Although the separation of the provision of funding and award-making processes is considered to be fundamental to promoting high-quality research, most of the delivery partners require a UK institution as a primary applicant. This has been flagged by the Independent Commission for Aid Impact as a potential area of concern because it may be inconsistent with the UK's commitment to ensure that aid is not tied to spending in the donor country. In response, the government has stated that it is 'content' that the funds are 'being accurately reported as untied to the OECD DAC'.<sup>a</sup>

The Newton Fund was launched in 2014 and has a budget of £735 million until 2021. It focuses on research partnerships between UK institutions and partners in 17 middle-income countries such as Brazil, Egypt, Jordan and the Philippines.

The £1 billion Ross Fund is targeted at research focused on drug resistance, neglected tropical diseases and diseases with epidemic potential. It is managed by DfID and the Department of Health and Social Care.

<sup>a</sup> <https://icai.independent.gov.uk/wp-content/uploads/Further-gov-response-to-GCRF.pdf>.

development of political and rule of law institutions and to build law enforcement capability. The CSSF also handles funds for the UK's contributions to UN peacekeeping and EU Common Security and Defence Policy civilian operations in developing countries, which accounted for around 20% of its ODA spend in 2016. The Home Office spends ODA on the direct costs associated with providing accommodation, subsistence and training to refugees during their first 12 months in the UK:<sup>51</sup> this amounts to just under 5% of total UK bilateral ODA. Other DAC countries, such as Germany and Sweden, spend much larger proportions of their ODA budget in this way, although they have received much larger flows of refugees.<sup>52</sup>

### Multilateral aid

Multilateral organisations are 'international institutions with governmental membership that carry out developmental activities'<sup>53</sup> and they include development banks and organisations that work with the private sector, UN agencies, global funds and humanitarian agencies. In 2016, the UK was the largest contributor of core aid funding to multilateral institutions, in terms of gross disbursements – this amounted to over £5 billion (in 2018 prices).<sup>54</sup> There are a number of key advantages to working with multilaterals, with DfID emphasising the fact that they expand the reach of the UK, are regarded by many stakeholders as impartial, provide a global platform for action on development issues, help to uphold international norms and standards, and can provide economies of scale in the delivery of aid.<sup>55</sup>

DfID was the first international donor to publish the findings of its Multilateral Review in 2011, and since then the UK has worked with other DAC countries to encourage the increased effectiveness and performance of multilateral institutions. In both the 2014–16 and 2017–19 multilateral replenishment cycles, where financial commitments were made by donor countries to the various multilateral institutions, the UK was the world's largest contributor to multilateral funds in absolute terms.<sup>56</sup> Recent cycles have seen a slight shift towards 'thematic' funds, such as the Global Alliance for Vaccines and Immunisations (GAVI), and away from broader-based funds such as the International Development Association (IDA).<sup>57</sup> The UK's leading role in the multilateral system may influence whether this trend continues.

<sup>51</sup> Following a review carried out by DfID and the Home Office in 2014 and after seeking advice from the OECD, a number of additional support activities have been treated as ODA-eligible since 2014. The OECD made a further clarification in 2017 that direct support costs provided to asylum seekers and refugees by donor countries during the first 12 months after arrival can be classified as humanitarian assistance.

<sup>52</sup> Page 63 of National Audit Office, *Managing the Official Development Assistance Target: A Report on Progress, 2017*, <https://www.nao.org.uk/wp-content/uploads/2017/07/Managing-the-Official-development-Assistance-target-a-report-on-progress.pdf>.

<sup>53</sup> Page 4 of OECD, *Multilateral Aid 2015: Better Partnerships for a Post-2015 World*, 2015, <https://www.oecd.org/dac/aid-architecture/OverviewChapter-MEP.pdf>.

<sup>54</sup> Authors' calculations using 'Statistics for international development: provisional UK aid spend 2017' and OECD QWIDS.

<sup>55</sup> Pages 10–11 of DfID, *Raising the Standard: The Multilateral Development Review 2016*, 2016, [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/573884/Multilateral-Development-Review-Dec2016.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/573884/Multilateral-Development-Review-Dec2016.pdf).

<sup>56</sup> Page 8 of Centre for Global Development, *Mapping the Concessional Financing Landscape: Key Data on the Role of Multilateral Institutions and Funds*, 2018, <https://www.cgdev.org/sites/default/files/mapping-concessional-financing-landscape.pdf>.

<sup>57</sup> Page 4, *ibid.*

The UK's ODA spending through multilateral bodies is highly concentrated: in 2016, just four institutions – the European Commission, the European Development Fund, the World Bank's International Development Association, and the IMF's Poverty Reduction and Growth Trust – received in excess of 60% (amounting to £3.2 billion, in 2018 prices) of total multilateral spending. Other important recipients were GAVI, the Global Fund to Fight AIDS, Tuberculosis and Malaria and regional bodies such as the African Development Bank.

These institutions were identified from the 38 that were assessed in the 2016 Multilateral Development Review (MDR) as organisations whose development and humanitarian objectives closely matched those of DfID, with strong organisational capacity and a commitment to transparency and accountability.<sup>58</sup> In total, 75% of the UK's core multilateral funding, and 87% of DfID's spending, was disbursed to organisations that scored at least 'good' in both indices of the 2016 review.

### UK aid and Brexit

The UK contributes around £1.5 billion of funding to EU development programmes every year, 11% of the UK's total ODA spend. Of this contribution, roughly a third consists of payments to the European Development Fund (EDF), the EU's (voluntarily funded) vehicle for providing development aid to African, Caribbean and Pacific (ACP) countries, along with overseas countries and territories (OCTs).<sup>59</sup> The remainder constitutes the contribution towards the development share of the EU budget, which finances programmes along a number of thematic and regional lines; this contribution is split between a DfID and a non-DfID attribution, with the share going to each determined by the aims of the budget lines that the contribution is spent on in that year (see Chapter 4 for more discussion of this contribution via the EU budget). DfID expects UK ODA through the EU to continue to represent a similar proportion (11–12%) of the UK's total ODA until 2020, and then to decline in both absolute and relative terms. Based on the spending profile of the last Multiannual Financial Framework (MFF), the tail would come to an end by 2026.<sup>60</sup>

The UK's contributions also form a significant proportion of the total EU aid budget. The UK provides 15% of the EDF's current multiannual funding (€4.5 billion in 2013 prices, over the period 2014–20), and in total UK contributions made up approximately 10% of all ODA spending by EU institutions in 2016.<sup>61</sup> Current EU proposals for the next MFF include a 30% increase in external action spending, from €94.5 billion to €123 billion; however, the EU

<sup>58</sup> Index 1 of the MDR assessed match in terms of what the organisation does, how it delivers and where it works. Index 2 of the MDR assessed strengths in terms of whether the agency is clear about the results that it is delivering, how it manages risks and assurance, and the extent to which it strives to be transparent and accountable to governments, clients and beneficiaries. Organisations are rated as 'very good', 'good', 'adequate' and 'weak'.

<sup>59</sup> There are 25 OCTs; these are islands that are small in size or population, but which have constitutional relationships with EU member states.

<sup>60</sup> Page 2 of International Development Committee, 'EU exit and future UK/EU development co-operation', written evidence submitted by DFID, July 2018, <http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/international-development-committee/ukey-development-cooperation/written/86905.pdf>.

<sup>61</sup> Authors' calculations using 'Data underlying SID 2017' and OECD QWIDS.

has acknowledged that it may struggle to finance this increase if it loses ODA contributions from the UK in the wake of Brexit.<sup>62</sup>

As the UK exits the EU, it will be necessary to resolve both the details of the relationship during the transition period, and the framework and mechanisms for future long-term cooperation. The UK has signalled that it will seek continued 'close collaboration ... on a case-by-case basis'<sup>63</sup> with EU institutions and partners post-Brexit, particularly in three priority areas: migration, peace and security, and humanitarian aid. In these areas, the EU has geographical and political reach far beyond the UK's bilateral footprint (particularly in francophone Africa, the Sahel and the Western Balkans).

However, the UK has emphasised that any future financial contribution to the EU's development programming would require two conditions ('red lines') to be met: influence and oversight over how funds are used at both strategic and programme levels, and the eligibility of UK organisations to bid to deliver any programmes that UK funding is spent on.

Under the Draft Withdrawal Agreement published in March 2018, the UK will continue to contribute to the implementation of EU programmes and activities – both through the Commission's budget and through the EDF – until the end of 2020. However, the level of influence it will hold in this transition period will likely be reduced. For instance, UK participation in the EDF Committee will be limited to observer status, without any voting rights.<sup>64</sup> Although the Draft Withdrawal Agreement does confirm the entitlement of UK entities to participate in EU programmes at least until the end of 2020, EU aid contracts have reportedly seen the insertion of disclaimers that warn UK non-governmental organisations that they will lose EU funding in the event of a no-deal Brexit,<sup>65</sup> potentially dissuading British organisations from involvement in EU projects.

To facilitate cooperation post-2020, the UK is hoping that EU aid spending will transition towards the model operated by other multilateral institutions which offer 'open' instruments which any donor can contribute toward, in return for rights of governance over funds in line with the level of contribution.<sup>66</sup> Currently, however, most of the EU's development instruments either do not allow participation by non-members or restrict their ability to influence decision-making – contravening the UK's first 'red line'.

Regardless of the form of the UK's aid partnership with the EU after Brexit, the 0.7% target means that any contributions that would have previously been earmarked for EU ODA are unlikely to provide a windfall for other areas of UK spending. Rather, DfID and the other spenders of UK ODA will find themselves with both the opportunity and the challenge of

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<sup>62</sup> Page 1 of European Parliament, 'Post-2020 MFF and own resources', 2018, [http://www.europarl.europa.eu/RegData/etudes/BRIE/2018/620240/EPRS\\_BRI\(2018\)620240\\_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/BRIE/2018/620240/EPRS_BRI(2018)620240_EN.pdf).

<sup>63</sup> Page 21 of HM Government, *Foreign Policy, Defence and Development: A Future Partnership Paper*, 2017, [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/643924/Foreign\\_policy\\_defence\\_and\\_development\\_paper.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/643924/Foreign_policy_defence_and_development_paper.pdf).

<sup>64</sup> See Article 145 of the Draft Withdrawal Agreement.

<sup>65</sup> See, for example, <https://www.theguardian.com/politics/2018/jul/01/brexit-eu-accused-of-making-false-aid-funding-claims>.

<sup>66</sup> Q1 of International Development Committee, 'UK-EU Development Co-operation', oral evidence, July 2018, <http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/international-development-committee/ukey-development-cooperation/oral/87000.pdf>.

allocating these funds in a manner that serves the UK aid strategy at least as well as they did when they were channelled through the EU institutions.

## 8.6 Conclusion

The UK has now met the annual target of spending 0.7% of national income on foreign aid for the past five years, with a forecast total spend of £14.4 billion in 2018. This continued commitment has been delivered despite a challenging fiscal context domestically and with overall aid spend amongst the UK's DAC peers relatively flat at around 0.31% of GNI.

Assessments by independent observers such as the OECD and the NAO suggest that the UK has largely managed this increased spending effectively, though each has highlighted areas for improvement. DfID has improved its forward planning and has used flexibility in the schedule of its payments to multilaterals to help it in meeting the 0.7% target each year.

However, meeting the annual target with no margin to spare creates a disincentive for the Secretary of State to halt or reclassify aid, as this can risk undershooting the target. At the same time, and despite recommendations from international bodies such as the OECD DAC, further targets within the overall envelope of aid spending exist, such as the requirement to spend £5 billion on development capital over the current Spending Review period. It is important that the government ensures that these commitments do not overshadow the need for overall aid spending to be coherent and effective.

In parallel with this increase in aggregate aid spending, in 2015 the government updated its aid strategy, with arguably the most significant shift being its aim that ODA should deliver on both poverty reduction and national interest objectives.

DfID remains the largest spender of ODA, but the government now stresses a 'cross-government' approach to UK aid, which is manifested in a much greater share of total aid being spent by departments other than DfID (which spent 73% of UK aid in 2017, down from 88% in 2013). There is some evidence that other departments are not yet meeting the same standards of transparency, monitoring and evaluation as DfID, however, and steps to raise standards across government are welcome in this regard.

It is too early to assess fully how these recent developments are affecting aid spending patterns, but the data provide some indicative evidence. It seems likely that the change in strategy is affecting where and how ODA is being spent. National security objectives appear to be leading to an increased role for the National Security Council and the FCO, in particular through the Conflict, Security and Stability Fund. A greater focus on economic development and research programmes may lead to more projects in upper middle-income countries, such as through the Prosperity Fund.

Another important change is the increased focus on 'development capital', or 'non-fiscal spending'. This takes the form of concessional loans and investments to the private sector in developing countries (including through CDC) and the Treasury has set minimum spending targets for this area. As this spending does not score against the headline measure of government borrowing, there is a risk that more will be spent through this channel than would otherwise be the case.

In 2016, the UK was the largest contributor of ODA to the multilateral system, but with several large 'replenishments' due in 2019, and with significant uncertainty surrounding the UK's post-Brexit relationship with the EU – its largest multilateral aid partner – the future balance that will be struck between multilateral and bilateral channels of aid could be subject to significant change.

Looking forward, the NAO has recommended that the Treasury, DfID and other bodies focus on 'developing ways of capturing the overall effectiveness of ODA expenditure and assessing its coherence across government'.<sup>67</sup> The Spending Review will provide an opportunity to do this and to make improvements to the 2015 departmental bidding and allocation process. As it goes through this process, the government must be clear about its objectives for aid spending and the outcomes it wishes to achieve. Any future process should allocate spend to where it is likely to be most effective at meeting these goals.

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<sup>67</sup> Page 10 of National Audit Office, *Managing the Official Development Assistance Target: A Report on Progress*, 2017, <https://www.nao.org.uk/wp-content/uploads/2017/07/Managing-the-Official-development-Assistance-target-a-report-on-progress.pdf>.

## 9. Barriers to homeownership for young adults

Jonathan Cribb and Polly Simpson (IFS)

### Key findings

- **The last 20 years have seen a substantial fall in homeownership among young adults.** In 2017, 35% of 25- to 34-year-olds were homeowners, down from 55% in 1997. The biggest falls have been among middle-income young adults. In terms of housing tenure, they now look much more like the poorest groups than their richer peers.
- **Since 1997, the average property price in England has risen by 173% after adjusting for inflation, and by 253% in London.** This compares with increases in real incomes of 25- to 34-year-olds of only 19% and in (real) rents of 38%. In most of the country, real house prices have not risen in the last decade; however, they have increased by 30% in London, 8% in the South East and 10% in the East of England since 2007. Rising house prices have benefited older generations at the expense of younger ones and increased intragenerational inequalities.
- **Increases in property prices relative to incomes have made it increasingly hard for young adults to raise a deposit.** The proportion of young adults who would need to spend more than six months' income on a 10% deposit for the median property in their area has increased from 33% to 78% in the last 20 years. Most of this increase occurred between 1996 and 2006. Over the last decade, stable or falling house prices outside London, the South East and the East of England have meant that raising a deposit has become slightly easier in most of the UK.
- **Even with a 10% deposit, many young adults are severely restricted in their ability to purchase a home.** Most mortgage lenders will not lend more than 4.5 times salary. In 1996, for almost all (93%) young adults, borrowing 4.5 times their salary would have been enough to cover the cost of one of the cheapest properties in their area assuming they had a 10% deposit. By 2016, this figure had fallen to three-in-five (61%) across England as a whole and around one-in-three (35%) in London.
- **Rates of homeownership amongst young adults could potentially be increased by recent policies to advantage young buyers over others (in particular over multiple-property owners)** – for example, by reducing stamp duty for the former and increasing it for the latter. But these policies risk increasing house prices or rents or both.
- **Increasing the supply of homes and the responsiveness (or elasticity) of supply to prices is crucial.** Planning restrictions make it hard for individuals and developers to build houses in response to demand. Easing these restrictions would reduce (or at least moderate) both property prices and rents, boosting homeownership and benefiting renters who may never own. Without greater elasticity of supply, policies to advantage young adults in the housing market will in part push up house prices and will not help (and could even harm) those young adults who will never own a home.

## 9.1 Introduction

The rate of homeownership amongst young adults has fallen substantially over the last 20 years. This change has not gone unnoticed: reversing the trend is a priority for both the government and the opposition. Philip Hammond's 2017 Autumn Budget stated that:

The government is determined to fix the dysfunctional housing market, and restore the dream of home ownership for a new generation.<sup>1</sup>

The Shadow Secretary of State for Housing, John Healey MP, said in an interview in Autumn 2017:

Since 2010, we've seen the number of under-45s owning their own home drop by 900,000 and now home ownership generally is at a 30-year low. Everyone knows someone who's affected, someone who can't get the home they need or aspire to.<sup>2</sup>

Successive governments have introduced (or revamped) a range of policies in an attempt to tackle low ownership rates. The Conservative government has introduced a stamp duty surcharge on the purchase of additional residential properties and cut the stamp duty paid by first-time buyers. Help to Buy and new Lifetime ISAs have topped up the savings and offset the mortgage costs of first-time buyers. Direct subsidies for housing construction and loan guarantees for housing providers are aimed at boosting housing supply. The variety of policies reflects what was called in the Budget a 'push on all fronts'.

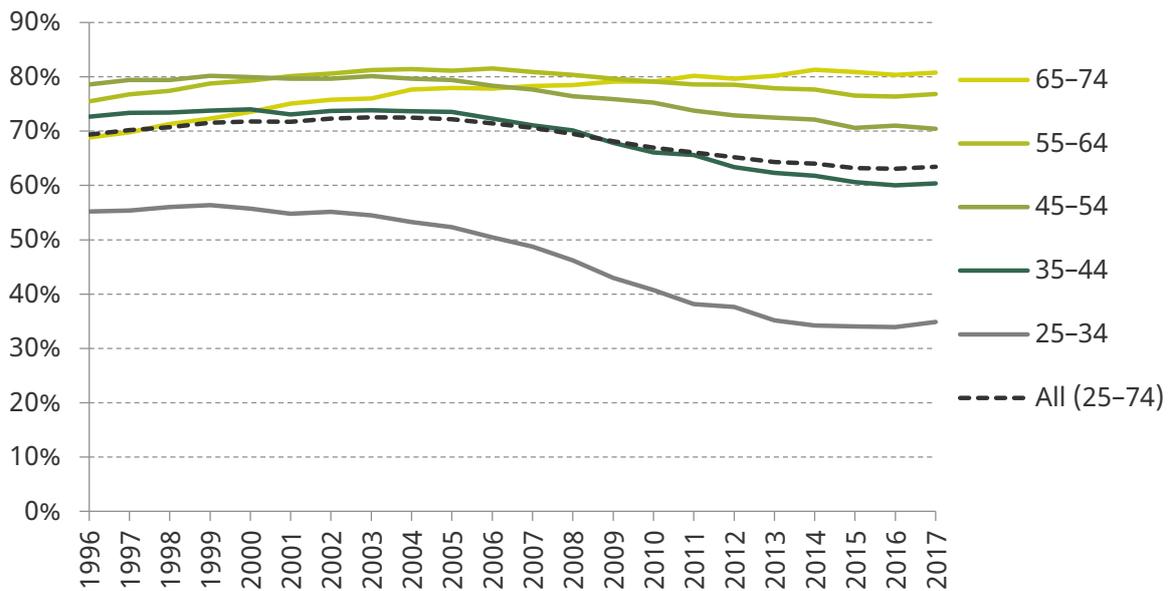
The headline trends in homeownership and housing costs that these policies respond to have been set out many times by analysts inside and outside of government.<sup>3</sup> Figure 9.1 shows how ownership rates of different age groups have changed since 1996: over a 20-year period, the proportion of young adults (aged 25–34) owning their own home fell by 20 percentage points (ppts) from 55% to 35%, with most of the change occurring between 2002 and 2013 and essentially no change since then. While there have been some falls in homeownership of older adults over the last 20 years, they have been much more modest than the falls among younger adults, and homeownership rates for those aged 65–74 have risen gradually. In this figure, as well as in the rest of this chapter, a person is counted as a homeowner if they or their cohabiting partner or spouse own the property in which they live (either with a mortgage or outright). But, for example, someone living with a homeownership parent is not counted as being a homeowner themselves.

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<sup>1</sup> Paragraph 5.1 of HM Treasury, *Autumn Budget 2017*, <https://www.gov.uk/government/publications/autumn-budget-2017-documents>.

<sup>2</sup> Interview in the *New Statesman*, 4 September 2017, <https://www.newstatesman.com/microsites/housing/2017/09/john-healey-labour-has-radical-and-deliverable-housing-plan-government>.

<sup>3</sup> See, for example: A. Corlett and L. Judge, *Home Affront: Housing across the Generations*, Resolution Foundation Intergenerational Commission, 2017, <https://www.resolutionfoundation.org/app/uploads/2017/09/Home-Affront.pdf>; Department for Communities and Local Government, *English Housing Survey: Headline Report, 2015–16*, 2017, <https://www.gov.uk/government/statistics/english-housing-survey-2015-to-2016-headline-report>; and J. Cribb, A. Hood and J. Hoyle, 'The decline of homeownership among young adults', IFS Briefing Note BN224, 2018, <https://www.ifs.org.uk/uploads/publications/bns/BN224.pdf>.

**Figure 9.1. UK homeownership rates by age group, 1996–2017**

Note: An individual is counted as a homeowner if they or their cohabiting partner or spouse own the property in which they live (either with a mortgage or outright).

Source: Authors' calculations using the Labour Force Survey 1996–2017.

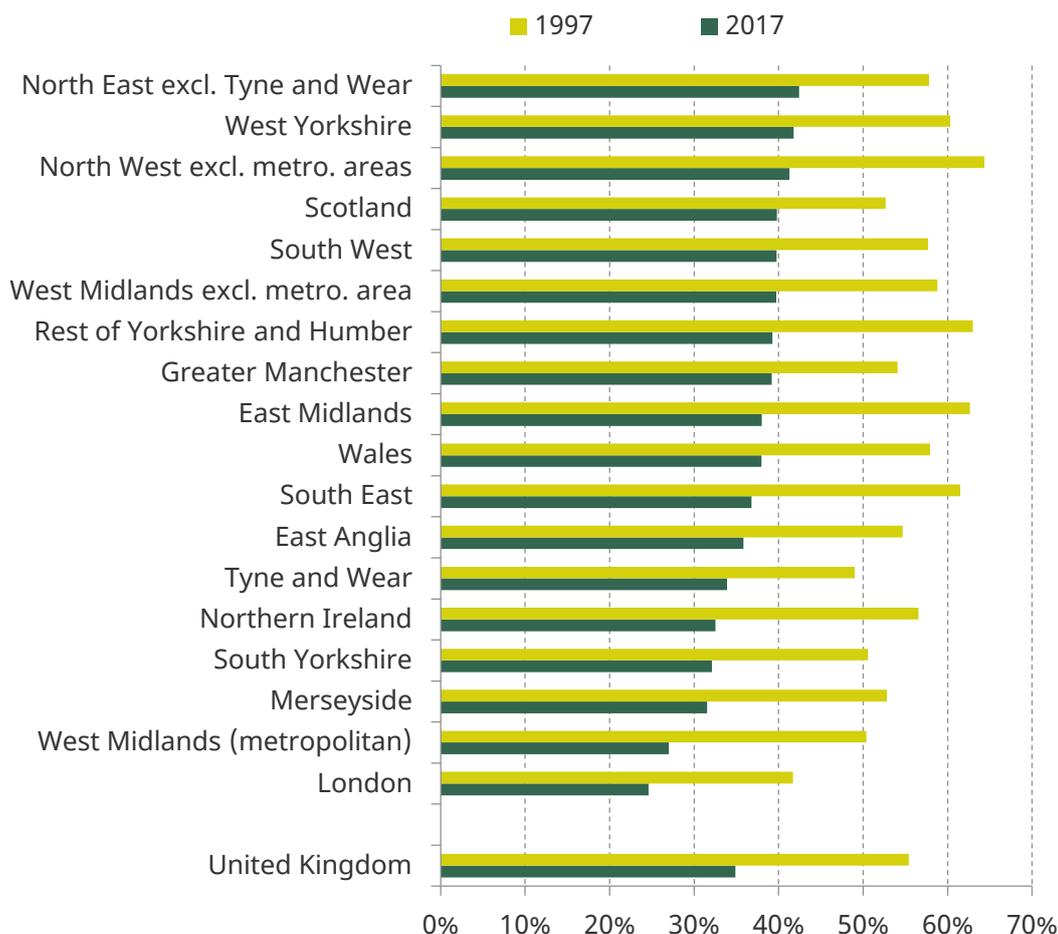
As Figure 9.2 illustrates, the substantial decline in young adults' homeownership has occurred across all regions and nations of the UK over the last 20 years, with the smallest falls in Scotland (13ppts) and the largest in the South East (25ppts). The share of young adults owning their own home is lowest in two sorts of areas: those with high house prices (such as London and the South East of England) and poorer, urban areas with lower wages and employment (such as the West Midlands metropolitan area and Merseyside).

These trends are well known, but discussion of why – or whether – they are cause for concern has in general been less precise. It is often taken for granted that lower homeownership is bad and that policies that boost homeownership must be good. In this chapter, we focus on how young adults interact with the housing market: the house prices and the rental prices that they face, the constraints they face when looking at purchasing a home, the consequences this has for homeownership and inequalities, and some of the potential policy options available to address these challenges.

Section 9.2 presents key information on changes in the housing market over the last 20 years. We focus on trends in house prices, mortgage interest rates and repayments, and rents in the private rental market to assess how the market facing young adults who are looking to rent or buy a property differs from that in the past.

Section 9.3 considers the economic reasons – related both to efficiency and to equity – why low homeownership rates amongst young adults might be a matter for public policy concern. There may also be political (or political economy) rationales for such concerns, particularly as voters frequently name housing as a top priority. For example, low homeownership could potentially increase disengagement of younger generations from the political process. We do not consider these political arguments in detail.

**Figure 9.2. Homeownership rates of 25- to 34-year-olds across the UK**



Source: Authors’ calculations using the Labour Force Survey 1997 and 2017.

One particular feature of the housing market is that most people buying a first home will need access to credit (i.e. a mortgage) to purchase a property. There are various borrowing constraints in the mortgage market that limit the amount that people can borrow, with both minimum deposit requirements and caps on loan-to-income ratios. These constraints disproportionately affect the ability of younger prospective buyers compared with older people because they have had less time to save for a deposit and are more likely to have their peak earning years ahead. Moreover, rising house prices over the last 20 years mean that these constraints have become even more binding for young adults, at a time when rent increases – and falls in mortgage interest rates – have made owning appear cheaper compared with renting (when comparing mortgage interest payments and rents).

Section 9.4 analyses this issue in greater detail, quantifying how higher house prices compared with incomes have made the borrowing constraints faced by young adults much more important over the last two decades. Previous work in this area has focused on comparing average prices with average earnings or incomes. We build on this by looking at how the income distribution for young adults compares with the property prices in the housing market that they face in the area (local authority) in which they live.

Section 9.5 considers some of the broad policy options open to government. One potential approach is to dismantle the barriers on the mortgage market; however, there are good macroeconomic reasons not to, and even removing the restrictions entirely would still leave young adults at a disadvantage. We go on to consider the relative merits of three types of intervention: advantaging young adults in the buying process; disadvantaging other potential buyers; and increasing housing supply, and the responsiveness of supply to changes in property prices or demand.

Section 9.6 concludes.

## 9.2 The English housing market: changes in property prices, interest rates and rents

Property prices, mortgage interest rates and rents in the private rental market are three key factors that affect housing tenure decisions and housing costs. In this section, we set out the key trends for each over the last 20 years. We then explore briefly the links between these three factors, which can help us to understand what has happened in the housing market over the last 20 years. Due to data constraints, we restrict our attention to England only.

### Trends in property prices

Over the last 20 years, average house prices have increased rapidly, even after accounting for overall inflation (excluding housing costs) and for the types of houses sold. Using Land Registry data for England, Figure 9.3 illustrates that between 1997 and 2017, the average house price in England increased from £86,000 to £234,000 (expressed in 2016–17 prices), a 173% increase. This compares with an increase in the mean net income of 25- to 34-year-olds of 19% (after adjusting for the same measure of inflation) between 1997–98 and 2016–17.

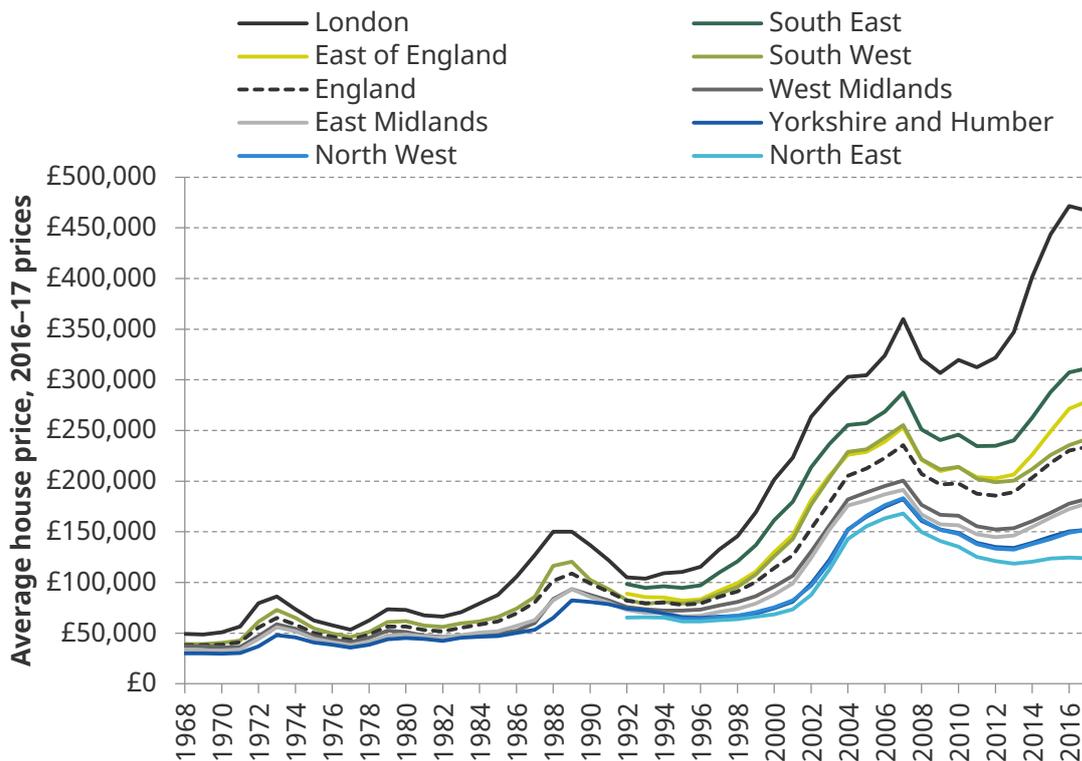
This house price growth is much higher than in other large developed economies. Data from the OECD (which use slightly different measures of both average house prices and inflation) show that between 1997 and 2017, real property prices in the UK as a whole grew by 150%, higher than for any other G7 country, with Canada (141% growth) and France (101%) being closest to the UK, and Germany (4%) and Japan (-23%) having the slowest growth.<sup>4</sup>

Some regions in England have experienced much faster growth – most notably London, where the average house price increased by over 250% in real terms (from £132,000 to £467,000) over the same period. It is also important to note that only in London, the South East and East of England are average house prices higher (in real terms) than their pre-crisis (2007) peak, although real house prices across the rest of England are still much higher than they were 20 years ago.

The Land Registry data used in Figure 9.3 are only complete up to 2017. More recent data from Nationwide suggest that in the year to the second quarter of 2018, average house

<sup>4</sup> <https://data.oecd.org/hha/housing.htm>.

**Figure 9.3. Average (mean) real house prices by region of England, 1968–2017**



Note: Land Registry methodology uses hedonic methods to adjust for changes in the composition of houses being sold over time. Data are not available for all regions before 1992. Prices expressed in 2016–17 prices, adjusting for inflation using the Consumer Prices Index (excluding housing costs).

Source: UK Land Registry House Price Index data for average prices at the regional level, 1968–2017.

prices fell by 0.2% after adjusting for CPI inflation, with falls in London of 4.3%.<sup>5</sup> Looking forward, there are some predictions of possible falls in house prices as a result of Brexit, particularly if the UK leaves the EU in a ‘disorderly’ way.<sup>6</sup> However, average house prices would need to fall by around two-thirds to take us back to the (real) prices seen two decades ago, and the experience since the financial crisis shows that, while house prices may drop significantly in the aftermath of a large macroeconomic shock, they may not necessarily stay at the depressed levels, at least in some regions such as London and the South East.

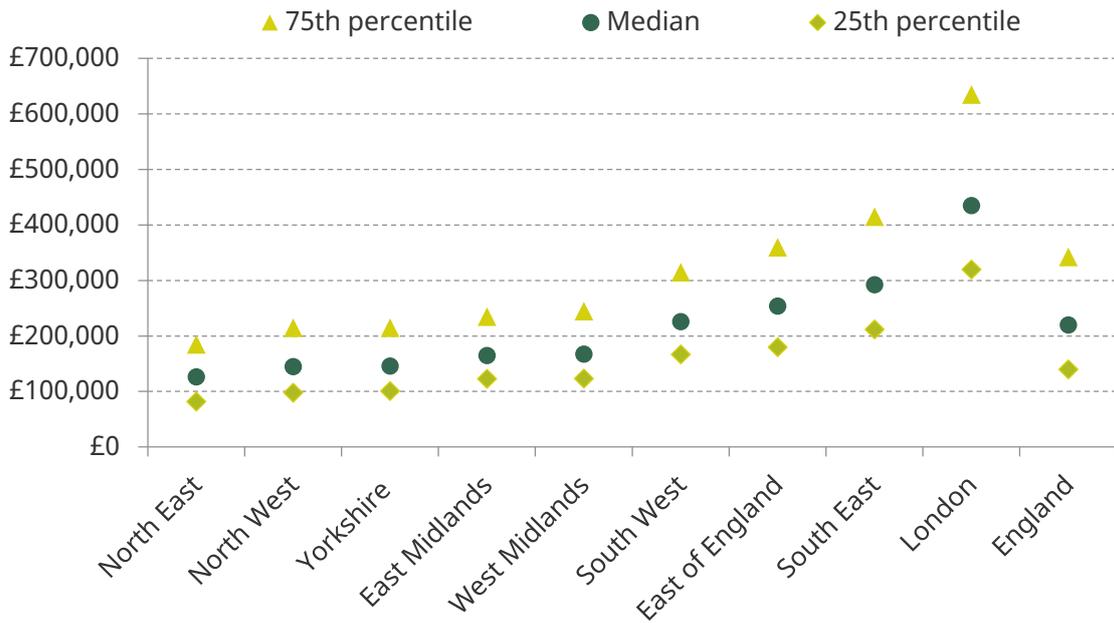
Differential trends in house prices over the last 20 years have opened up enormous differences in the distribution of house prices between regions. To see the distribution of house prices faced by young adults in 2016, Figure 9.4 shows the range of property prices in each English region. For comparison, we also show the variation in the net income of young adults by region in Figure 9.5.

Figure 9.4 confirms that the high house prices in London and the South East are found across the distribution as well as for the average. In practice, this means that the distribution of housing costs within each region is dwarfed by the much bigger differences

<sup>5</sup> [https://www.nationwide.co.uk/-/media/MainSite/documents/about/house-price-index/2018/Jun\\_Q2\\_2018.pdf](https://www.nationwide.co.uk/-/media/MainSite/documents/about/house-price-index/2018/Jun_Q2_2018.pdf).

<sup>6</sup> <https://www.ft.com/content/87b1f284-1452-11e7-80f4-13e067d5072c>.

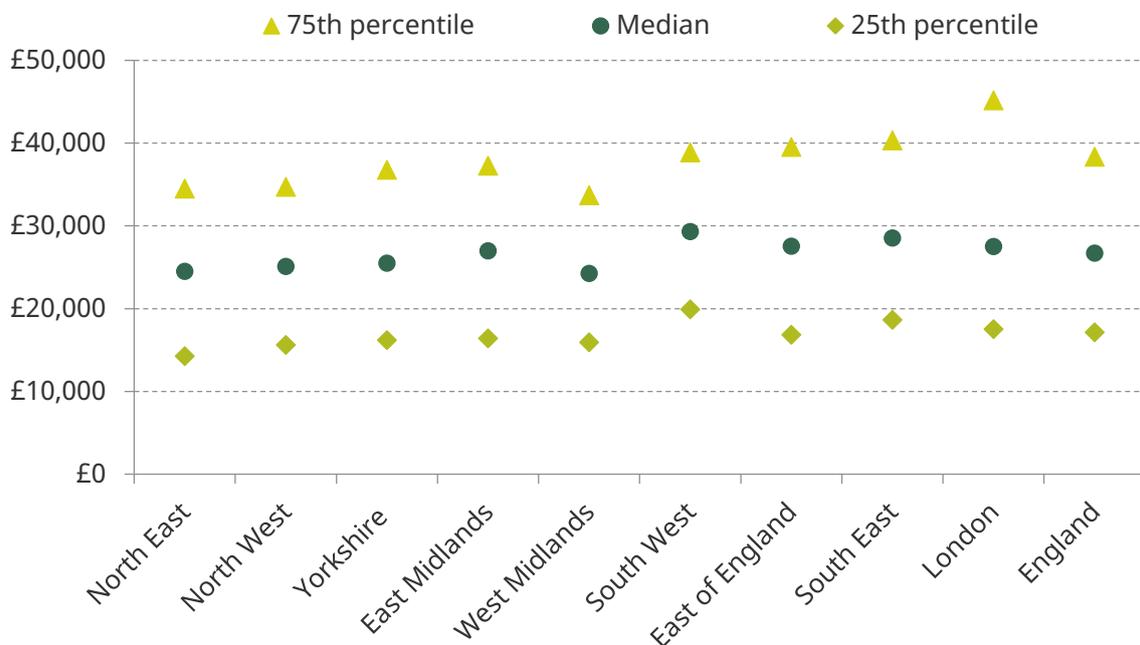
**Figure 9.4. Distribution of English house prices by region (2016), 2016–17 prices**



Note: Regions are ranked by median house prices.

Source: HM Land Registry price paid data 2016.

**Figure 9.5. Distribution of annual net income for adults aged 25–34 by region (2015 and 2016 pooled), 2016–17 prices**



Note: Regions are ranked by median property prices. Annual net income includes the income of the young adult and any cohabiting partner. Incomes are not equivalised. Incomes are expressed in 2016–17 prices, adjusting for inflation using the Consumer Prices Index excluding housing costs.

Source: Authors' calculations using Family Resources Survey 2015 and 2016. Based on pooled data for 2015 and 2016.

across the country. For example, the 25<sup>th</sup> percentile (the property costing more than 25% of properties) house price in the East of England (£180,000) is similar to the 75<sup>th</sup> percentile (higher than 75% of properties) in the North East of England (£185,000). London is so exceptional that the 25<sup>th</sup> percentile of house prices there is higher than the median in the next most expensive region – the South East.

Regional differences in net income (that is, after direct taxes are paid and any benefits received) for young adults are small in comparison, as shown in Figure 9.5. The median young adult in England had a net income (including the income of their cohabiting spouse or partner if they have one) of £27,000. Across regions, this figure only varied from £24,000 in the West Midlands to £29,000 in the South West. The differences in the 75<sup>th</sup> percentile of young household incomes are somewhat larger, ranging from £34,000 in the West Midlands to £45,000 in London.<sup>7</sup>

The differences between income and house prices shown here are important. Previous IFS research found that all of the fall in the homeownership of 25- to 34-year-olds between 1995–96 and 2015–16 could be accounted for by increases in average regional house prices compared with young adults' after-tax incomes.<sup>8</sup>

### Trends in interest rates and mortgage repayments

While house prices are far higher than they were 20 years ago, mortgage interest rates have fallen significantly. Figure 9.6 shows data from the Bank of England on how the average interest rate on a variable (or 'tracker') mortgage has fallen over the last 20 years. It shows a gradual decline in mortgage interest rates since the mid 1990s, falling from around 8% in 1995 to reach 5% in the mid 2000s. Mortgage rates fell again as the Monetary Policy Committee of the Bank of England cut the Base Rate in 2008 (though by less than the Base Rate fell), and continued to fall to reach around 2% in 2016. With CPI inflation still above 2%, *real* interest rates on mortgages are close to zero. Having said that, Bank of England statistics show that mortgage interest rates have not fallen as much on higher loan-to-value mortgages such as those that first-time buyers frequently have, meaning many younger mortgagors will not have benefited as much from falling interest rates.<sup>9</sup>

Falling mortgage interest rates and higher property prices mean that young adults who do purchase a home face a very different structure of mortgage repayments from what was typical in the mid 1990s. Our analysis from the Family Resources Survey (FRS) shows this in clear detail:

- The average (mean) monthly mortgage repayment (which includes both the interest and capital repayments) for young homeowners rose by 120% after adjusting for inflation between 1996–97 and 2007–08, driven by rapidly growing house prices and higher interest rates in the run-up to the financial crisis. Since then, falls in interest rates

<sup>7</sup> One reason for these small geographical differences is that the region with the highest wages (London) also has the highest proportion of people living without a partner, which suppresses average income there.

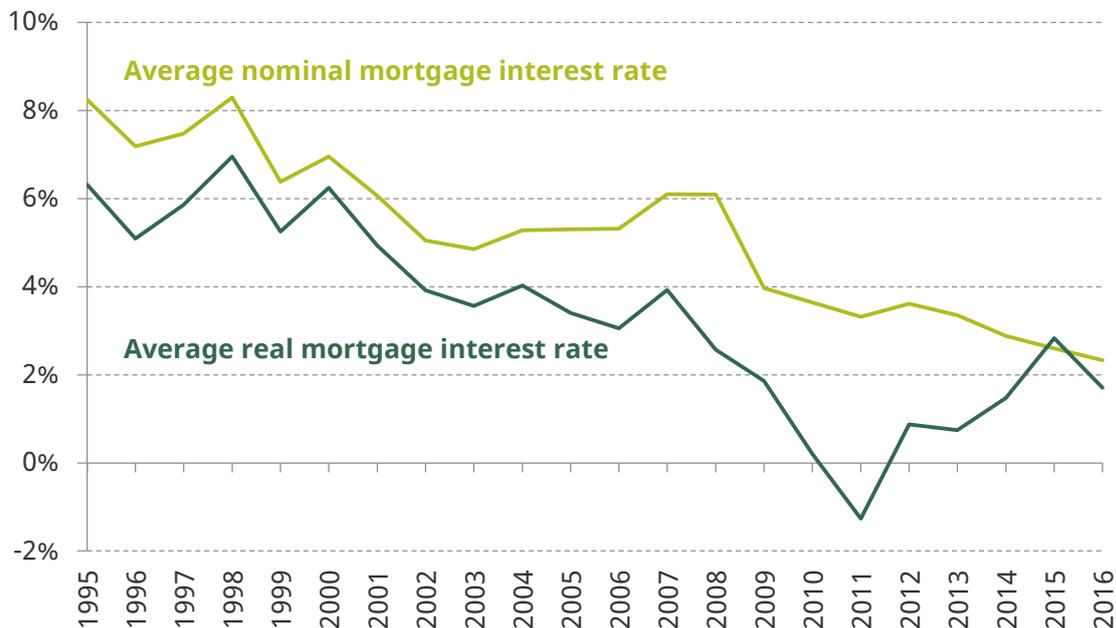
<sup>8</sup> J. Cribb, A. Hood and J. Hoyle, 'The decline of homeownership among young adults', IFS Briefing Note BN224, 2018, <https://www.ifs.org.uk/uploads/publications/bns/BN224.pdf>.

<sup>9</sup> See chart E in H. Phaup, 'Historical sources of mortgage interest rate statistics', Bank of England, 2015, <https://www.bankofengland.co.uk/-/media/boe/files/statistics/bankstats-articles/2015/historical-sources-of-mortgage-interest-rate-statistics---bankstats-article.pdf?la=en&hash=79EEA48DAD7C48817355A5C8CFDC73E458951772>.

and more moderate changes in average house prices mean that the average mortgage repayment has fallen back, but it is still 76% higher in real terms in 2016–17 than in 1996–97. This compares with average (mean) real income growth of young adults of 25% over the same period.

- The average amount that young homeowners paid on mortgage interest payments (i.e. ignoring the capital repayment) also rose substantially between 1996–97 and 2007–08, by 82% in real terms, again driven by rising house prices and increases in interest rates between 2003 and 2007. But the falls in interest rates since then mean that mean interest payments by young homeowners in 2016–17 were 1% below their 1996–97 level. This means that, over the last 20 years, young homeowners pay similar amounts of interest but much higher capital repayments.<sup>10</sup>
- The average mortgage term (the number of years over which a mortgage is repaid) for homeowners aged 25–34 has increased by four years from 2003–04 to 2016–17, from around 23½ years to 27½ years. This means that young homeowners are now spreading the cost of their mortgage over a longer period. This may have been one way that young adults responded to the increased financial undertaking resulting from higher property prices, as borrowing over a longer period, all else equal, reduces the average monthly repayment (though it increases the total amount paid over the full course of the mortgage).

**Figure 9.6. Average nominal and real mortgage interest rates on variable mortgages, 1995–2016**



Note: Real mortgage interest rate is after adjusting for CPI inflation (excluding housing costs).

Source: Bank of England, 'A millennium of macroeconomic data', data set available at <https://www.bankofengland.co.uk/statistics/research-datasets>.

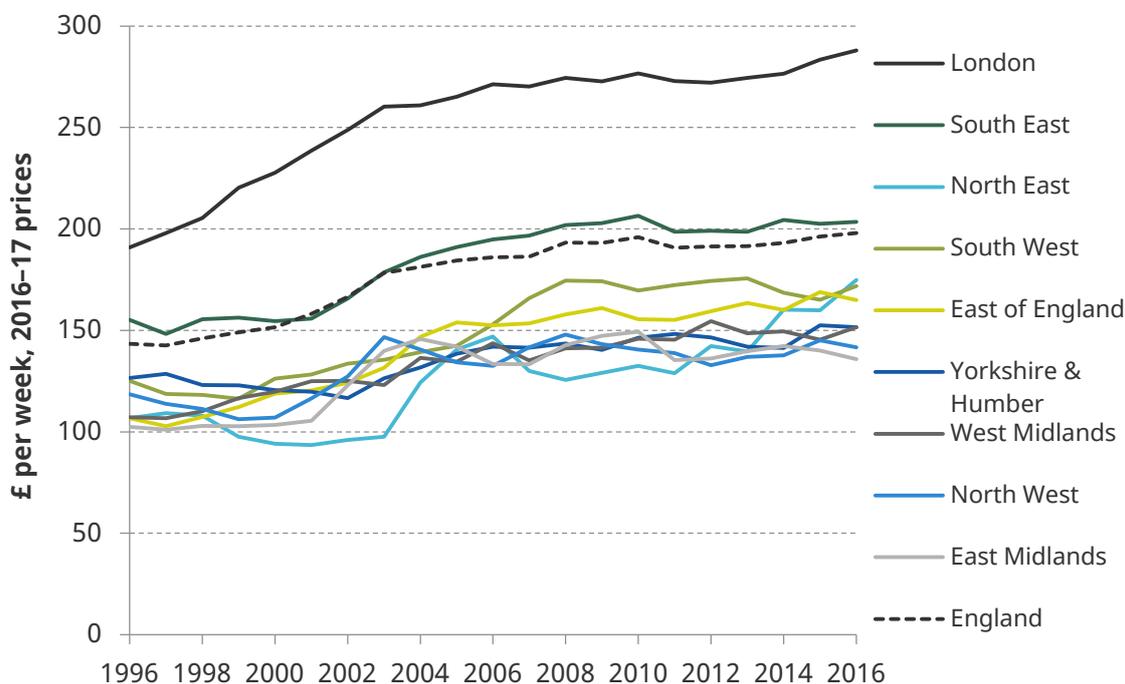
<sup>10</sup> Note that these figures also include very small amounts for water rates, council water charges, structural insurance premiums and ground rents or service charges, but these are typically not significant compared with mortgage interest payments.

### Trends in the private rental market

This analysis so far has focused on the cost of purchasing a property: both the price of the property itself and the interest rates and repayments on mortgages. But there is another key price in the housing market: the price of privately renting a home. Private renting is becoming increasingly common as homeownership has fallen (as has the proportion of younger adults living in social housing). Figure 9.7 shows the average (mean) real cost of renting for private renters in England since the mid 1990s.<sup>11</sup> It shows that private rental costs have increased by around 40% in real terms, from around £140 per week to around £200 per week on average. Crucially, this is faster than real income growth for young adults (which has grown by around 20% since 1997). However, rents have grown much more slowly than the 190% increase in house prices (see Figure 9.3). As with house prices, most of the increase occurred prior to the financial crisis. Between 2007 and 2016, there were only modest changes in rents.

Moreover, like the differences in property prices, there are vast regional differences in private rental prices. The average private rental cost in London is £290 per week, 45% higher than the average for England, and the South East is easily the next most expensive region, with average rents in every other region of England below the English average. London has also seen bigger increases in rental prices since 1996–97 (51%) than the average for England (38%). Of course, this is still small compared with the increase in property prices in the capital, in part because rental prices in London have risen a lot less quickly than property prices in London since 2011.

**Figure 9.7. Average (mean) real private rental costs by English region, 1996–2016**



Note: Years are financial years. Data refer to a three-year rolling average ending in the stated year and are adjusted for inflation using the Consumer Prices Index (excluding housing costs).

Source: Authors’ calculations using the Family Resources Survey 1996–2016.

<sup>11</sup> The figures are the average cost for renting private rental properties. They are not adjusted for the number of people in the family (or the number of adults) or for the size or quality of the property.

This analysis shows that rental prices across the country have risen in real terms, and compared with young adults' incomes, over the last 20 years. Higher rents compared with incomes not only reduce the purchasing power of young adults' incomes; they also make it harder for those living in private rental properties to save for a deposit for a home. London is a particular outlier, with rents and prices rising much faster than in the country on average. However, rents have not increased at anywhere near the same rate as property prices.

The difference in pattern between property prices and private rents has attracted the attention of some economists and commentators as a way to explain what is driving changes in the UK housing market. Among others, Ian Mulheirn and Simon Wren-Lewis have separately argued that low interest rates are driving increases in UK prices, rather than a lack of housing supply.<sup>12</sup> Before we move on, it is worth considering this argument.

The argument goes something like this: when interest rates fall, the demand for owning housing increases, in part because the return on saving in savings accounts or bonds has fallen, and so housing becomes a relatively more attractive asset to hold.<sup>13</sup> This higher demand pushes up house prices and means that the rental yield (i.e. the rent compared with the property price) falls. As a result, the expected return on housing as an asset falls until – after adjusting for risk – it is the same as the return on cash or bonds.<sup>14</sup>

This is true, but only because the supply of housing in the UK does not respond much to higher demand and higher prices (economists therefore say that housing supply is price 'inelastic').

Instead, imagine that housing supply were price *elastic*, with individuals and developers swiftly responding to higher prices from increased demand by building more properties. In this case, demand for owning property still increases when interest rates fall. But that demand is met by an expansion of housing supply, meaning that more houses are built, and so property prices do not rise that much. In this scenario, more houses have been built and are now owned by people who want to rent them out. There is a resulting increase in supply to the private rental market, which pushes down rents. Therefore the yield in the rental market falls too.

The key implication of this is that the more elastic the supply of housing, the smaller the rise in property prices and the larger the fall in rents as a result of lower interest rates. This means that, even if it is true that much of the increase in *demand* for property over the last 20 years has been driven by lower interest rates, the extent to which *supply* is responsive to property prices has still played a crucial role in determining the overall impact on both house prices and rents. Most importantly, if housing supply were more elastic, then higher demand would have led to more homes being built and smaller increases in property prices. Of course, even if housing supply were more elastic than it

<sup>12</sup> I. Mulheirn, 'Parrots, housing and redistribution', 2017, <https://medium.com/@ian.mulheirn/parrots-housing-and-redistribution-419b36a72e52>; S. Wren-Lewis, 'House prices and rents in the UK', 2018, <https://mainlymacro.blogspot.com/2018/02/house-prices-and-rents-in-uk.html>.

<sup>13</sup> Demand for owning property also rises when interest rates fall, as the cost of borrowing to purchase a house has fallen.

<sup>14</sup> The expected return on housing that is rented out is the anticipated income from rental payments plus the expected capital gain (or loss) as a result of a change in the value (price) of the property.

currently is, house prices may still have risen over the last 20 years to some extent, due to increasing demand for property.

### 9.3 Should policymakers be concerned about the low homeownership rates of young adults?

The large falls in homeownership among young adults are stark. But are there good economic reasons for the government to be particularly concerned about low rates of homeownership specifically? Or is this just one aspect of a broader issue of very high land and property prices?<sup>15</sup>

There is an argument on 'efficiency' grounds for supporting more homeownership. For example, there is some evidence that owner-occupiers do more to take care of their home and their local neighbourhood, which benefits wider society rather than just the individual homeowner.<sup>16</sup> On the other hand, homeowners are likely to be less geographically mobile than renters, which could have costs in terms of reducing labour market efficiency.<sup>17</sup>

There is also a public finance rationale for policymakers to care about low rates of homeownership. In the longer run, if increasingly large numbers of people reach retirement without owning their own home, they might end up struggling to pay rent on a lower retirement income and/or could fall back on housing benefit and therefore place additional pressures on the public finances.

Other concerns about low levels of homeownership might actually reflect concerns about the quality and security associated with private renting itself. To address these concerns, policy might be better aimed at dealing with those issues directly rather than at increasing levels of homeownership. Of course, this would need to be done with careful consideration of the upwards pressure on rents that such interventions might risk.

However, the key economic rationale for concerns over falling levels of homeownership appears to be equity – both equity between generations and equity within the younger generation.

**Inequities between different generations:** Higher house prices and the resulting falls in homeownership make the current generation of young adults worse off in two ways compared with older generations. First, older generations benefited from the increase in house prices (which are generally untaxed, in particular as there is no capital gains tax on wealth held in primary residences), greatly increasing their wealth. At the same time, higher house prices mean a higher cost of homeownership for young adults.

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<sup>15</sup> For evidence of the similarity of land and property prices, see P. Cheshire, 'Urban containment, housing affordability and price stability – irreconcilable goals', Spatial Economics Research Centre (SERC), Policy Paper 4, 2009, <http://www.spatial-economics.ac.uk/textonly/SERC/publications/download/sercpp004.pdf>.

<sup>16</sup> D. DiPasquale and E. Glaeser, 'Incentives and social capital: are homeowners better citizens?', *Journal of Urban Economics*, 1999, 45, 354–84; N. E. Coulson and H. Li, 'Measuring the external benefits of homeownership', *Journal of Urban Economics*, 2013, 77, 57–67.

<sup>17</sup> See A. Oswald, 'A conjecture on the explanation for high unemployment in the industrialised nations: part 1', University of Warwick Economic Research Paper 475, 1996, [http://wrap.warwick.ac.uk/1664/1/WRAP\\_Oswald\\_475\\_twerp\\_475.pdf](http://wrap.warwick.ac.uk/1664/1/WRAP_Oswald_475_twerp_475.pdf).

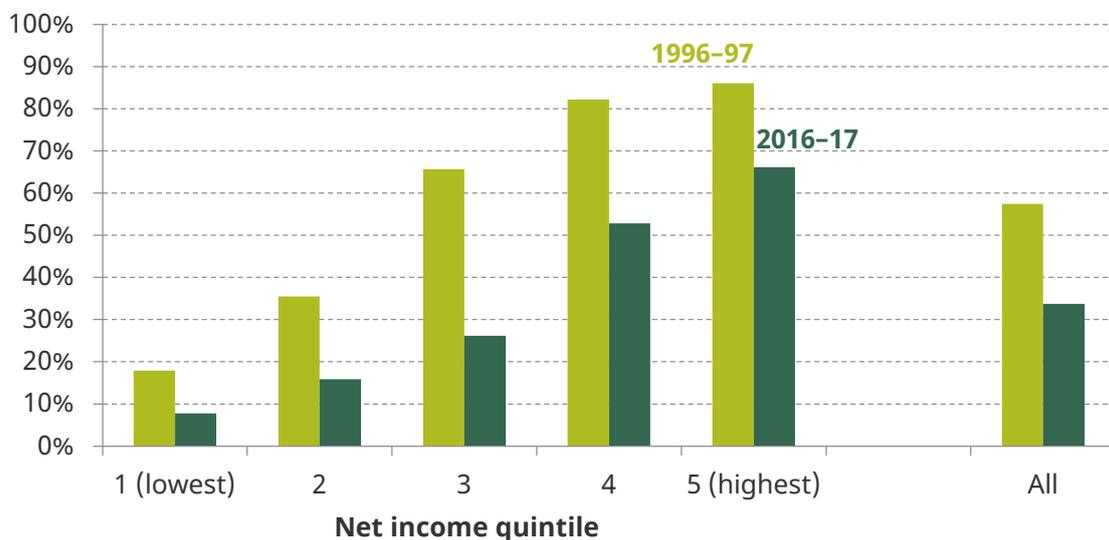
Second, higher house prices mean larger deposits and mortgages are needed to purchase a home. Since young adults typically have less liquid wealth, lower salaries relative to their lifetime earnings, and shorter credit histories than their older counterparts, they might particularly struggle to meet the up-front costs of buying as house prices rise.

**Inequities within the younger generation:** Some young adults will be able to access funds from their parents, creating an additional inequality between those who have access to family wealth and those who do not. By providing their children with a deposit for a home, wealthier parents may be able to help their children get around borrowing constraints in a way that people from less affluent backgrounds cannot.

However, evidence suggests that – at least so far – these effects are not large. After taking into account young adults’ own earnings, occupation and family situation, those from high socio-economic backgrounds are only a little (3 percentage points) more likely to own a home than those from low socio-economic backgrounds.<sup>18</sup> Having said this, differences in parental wealth may affect homeownership in other ways, such as those from wealthier backgrounds living in larger properties or more desirable areas.

Second, the decreases in homeownership have already affected different types of young adults in different ways. Over the last 20 years, the biggest falls in owner-occupation have been among those with middle incomes. Figure 9.8 shows how homeownership has changed across the income distribution since the mid 1990s. For middle-income young adults, the homeownership rate has fallen from around two-thirds (66%) to around one-quarter (26%) between the mid 1990s and the mid 2010s. This fall is larger than for those with the lowest incomes (a fall from 18% to 8%) or for those with the highest incomes

**Figure 9.8. Homeownership rates for those aged 25–34, by net income quintile**



Note: Quintiles use the net income of the individual plus the net income of any cohabiting partner.

Source: Authors’ calculations using the Family Resources Survey 1996–97 and 2016–17.

<sup>18</sup> J. Cribb, A. Hood and J. Hoyle, ‘The decline of homeownership among young adults’, IFS Briefing Note BN224, 2018, <https://www.ifs.org.uk/uploads/publications/bns/BN224.pdf>.

(from 86% to 66%). In terms of homeownership, middle-income young adults now look more similar to poor young adults than to their better-off peers.

Finally, if the huge increases in property prices (particularly in London and the South East of England) are sustained, then it is increasingly likely that some people will receive very large inheritances (probably towards the end of their working life), whereas others will not. It has always been the case that some people receive inheritances and others do not. But the fact that property prices are so much higher than 20 years ago, and relatively few people draw down on their property wealth in retirement, means that there are likely to be growing differences in the size of the inheritances received by people from different socio-economic backgrounds, and from different parts of the UK.

## 9.4 Quantifying the borrowing constraints faced by young adults

This section seeks to better understand why young adults are increasingly unable to purchase their first home in the face of rising prices and borrowing constraints. In particular, we look at how these constraints have evolved at a local, not just a national, level.

### Mortgage borrowing constraints

Our analysis focuses on two borrowing constraints: the ‘loan-to-value ratio’ and the ‘loan-to-income ratio’.

The **loan-to-value ratio** refers to the maximum amount a person or couple can borrow relative to the price of the house they wish to buy and how much they need as a cash deposit. It is therefore also known as a **deposit requirement**. Requiring a deposit helps to prevent buyers from going into negative equity, which is when the value of their house falls below the value of their outstanding mortgage debt.

The **loan-to-income ratio** refers to the maximum amount a person or couple can borrow relative to their annual gross (pre-tax) salary (not relative to their post-tax income, despite the name). Restrictions on this ratio are aimed at preventing buyers from taking out mortgages on which they cannot afford to make the repayments.

As well as protecting households from changes in house prices or income, these borrowing constraints help to minimise the risk of widespread mortgage defaults coinciding with falls in house prices. The specific level of each constraint is determined partly by banks or mortgage lenders themselves, and partly by regulation that seeks to preserve the financial stability of the banking sector and economy as a whole.

In order to see how much of a challenge these constraints pose to young prospective homeowners, we use data from the Family Resources Survey on the incomes, household structure and local authority of residence of a representative group of young adults aged 25–34. We define incomes to include those of individuals plus any cohabiting partner or spouse. This means that the incomes of a couple that live apart are not combined (even if they plan to move in with each other). We also include both homeowners and renters (and those living with their parents) in our sample. We combine the FRS with information about

the distribution of house prices at the local authority level, calculated using Land Registry data, which cover all properties sold in England between 1996 and 2016.<sup>19</sup>

Using these data, we can therefore answer two key questions:

- If a young adult wanted to buy the average-priced home in their area, how much would a 10% deposit be relative to their annual income? What if they were looking to buy one of the cheapest homes in their area?
- Assuming a young adult had already saved a 10% deposit, would borrowing 4.5 times their annual earnings cover the remaining cost of purchasing a home, both for an average property in their area and for a cheap property in their area?<sup>20</sup>

Separately considering the two different challenges young adults face when trying to get a mortgage helps us to understand how trends in property prices have affected young adults and which constraint appears more binding, and it can also help to guide policy responses.

### Maximum loan-to-value ratio (deposit requirement)

A maximum loan-to-value ratio requires that prospective buyers have a deposit for a portion of the value of the house.

Figure 9.9 shows that around 9% of mortgages have a deposit of less than 10%, and since 2008 essentially no mortgages are approved with less than a 5% deposit. The figure also shows that, despite an increase in the last few years, the proportion of people who have a deposit of less than 10% is still well below where it was prior to the financial crisis. The increasing scarcity of high loan-to-value mortgages reflects changes in risk perception or attitudes of lenders, rather than specific government regulation in this area. Regardless, it is safe to assume that the majority of prospective homeowners need at least a 10% deposit in order to get a mortgage. By definition, they are not able to use traditional credit markets – such as mortgage lenders – to help them pull this together; instead, deposits are usually based on savings (sometimes the result of a gift from parents or other family members).<sup>21</sup>

In order to see how the deposit requirement affects young adults, we ask: ‘If a young adult wanted to buy the median-priced property in their local area, how much would a 10% deposit be as a share of their annual net (post-tax) income (including the income of their cohabiting partner or spouse, if they have one)?’.

Figure 9.10 shows that in 2016, four-in-ten (41%) young adults would have needed to save more than a year’s net income for a 10% deposit on the median house in their area. This

<sup>19</sup> We only look at information up to and including the 2016 calendar year, to exclude the increase in second (and subsequent) property purchases in the first quarter of 2017 that occurred before increases in stamp duty for these transactions in April 2017.

<sup>20</sup> Holding the loan-to-value and loan-to-income restrictions themselves fixed (rather than reflecting the changes that actually occurred over time and are seen in Figures 9.9 and 9.10) allows us to isolate the impact of changes in incomes and property prices on the ability to save for a deposit and borrow enough to purchase a home.

<sup>21</sup> According to the English Housing Survey, 81% of first-time buyers in 2015–16 reported using savings as a source of their deposit; 29% had help from friends or family.

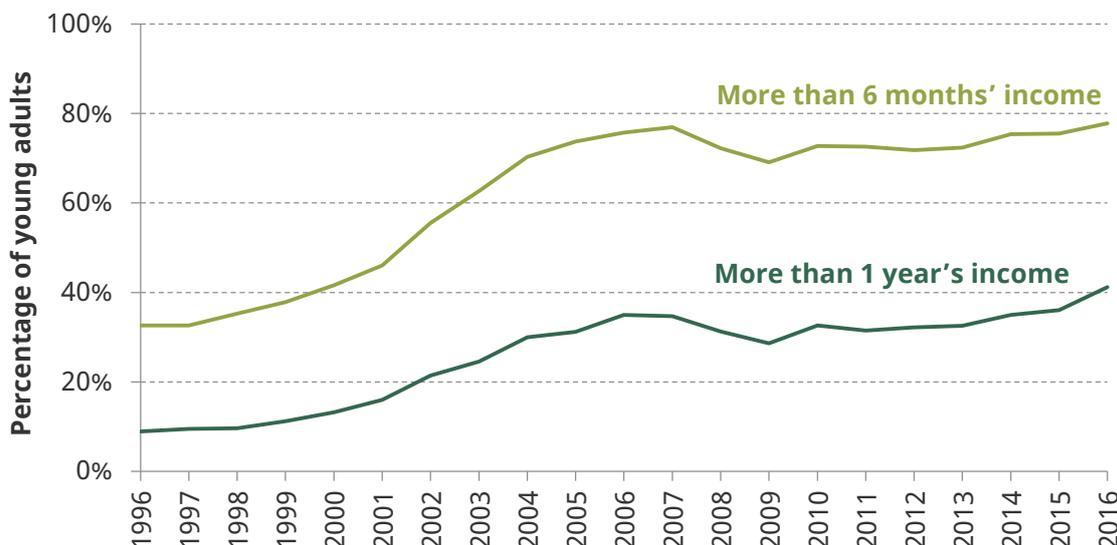
has risen dramatically since the mid 1990s, when only one-in-ten (9%) would have needed to do so. Moreover, by 2016, for the majority (78%) of young adults, a 10% deposit was more than six months' income, up from 33% in 1996. On both measures, it became much

**Figure 9.9. Percentage of mortgages with less than a 5% deposit and less than a 10% deposit, 2005–17**



Source: Authors' calculations using table 3.3 of Financial Conduct Authority product sales data, <https://www.fca.org.uk/publication/data/psd-mortgages-2017.xlsx>.

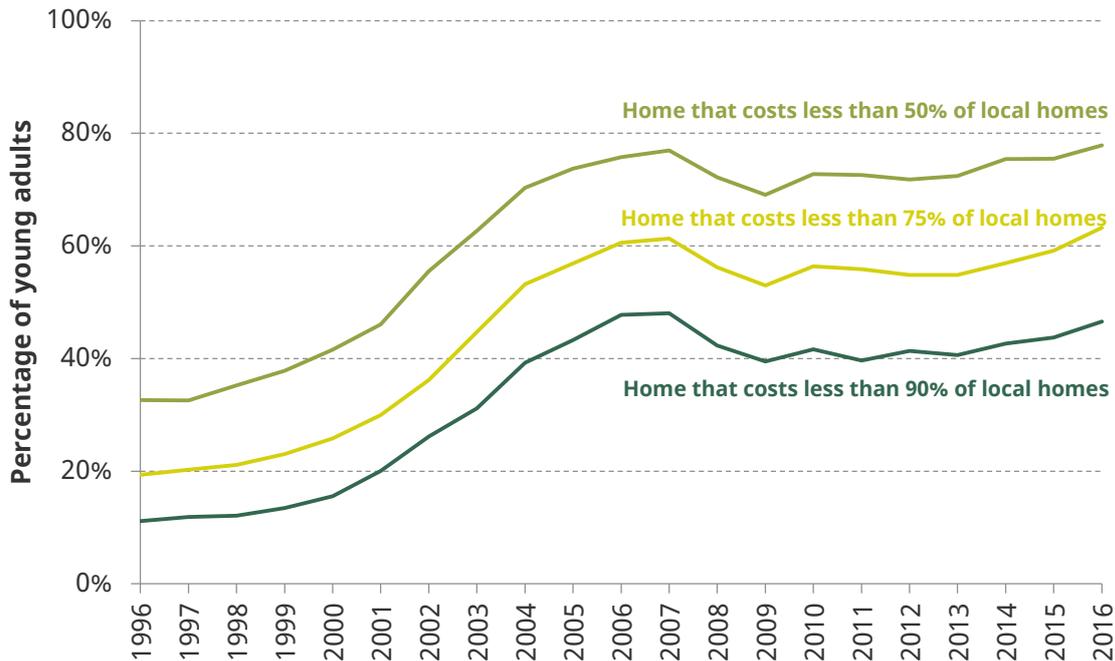
**Figure 9.10. Percentage of 25- to 34-year-olds for whom a 10% deposit on the median property in their area is more than six months or a year of their net annual income**



Note: Net annual income includes the income of the young adult and any cohabiting partner. It does not include the income of any parents or friends who they may reside with. 'Their area' is defined as the local authority district that they currently reside in. Individuals who report zero net income are excluded. England only.

Source: HM Land Registry price paid data and Family Resources Survey, both 1996–2016.

**Figure 9.11. Percentage of 25- to 34-year-olds for whom a 10% deposit is more than six months of their net annual income, by position in local house price distribution**



Note: Net annual income includes the income of the young adult and any cohabiting partner. It does not include the income of any parents or friends who they may reside with. 'Their area' is defined as the local authority district that they currently reside in. Individuals who report zero net income are excluded. England only.

Source: HM Land Registry price paid data and Family Resources Survey, both 1996–2016.

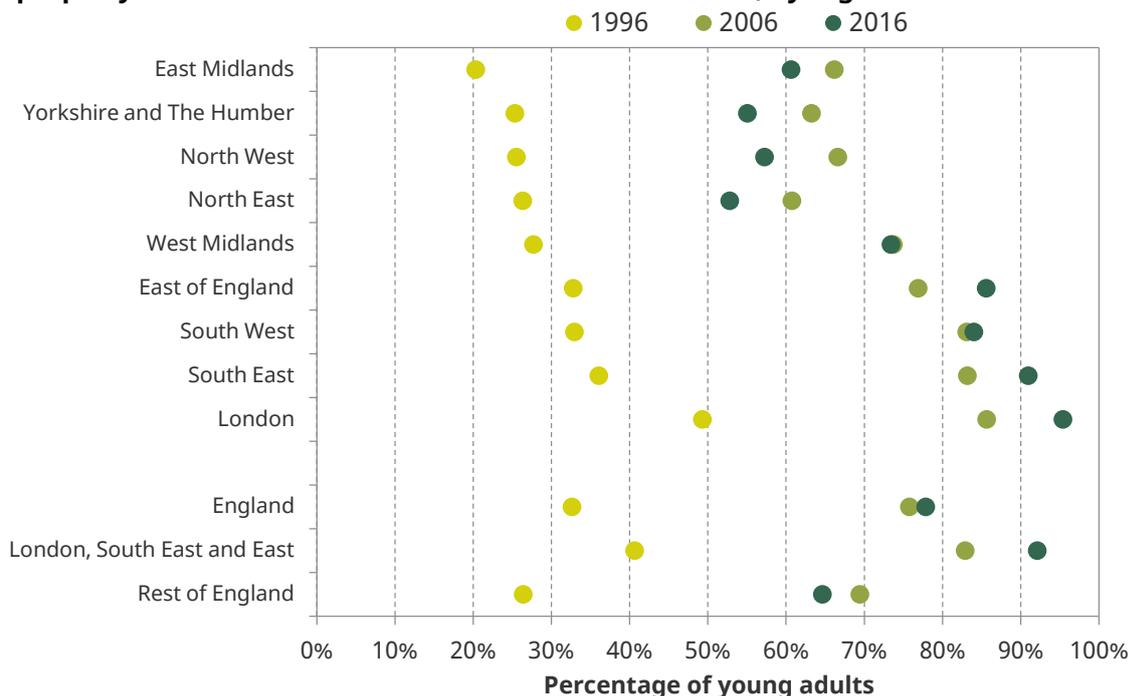
harder to raise a deposit between 1996 and the financial crisis, since when there has been relatively little change on these measures.

Figure 9.10 showed the challenge for young adults of saving a deposit for an average-priced property in their area. Figure 9.11 takes the top (light green) line from that figure (the proportion for whom a deposit is more than six months' income) and adds two further lines to analyse the extent to which it is easier to save for a deposit on a cheaper local property.

In 2016, 78% of young adults needed to save more than six months of their annual net income to have a 10% deposit on the median property. For a house at the 25<sup>th</sup> percentile (one cheaper than three-quarters of homes in their area), this proportion falls to 63%, and it is 47% for the very cheapest homes (a home cheaper than 90% of homes in the area). In other words, around half of young adults would need to save more than six months of income to raise a deposit on one of the cheapest properties in their area.

Differences in the savings required to buy relatively cheap versus averagely priced houses are held down by two factors. First, much of the variation in house prices is across, rather than within, local areas. Second, any given difference in house price translates to a much smaller difference in deposit (in pounds). In 2016, it would on average cost a young person a little over £50,000 more for the median property than for a property cheaper than three-quarters of local homes, but this increases the required (10%) deposit by only around £5,000.

**Figure 9.12. Percentage of 25- to 34-year-olds for whom a 10% deposit on the median property is more than six months of net annual income, by region**



Note: Net annual income includes the income of young adults and any cohabiting partners. It does not include the income of any parents or friends who they may reside with. 'Their area' is defined as the local authority district that they currently reside in. Individuals who report zero net income are excluded. England only.

Source: HM Land Registry price paid data and Family Resources Survey, both 1996–2016.

Figure 9.12 shows the variation in difficulty of raising a deposit for young adults in different regions. As outlined in Section 9.2, young adults in London face much higher prices than their peers in the rest of the country, but their average household incomes are broadly in line with other regions. It is therefore not surprising that, compared with their incomes, young adults in London need the largest deposits. In 2016, a 10% deposit on the average property in their area would be equivalent to more than six months of net income for 95% of 25- to 34-year-old Londoners. The proportion is almost as high in the South East (91%), East of England (86%) and South West (84%), but much lower (50–60%) in the East Midlands and regions in the North of England.

In all regions, saving for a 10% deposit became a much bigger undertaking in the 10 years between 1996 and 2006. The proportion of young adults for whom a 10% deposit on an average local home is more than six months' income rose by 43 percentage points on average, ranging from a 34ppt increase in the North East to a 50ppt increase in the South West.

After 2006, it continued to become more difficult to save for a deposit in three regions – London, the South East and the East of England. As Figure 9.3 showed, these are the only regions in which the average real house price was higher in 2016 than prior to the financial crisis. In these three areas combined, the proportion of young adults for whom a deposit is more than six months' income was 41% in 1996, 83% in 2006 and 92% by 2016. Elsewhere in England, the ease of raising a deposit has either stayed the same or improved since the mid 2000s. On average in the rest of England, the proportion for

whom a deposit is more than six months' income actually fell to 65% by 2016 (having risen from 26% to 69% between 1996 and 2006).

Overall, this analysis shows how difficult it has become for most young adults to save enough for a 10% deposit. Twenty years ago, only one-third of young adults needed more than six months' income for a 10% deposit on the average home in their area. By 2016, this proportion had risen to almost 80% of young adults in England, and to 91% in the South East and 95% in London. Even if they aim to purchase one of the lowest-priced homes in their area, half of young adults in England would need to save six months' income for a 10% deposit. In many areas of the country, there have been small improvements in the ease of raising a deposit since the financial crisis. But in three regions – London, the South East and the East of England – deposits have continued to rise relative to incomes. This shows how the combination of high house prices and relative stagnation in incomes of young adults has made it harder for young adults to accumulate enough savings to purchase a home in their local area without financial assistance from elsewhere.

### Maximum loan-to-income ratio

There has been considerable interest in the challenges young adults face in saving for a deposit. But for young adults who do manage to save the 10% deposit, the next consideration is the size of the mortgage that they will be able to get. We therefore consider the following question: 'Assuming they have a 10% deposit, for what proportion of houses in their local area could a young adult get a mortgage large enough to cover the remaining 90% of the (pre-deposit) price?'

Following a recommendation by the Financial Policy Committee of the Bank of England, the Financial Conduct Authority (which regulates the financial sector in the UK) has set out an expectation that all FCA-authorized mortgage lenders 'limit the number of mortgage loans made at, or greater than, 4.5 times loan-to-income ratio to no more than 15% of their new mortgage loans'.<sup>22</sup> Indeed, Figure 9.13 shows that, in 2017, only around 10% of new mortgages had a loan-to-income ratio of 4.5 or above – although that has increased from around 6% in 2007. While deposit constraints remain stricter than before the financial crisis, loan-to-income ratios appear to be more generous, presumably reflecting lower long-term interest rates and hence lower mortgage costs for any given debt.

Using the same data set described above, we take each young adult aged 25–34 in the FRS and use the gross (pre-tax) annual salaries of them and their cohabiting partner (if they have one) to work out what percentage of homes in their local area recently sold for less than 4.5 times their salary (including their partner's) plus a 10% deposit.

Figure 9.14 shows that, in 1996, 83% of young adults would have been able to borrow enough to purchase the average-priced home in their local area with a 10% deposit and a mortgage of 4.5 times their earnings. The vast majority (93%) of young adults who work and/or whose cohabiting partner (if they have one) works had sufficiently high earnings to cover the very cheapest homes in their area (those cheaper than 90% of local properties). This means that 20 years ago, if credit conditions had been the same as today, pulling together a deposit would have been the main barrier for young adults looking to get on the housing ladder.

<sup>22</sup> <https://www.fca.org.uk/publication/finalised-guidance/fg17-02.pdf>.

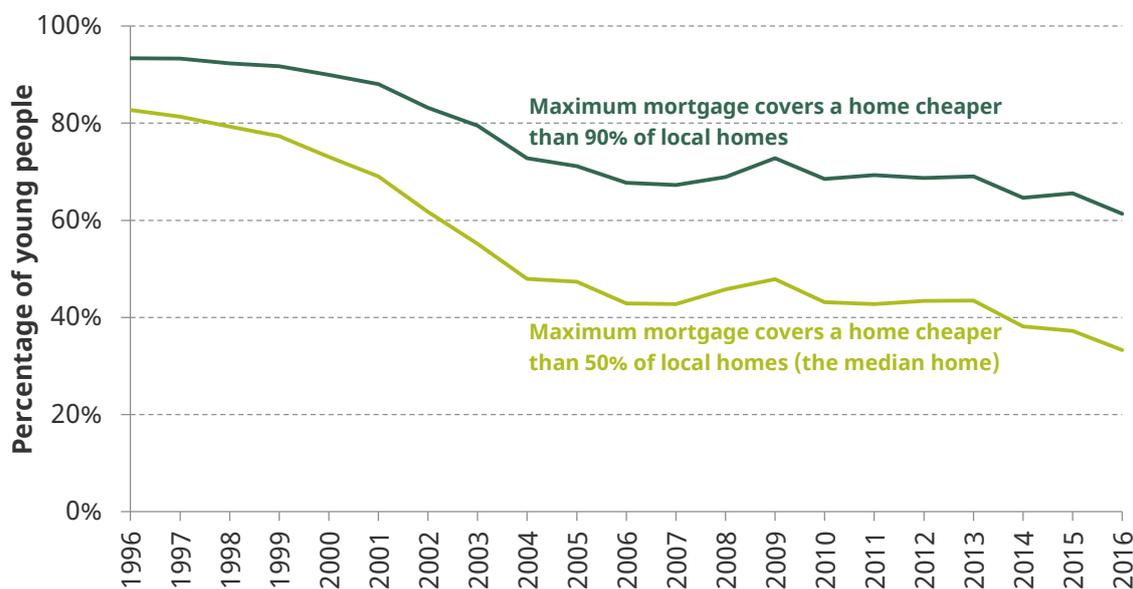
**Figure 9.13. Percentage of new owner-occupied mortgages extended at loan-to-income ratio of 4.5 or above**



Note: Data are shown as a four-quarter moving average.

Source: Chart A.9 of Bank of England, *Financial Stability Report*, June 2018, <https://www.bankofengland.co.uk/financial-stability-report/2018/june-2018>.

**Figure 9.14. Percentage of 25- to 34-year-olds who can purchase homes in their area with a mortgage at a loan-to-income ratio of 4.5, assuming they have a 10% deposit**



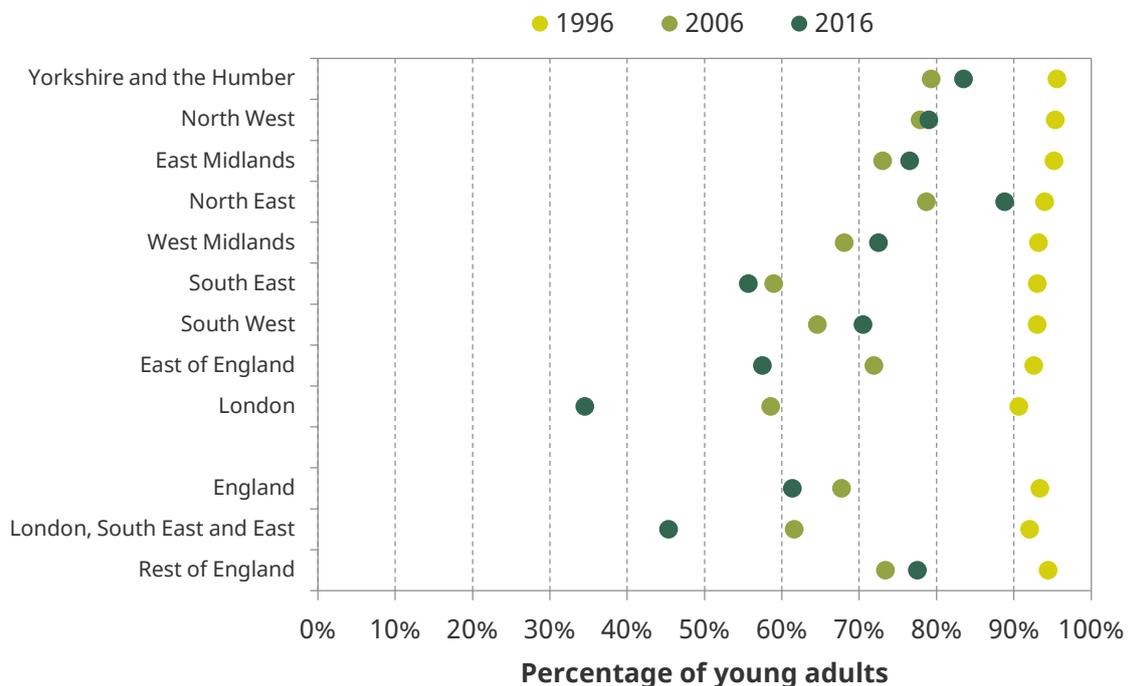
Note: 'Income' includes the annual salary of the young adult and any cohabiting partner. It does not include the annual salary of any parents or friends who they may reside with. 'Their area' is defined as the local authority district that they currently reside in. Individuals who report zero net income are excluded. England only.

Source: HM Land Registry price paid data and Family Resources Survey, both 1996–2016.

The figure also shows how much this situation has changed in the last two decades. In 2006, for only 43% of young adults would a mortgage of 4.5 times their earnings cover the median property in their area even if they had a 10% deposit, a fall of 40ppts. For only 68% would it cover the very cheapest properties (those cheaper than 90% of homes in the area), down 26ppts. Since then, these proportions have fallen further, albeit at a slower pace. In 2016, even if they had managed to save for a 10% deposit, only three-in-five (61%) 25- to 34-year-olds earned enough that borrowing 4.5 times their annual earnings (including their partner's) would cover even one of the cheapest homes in their area; only one-third (33%) could borrow enough to purchase the average property in their area (again assuming they had a deposit of 10%).

Figure 9.15 shows the same information broken down by English region, focusing on the proportion who can borrow enough to purchase one of the cheapest properties in their area (i.e. one cheaper than 90% of local homes). Between 1996 and 2006, the regional trends mirrored the national picture shown in Figure 9.14. In 1996, it was rare in all regions of England for 4.5 times the earnings of a young person not to cover the remaining cost of the cheapest homes in their area after putting down a 10% deposit. Across the country, the proportion able to borrow enough on this measure decreased steadily between 1996 and 2006 – ranging from a 15ppt decline in the North East to much larger drops in London (32ppts) and the South East (34ppts).

**Figure 9.15. Percentage of 25- to 34-year-olds for whom a mortgage with a loan-to-income ratio of 4.5 would cover the cheapest properties in their area, assuming they have a 10% deposit, by region**



Note: 'Income' includes the annual earnings of young adults and any cohabiting partners. It does not include the annual earnings of any parents or friends who they may reside with. 'Their area' is defined as the local authority district that they currently reside in. Individuals who report zero net income are excluded. England only.

'Cheapest properties' is defined as a property at the 10<sup>th</sup> percentile, meaning the property that is cheaper than 90% of properties in their local authority.

Source: HM Land Registry price paid data and Family Resources Survey, both 1996–2016.

Over the subsequent 10 years from 2006 to 2016, the trend continued in London, the South East and East of England – the proportion who could buy a cheap local property in these three regions combined fell from 92% in 1996, to 62% in 2006 and 45% in 2016, meaning that the proportion essentially halved over 20 years. However, in the rest of England, the situation for young adults has improved since 2006 – the proportion able to borrow enough increased by 4ppts on average (ranging from a 1ppt increase in the North West to a 10ppt rise in the North East).

The trend in London is particularly dramatic. In 1996, if they had a 10% deposit, 91% of young adults in London would have been able to buy the 10<sup>th</sup> percentile property in their local authority if they could borrow 4.5 times their gross earnings. This proportion fell to 59% in 2006 and 35% in 2016. Only a third of young Londoners could, in the latter year, borrow enough to buy the cheapest homes in their area even if they managed to save for a 10% deposit.

If they are determined to buy, these households must find a way to increase their deposit to fill the gap, such as turning to family members for help with a larger deposit (meaning they need to borrow less) or purchasing a home in a cheaper area. From the perspective of meeting the purchase price on a house, saving for a deposit is slow: a £1,000 gift from family increases the buyer's purchasing power by £1,000. An extra £1,000 in earnings increases the amount that can be borrowed by £4,500 under the loan-to-income constraint, and on top of that these extra earnings (which, post-tax, would be £680 for an employee paying basic-rate income tax and employee National Insurance contributions) could be used to save for a larger deposit.

While much of policymakers' attention has been focused on helping individuals saving towards a deposit, this analysis shows that, on their own, policies to boost deposits are not enough, as many cannot borrow enough even with one. It also shows why high house prices in London (and to a slightly lesser extent the South East and East of England) make it so difficult for young adults to purchase a home. Even if they have a 10% deposit, in these regions only 45% could get a mortgage to buy one of the cheapest properties in their area; in London only one-third could.

However, if young adults were able to borrow more, it is not clear they would; committing to service and repay the large mortgage implied by high prices may not be feasible or desirable for many young adults. Indeed, as was shown in Section 9.2, even for those who do get onto the property ladder, average total mortgage repayments are far higher than they were 20 years ago. There is evidence (from the same section) that young adults are increasing their mortgage terms to stretch out repayments over a longer period, potentially because committing to higher monthly repayments would be a difficult financial undertaking.

## **9.5 Policy responses to low homeownership among young adults**

This section considers potential policy responses to low homeownership rates among young adults. We discuss four broad groups of policy options that have been or could be used.

First, the most direct response to borrowing constraints would be for policymakers to relax the regulation on banks and mortgage lenders that restricts residential lending. Second, the government could enact policies to advantage young adults when purchasing a home or, third, to disadvantage purchasers of second homes or buy-to-let properties. Fourth, the government could enact policies that directly increase the number of homes that are built, or reforms that allow supply to increase more flexibly as property prices rise. We assess each of these options in turn – looking at how they may affect the housing market, and who will benefit most from different policies.

### Fewer restrictions on mortgage lending

One response to the borrowing constraints that we have outlined would simply be to allow people to borrow more or to put lower deposits on their houses.

However, this sort of policy might not actually be effective in boosting homeownership among the young. Property prices are so high, particularly in south-eastern England, that many young adults may not be able to afford to borrow more even if they were allowed to. Moreover, unless the supply of housing increases in response to the extra demand from people who could now borrow more, relaxing lending rules will just push up house prices further,<sup>23</sup> benefiting those who already own property and meaning that prospective buyers face even higher prices.

In addition, relaxing lending restrictions could pose serious risks to borrowers, the financial sector and society more generally, particularly if banks believe that they would be bailed out if there were large-scale defaults.<sup>24</sup> Given these concerns, it would be prudent to be very cautious before loosening lending regulations, while there are other policy alternatives to help boost homeownership.

### Giving young first-time buyers a financial advantage in the market

Another set of potential policies try to give young adults a financial advantage relative to other potential property buyers when purchasing a home, either by topping up their savings or by reducing the effective cost of buying a house. The coalition and Conservative governments have introduced several of these policies in recent years, including:

- **Lifetime ISA:** This is a new type of savings account that can be opened by 18- to 40-year-olds and paid into until age 50. The government provides a 25% top-up to saving made each year, with a maximum annual bonus of £1,000, on the condition that the funds are subsequently used towards a deposit on a first home (as long as it costs £450,000 or less and is bought with a mortgage), or not withdrawn until after age 60. The Lifetime ISA is similar in many ways to the Help to Buy ISA, which is being phased out in late 2019 (though it has slightly different restrictions). In 2017–18, 166,000 Lifetime ISAs were opened, less than 2% of all ISAs opened that year.<sup>25</sup>

<sup>23</sup> Y. Chu, 'Credit constraints, inelastic supply, and the housing boom', *Review of Economic Dynamics*, 2014, 17, 52–69.

<sup>24</sup> L. Dam and M. Koetter, 'Bank bailouts and moral hazard: evidence from Germany', *Review of Financial Studies*, 2012, 25, 2343–80.

<sup>25</sup> Source: Table 9.4 of HMRC Individual Savings Account Statistics, <https://www.gov.uk/government/statistics/number-of-individual-savings-accounts-isas-amounts-subscribed-to-each-component-and-average-subscription>. As ISAs need to be registered for annually, this includes anyone who paid into an ISA in 2017–18. However, it is important to note that there were few Lifetime ISA

- **Cuts to stamp duty for first-time buyers:** As announced at the Autumn Budget 2017, the government has created an exemption from stamp duty land tax for all first-time buyers who purchase a residential property worth £300,000 or less. The government has also introduced a cut of up to £5,000 to stamp duty for first-time buyers purchasing a property of between £300,000 and £500,000 – though for any property above this price, there are no discounts available.
- **Help to Buy:** Introduced in April 2013 by the coalition government, Help to Buy (equity loan) is a policy under which the government will provide a low-interest loan worth up to 20% of the value of the property (40% in London) for prospective buyers of new-build homes with a maximum price of £600,000. The buyer needs at least a 5% deposit themselves and a mortgage for the rest. Only prospective owner-occupiers are eligible – properties bought through Help to Buy cannot be sublet or rented out. By March 2018, 170,000 properties had been bought through the scheme, with government loans of £8.9 billion: this works out at an average of just over £50,000 of government loan per property purchased. Although it is not required by the scheme, four in every five property purchases have been by first-time buyers, of which 83% had a deposit of less than 10%.<sup>26</sup> The policy is set to continue until March 2021.

In Section 9.4, we discussed the two different borrowing constraints that young adults face – saving for a deposit, and a maximum loan-to-income ratio. The three policies outlined above help ease these constraints in different ways. The top-ups in the Lifetime ISA can help young adults save for a deposit more quickly, either by speeding up the time taken to save a certain deposit or by increasing the size of a deposit such that the mortgage needed is lower. Similarly, cuts to stamp duty mean most first-time buyers will pay little or none of this tax on their purchase. Since mortgages do not cover stamp duty, this also effectively reduces the amount that young adults need to save to cover the up-front costs of buying a house. Help to Buy tackles both constraints – prospective buyers only need to save for a 5% deposit and they do not need to apply for such a large mortgage.

In general, policies such as these that make it easier to buy a house will increase demand, in turn (to the extent to which supply is inelastic) pushing up house prices. If these policies were extended to anyone purchasing a property in the UK, it is therefore unlikely that they would increase homeownership; instead, prices would rise in line with the subsidy. However, by restricting eligibility to a certain group, they offer younger first-time buyers an advantage relative to other purchasers (such as older people buying second homes or buy-to-let property). This means that these policies may push up the share of properties that are owner-occupied by young adults and reduce the share of properties owned as second (or subsequent) homes.

However, there are a number of downsides to this type of policy.

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products on offer when the policy launched in April 2017 (<https://www.ft.com/content/a487303e-fe6f-11e6-96f8-3700c5664d30>).

<sup>26</sup> Source: Ministry of Housing, Communities and Local Government, 'Help to Buy (Equity Loan scheme) and Help to Buy: NewBuy statistics: data to 31 March 2018, England', 2018, <https://www.gov.uk/government/statistics/help-to-buy-equity-loan-scheme-and-help-to-buy-newbuy-statistics-april-2013-to-31-march-2018>.

First, they could cause house prices to increase, although this may not be by the full amount of the subsidy since eligibility is restricted to only a subset of potential home buyers. A second concern is that policies such as these can be difficult to target. They benefit some young first-time buyers who were already able and planning to purchase a home (either with or without parental help), so they may have significant 'deadweight', offering payments to people for things they would have done anyway. A third potential concern is that these policies benefit young adults who are, on average, much better off than their peers.

Finally, from a public finance perspective, Help to Buy adds risk to the government balance sheet. In particular, the government could face losses if property prices fall and borrowers default on their loans at the same time, as the value of the property may not cover the outstanding balance of the loan. As the Office for Budget Responsibility (OBR) points out in its 2017 Fiscal Risks Report, housing-sector-related risks are 'mostly likely to crystallise alongside other economy-related risks' – in other words, at a time when the public finances are already under pressure. However, the OBR also notes that, relative to the overall effect that changes in the housing market could have on the public finances, the contribution from loan- or guarantee-based schemes such as Help to Buy that the government offers to various players in the housing market is small.<sup>27</sup>

### Disadvantaging other buyers in the housing market

The government could also seek to increase homeownership among young adults by disadvantaging other prospective buyers in the housing market. For example, it could make it more costly to own, or seek to own, multiple properties – this should reduce demand for housing from these buyers, exerting downwards pressure on property prices with potential benefits for young buyers.

Policies of this type will mainly affect older generations. Around 14% of those born between 1950 and 1954 own a home in addition to their primary residence.<sup>28</sup> In addition, most private landlords are older people; the Council of Mortgage Lenders Landlord Survey 2016 found that 61% of landlords surveyed were aged 55 or above, and 81% were 45 or older.

There are a number of examples of current government policies in this area:

- **Higher rates of stamp duty on second homes:** In April 2016, the government introduced an extra levy of 3% of the purchase price, on top of the normal stamp duty, for buyers who already own a home. This affects both those purchasing a second home for their own consumption (such as a holiday home) and those purchasing a home to let out.
- **Reduction of buy-to-let mortgage interest tax relief:** By April 2020, private landlords will not be able to deduct the cost of mortgage interest from their rental income at their marginal rate. They will have to pay tax on rental payments gross (rather than net) of interest payments, and will instead receive a 20% income tax credit. This means that

<sup>27</sup> Paragraphs 7.39 and 7.40 of Office for Budget Responsibility, *Fiscal Risks Report: July 2017*, 2017, <http://obr.uk/frr/fiscal-risk-report-july-2017/>.

<sup>28</sup> R. Crawford, 'The use of wealth in retirement', IFS Briefing Note BN237, 2018, <https://www.ifs.org.uk/uploads/publications/bns/BN237.pdf>.

landlords with mortgages on their rented property who are also higher-rate (or additional-rate) income tax payers will see (potentially large) increases in their tax bills (landlords who pay only the basic rate of tax, and those who own their second property mortgage-free, will in practice see no change in their tax liability). Companies and landlords of furnished holiday lettings will be unaffected by the change.

- More broadly, additional **regulation of the private rental market** could, if it reduces the profitability of being a landlord, reduce demand from buy-to-let buyers in the property market.

These policies may well help to drive down house prices and increase homeownership amongst young adults. However, there are some distinct disadvantages to these kinds of policies that make them very much ‘second best’ from an efficiency point of view. The current tax system already favours owner-occupation over renting. By increasing landlords’ costs (for example, through additional stamp duty levies or reduced mortgage interest relief), these policies might decrease the supply of property to the private rented sector for a given rental price. This would likely lead to *increased* private rents, making those who rent privately – the majority of young adults – worse off.

### Influencing housing supply

The final broad set of policies we consider are those aimed at increasing the supply of housing and the responsiveness of supply to changes in house prices.

In his 2017 Autumn Budget speech, Mr Hammond set out the government’s ambition to boost the net increase in housing supply to 300,000 homes (including conversions as well as new builds) per year by the mid 2020s. By historical standards, this would be high. Even in the 1960s, when the public sector funded the construction of a large number of homes, once demolitions are factored in, net additional dwellings averaged 222,000 per year in England.<sup>29</sup> The figure is also high by current standards: in 2016–17, the English dwelling stock increased by 217,000.<sup>30</sup>

To achieve a higher rate of housing supply, there are broadly two sorts of reforms the government could consider. It can either act to increase the supply of homes directly, or act indirectly by increasing the ‘elasticity of supply’ (the responsiveness of supply to an increase in prices).

### Directly increasing the supply of housing

In England, most construction of new homes is funded by private developers who borrow to build, in anticipation of recouping their investment by selling the new builds on the open market. One way for the government to increase housing supply is to directly cover the costs of constructing new homes.

In the past, local authorities used local tax revenues and capital grants from central government to fund the construction of council housing. For most of the 1960s and 1970s, publicly funded development accounted for around half of new builds. These homes

<sup>29</sup> Average annual increase in the dwelling stock in England between 1 April 1961 and 31 December 1969 calculated from table 104 of Ministry of Housing, Communities and Local Government, live tables on dwelling stock, <https://www.gov.uk/government/statistical-data-sets/live-tables-on-dwelling-stock-including-vacants>.

<sup>30</sup> Table 120 of MHCLG live tables on dwelling stock.

remained the property of the state (at least until Right to Buy was introduced), and were typically let at below-market rents. In the early 1980s, there was a large decline in the number of homes built each year with public funds. Most building of social housing that did take place was done by housing associations, funded by a combination of capital grants from government and borrowing from the private sector.<sup>31</sup> Housing associations are not classified as part of the public sector, so these homes are not owned by the state, but the process by which they allocate homes and the rents they charge are heavily regulated.

The current central government vehicle for providing capital funding for social rental and shared ownership housing is the **Shared Ownership and Affordable Homes Programme**. The scheme has a budget of £4.7 billion between 2016 and 2021, which in annual terms is much less than was available 10 years ago through similar programmes.<sup>32</sup> The funding is explicitly targeted at building homes for shared ownership – expected to make up 88% of houses built through the programme – rather than homes for social rent. In a shared ownership arrangement, a portion of the property is sold on the open market, whilst a portion is retained (normally by a housing association). For the tenant, this means paying a mortgage on the share that they own, and rent on the remaining share.<sup>33</sup>

Within a fixed capital budget, there is a trade-off between building homes for social rent and increasing the supply for shared ownership. The mix of tenures chosen will have different implications for homeownership and housing outcomes more generally. When social housing is built to be rented, it can only increase homeownership amongst young adults indirectly. An increase in social housing stock would result in a subset of poorer families switching from the private rental sector into the social rented sector, which offers greater stability and security. Lower demand in the private rental sector would be likely to lead to lower rents in that sector. And, as rents fall relative to prices, demand for buy-to-let properties would fall too. All else equal, this would be likely to reduce house prices and potentially boost homeownership as house prices fall.<sup>34</sup>

By contrast, the expansion of shared ownership could have a direct impact on homeownership amongst young adults. Allowing prospective owner-occupiers to buy only a share of the house they live in means that they are able to invest some of their money in housing (they share in any increases in the price of the house), even if they cannot save enough, or borrow enough, to cover the full value of a property where they would like to live. In principle, if they are able to save from their remaining income, and if their earnings grow over time, they may eventually be able to purchase the house in its entirety (though

<sup>31</sup> Housing associations are currently not classified as public sector bodies, so their borrowing does not count towards the public sector total. This was not the case between 2008 and 2017.

<sup>32</sup> For more information about social housing and changes in funding under the coalition government, see S. Adam, D. Chandler, A. Hood and R. Joyce, 'Social housing in England: a survey', IFS Briefing Note BN178, 2015, <https://www.ifs.org.uk/uploads/publications/bns/BN178.pdf>.

<sup>33</sup> In addition, in September 2018, Prime Minister Theresa May announced a supplementary £2 billion of funding for homes for social rent. This is spread over 10 years so does not represent a large increase in the annual budget. At the Conservative party conference in October 2018, the Prime Minister also announced the removal of caps on the borrowing local authorities can make within their housing revenue accounts (their budget for investment and maintenance of council housing stock).

<sup>34</sup> This analysis assumes that the land for building social housing would not otherwise have been used for building houses to be sold for their market value – which would have led to a direct increase in the supply of homes available for purchase.

the speed at which they can build up savings will be affected by the rent due on the remaining portion of the property).

However, focusing government funding on homes for shared ownership will not help people for whom owning a property will never be possible (such as many low-income social or private renters). If construction of social housing does not keep up with sales through Right to Buy and Right to Acquire, housing costs for this group could increase over time, as more people would live in the (higher-cost) private rental sector.

### Increasing the elasticity of supply

In addition to (or instead of) funding the construction of homes itself, the government could choose to help remove barriers to private sector construction of houses to be sold at market prices.

The planning system poses a substantial barrier to construction. Local authorities place restrictions on development in their area: in order to build on a particular plot of land, developers must apply for permission, which – if granted – can be conditional on meeting certain ‘planning obligations’. A well-known feature of the planning system is the existence of designated green-belt areas, which cover 13% of land area in England, preventing development around London, metropolitan parts of the Midlands and northern England, Bristol, Oxford, Cambridge and Bournemouth.<sup>35</sup>

There are reasons to think that some restrictions on development are beneficial. For example, an unregulated market may not take into account the value of public goods, such as parkland, so some regulations could help prevent ‘overdevelopment’.

However, the green belt places restrictions on building around the areas with the highest productivity and earnings, especially in southern England. The South East (including London) has the most stringent planning restrictions, as well as the highest demand for housing due to its wealth and productivity. This combination drives the extremely high prices shown earlier in the chapter and has made it increasingly hard for young adults to purchase a home in these areas. A previous study, published in the *Economic Journal*, concludes that, if the planning regulations in the South East were relaxed to match those in the North East, house prices in the South East would have been around 25% lower in 2008 than they were.<sup>36</sup>

More generally, by increasing the uncertainty and administrative burden of development, planning systems make development less responsive to house prices – in other words, they make supply more inelastic. Over the longer term, this could contribute to systematically lower housing supply, leading to higher property prices and rents.

As well as affecting housing supply over the longer term, strict planning constraints also compromise the effectiveness of policies that increase housing demand, such as transfers to younger generations seeking to buy homes. With price-inelastic supply, higher demand

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<sup>35</sup> [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/642684/Green\\_Belt\\_Statistics\\_England\\_2016-17.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/642684/Green_Belt_Statistics_England_2016-17.pdf).

<sup>36</sup> C. Hilber and W. Vermeulen, ‘The impact of supply constraints on house prices in England’, *Economic Journal*, 2016, 126, 358–405.

due to these policies would push up house prices, rather than deliver substantial increases in homeownership.

The coalition and Conservative governments have introduced a series of policies that seek to make the planning system easier to navigate, in order to help make supply more responsive to price:

- **‘Reforming the planning system’:** Changes implemented in recent years have included measures to increase certainty for developers, by: requiring planning authorities to publish more information about their intentions for new home building in their area; reducing the amount of negotiation in the planning process; and introducing permitted development rights. In London, ‘fast-track’ planning has been introduced whereby permission is (in principle) given by default if certain criteria are met.
- **New Homes Bonus:** This provides local councils with an incentive to permit housing developments by matching the increased council tax revenues on new-build properties for four years.

The reforms that have been introduced are sensibly aimed at loosening some supply restrictions. But the planning system remains one fundamentally based on case-by-case discretion, with elements of developer–planner negotiation and of unavoidable local politics. Even with greater guidance and information put out by planning authorities, the reforms made so far are more likely to deliver incremental improvements in the system than to create radical change in the approach to development taken by local planning authorities.

Finally, there are many other ways in which the government is trying to increase the elasticity of housing supply by making it easier to access the land and funding that make development possible. There is a wide range of current government policies that fall into this category (reflecting the wide range of potential barriers), primarily aimed at helping developers in the earliest stages to secure land and prepare sites. Some examples include:

- **Building on public sector land:** There have been various pushes for the public sector to sell its land for development. One of the roles of Homes England is to coordinate making public sector land available to private developers for housing construction.<sup>37</sup>
- **Home Building Fund:** The government provides loans of between £250,000 and £250 million to private sector organisations to fund development costs of building homes or the costs of site preparation. A total of £4.5 billion of loans are available over six years.
- **Housing Infrastructure Fund:** This provides central government money to local authorities in order to build infrastructure needed to allow the building of new homes or to accompany new homes. A total of £5 billion of grant funding is available over six years.

In all three of these cases, the underlying rationale is that there are profitable projects that are prevented from moving forwards due to market failures. Potential market failures

<sup>37</sup> See Chapter 6 for more details.

that create barriers to profitable projects include developers finding it hard to raise credit to fund even profitable developments, and the existence of public goods (such as new link roads) that need to be provided alongside the development, but which will benefit a wider population than will live in the new homes.

By intervening with targeted assistance, the government hopes to overcome these barriers and use a relatively small amount of money to 'enable' large amounts of development. Whether it is effective in practice will hinge on targeting – is the government able to identify those cases in which private developers really do have a profitable project but are constrained by a market failure? Without good targeting, these policies could have a significant amount of deadweight and make little impact on housing supply.

The current and past governments have pursued a range of policies to help directly boost, and increase the elasticity of, housing supply in England. Many of these policies seem to have potential attractions, but with so many modest changes being made at the same time it is difficult to predict how they will interact, and in the future it will be challenging to look back and unpick the contribution of any individual policy to any changes we may see in housing supply. It remains to be seen whether their cumulative effect will be enough to significantly boost housing supply and limit property price growth.

### Summary

Overall, with firms and individuals<sup>38</sup> unable to build many more houses in response to demand, the result of higher demand has been higher prices over time (even after adjusting for inflation). There are many reasons that demand for property has increased over time, particularly in London and the South East, including a growing population, higher incomes and lower interest rates. However, as we set out in Section 9.2 with regard to falling interest rates, the extent to which higher demand (for whatever reason) leads to higher property prices depends on the elasticity of supply.

Indeed, over the longer run, it will be hard to achieve sustained levels of higher homeownership without greater increases in the supply of homes. Over time, the demand for housing (and space to live in) tends to go up (although higher interest rates might moderate some demand for housing). This is not just as a result of population growth, but also because housing is a 'normal' good: as incomes rise, people want more space to live in. Indeed, housing is almost certainly 'income elastic': as incomes grow, demand for housing increases more rapidly than incomes.<sup>39</sup> This means that, as the country (hopefully) gets richer over time, demand for housing will continue to grow strongly.

If the country continues to have a planning system that restricts the ability to build more homes in the areas where prices rise, this higher demand is likely to lead to increasingly higher property prices. Higher property prices reduce the ability of younger adults to

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<sup>38</sup> Although not many properties are built by individuals (independently of developers) in the UK at the moment, in other European countries, such as Belgium and France, it is much more common. See <https://www.sheffield.ac.uk/news/nr/home-building-architecture-development-grand-designs-custom-build-europe-1.560893>.

<sup>39</sup> See, for example: G. Meen, 'Homeownership for future generations in the UK', *Urban Studies*, 2013, 50, 637–56; and P. Cheshire and S. Sheppard, 'Estimating the demand for housing, land, and neighbourhood characteristics', *Oxford Bulletin of Economics and Statistics*, 1998, 60, 357–82.

purchase homes, and restrictions on the supply of homes also lead to higher rental prices for those who do not own a home.

If, on the other hand, increased demand led to higher supply and construction of homes (for example, if planning constraints on green-belt areas were relaxed), particularly in south-eastern England, then prices would be likely to moderate. More young adults would be able to purchase homes, and private renters would face lower private rental costs.

## 9.6 Conclusion

This chapter has examined barriers to homeownership and policies that might be used to address the falls in homeownership among younger adults over the last 20 years. Property prices in the UK grew faster than incomes, rents and the price of other goods and services between the mid 1990s and the financial crisis. Over this period, house prices in south-eastern England (including London) grew the fastest and, after small declines, they have continued to increase over the last decade. Elsewhere, they remain below their 2007 peak. The huge increases in property prices are the key reason for declining homeownership among young adults, partly because they are unable to buy and partly because they are unwilling to do so at prevailing prices.

There are a number of economic reasons to be concerned about low homeownership for young adults; for example, higher homeownership could have positive spillover effects onto society as a whole. The most unambiguous of these reasons is that high property prices, and the resulting low homeownership rates, increase inequalities both between generations (as older generations benefit from higher property prices at the expense of young ones) and within the younger generation (as those with greater parental wealth will see increasingly large benefits compared with others in their generation).

In policy commentary, there has been a lot of focus on the difficulty prospective first-time buyers have in saving enough for a 10% deposit on a home. It has indeed become harder to save for a 10% deposit over the last 20 years: the proportion who need to save an amount equivalent to their total annual net income in order to buy an average-priced home in their local area has increased more than fourfold, from 9% to 41%. Over the last 10 years, it has become harder to save for a deposit in the South East, East of England and London. Elsewhere in England, it has become slightly easier, reflecting differential trends in house prices.

A key additional constraint is that even when young adults have a 10% deposit, they might not be able to borrow enough to purchase a home. Twenty years ago this was rare, but now almost four-in-ten young adults with a 10% deposit cannot borrow enough to purchase even one of the cheapest properties in their local area, and almost two-in-three cannot in London. Even if they could borrow more, it is not clear they would, as committing to service and repay the large mortgage implied by high prices may not be something that many young adults want to do.

The key to increasing homeownership is lower property prices, at least relative to young families' incomes. In the medium to long term, the way to achieve this is a greater, and more price-responsive (or elastic), supply of housing. Property prices are highest in south-eastern England (including London) not only because it is the richest area of the country,

but also because the planning regime is far more restrictive there than in the Midlands and northern England.

A system that makes it easier for individuals and developers to build new homes in response to growing demand has four key benefits. First, a greater supply of homes would push down (or at least moderate) property prices, meaning more young adults are able to purchase a home. Second, more supply also puts downward pressure on private rents, benefiting the (on average poorer) section of society who will remain in private rented accommodation. Third, it would allow areas that face higher demand (for example, as a result of new job opportunities) to expand more easily, preventing localised increases in property prices. Fourth, it makes any other form of policy aimed at benefiting younger generations less likely to lead to increases in house prices. Without more elastic supply, policies to advantage first-time buyers, such as the Lifetime ISA or cuts to stamp duty – whatever their other merits – will risk increasing property prices further still.

As many others have acknowledged, it is not just how many homes are built, but where they are built. This chapter has also highlighted a clear geographic pattern to trends in prices and homeownership. The most productive and wealthiest parts of England are also those with the largest price increases and most restrictive planning constraints. As well as influencing the ability of young adults to buy, this has implications for a variety of other important issues not discussed in this chapter, including economic productivity, time spent commuting and inequality in access to job opportunities, all of which should be considered as part of the government's approach to housing supply.

# 10. The exposure of different workers to potential trade barriers between the UK and the EU

Peter Levell and Agnes Norris Keiller (IFS)<sup>1</sup>

## Key findings

- **The EU accounts for 44% of UK exports (equal to 13% of GDP) and more than half of UK imports (17% of GDP).** Leaving the Single Market and Customs Union will increase trade barriers and make both importing and exporting more costly.
- **Some industries, such as clothing and transport equipment (including car manufacturing), are likely to be especially badly affected by these changes because they sell a large fraction of their output to EU countries.** The transport equipment sector will also be hard hit because it imports 25% of its inputs from the EU. The same is true for the chemicals and pharmaceuticals sector. Finance is the most exposed services industry, as it currently exports a relatively large share of its output (12%) to the EU.
- **Industries such as agriculture may benefit from trade barriers (though at the expense of consumers)** because consumers will substitute away from more expensive imports towards products made by UK industries. However, the industries that could benefit make up a small share of the overall economy.
- **Men, in particular those with fewer formal qualifications, are more likely to be employed in the most exposed industries than women and more highly educated men.** Workers in process, plant and machinery operative occupations are particularly exposed. These tend to be older men with skills specific to their occupation who, history suggests, may struggle to find equally well-paid work if their current employment were to disappear.
- **On average, exposure to new trade barriers is set to weigh somewhat more heavily on the top half of the earnings distribution.** While earnings inequality may fall, it will come at the cost of making most UK workers poorer. The likely impacts on inequality between regions are both smaller and much more uncertain than the effects on earnings inequality.
- **Low-educated workers are more exposed in some regional labour markets than others.** While 19% of low-educated men work in industries we class as highly exposed in the UK as a whole, the fractions in Northern Ireland and the West Midlands are 25% and 24% respectively. Low-educated workers in these regions might find it particularly hard to adjust to the negative consequences of trade barriers.

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<sup>1</sup> The authors of this chapter are grateful for financial support from the 'UK in a Changing Europe' initiative under ES/R000980/1.

## 10.1 Introduction

While there is no doubt that the UK's vote to leave the European Union ('Brexit') in June 2016 will have far-reaching consequences, there is much we do not know about what these consequences are likely to be. We do not know what form of trade agreement the UK will strike with the EU, what new trade barriers may be imposed on UK-EU trade or what effects these will have on UK industries.

In the face of all this uncertainty, various studies – conducted both inside and outside government – have attempted to predict Brexit's possible impacts on growth in the economy as a whole. These studies tend to find negative economic impacts of Brexit in both the short and long run, regardless of what kind of agreement the UK strikes with the EU.<sup>2</sup>

However, these economy-wide effects are likely to mask considerable differences in Brexit's potential effects on different industries, workers and regions across the UK. Some people or places may be more negatively affected than others. Some may gain. This means Brexit could have important implications for both interpersonal and interregional inequalities within the UK.

In this chapter, we focus on one particular aspect of Brexit – changes in trade barriers with the EU – and examine the consequences these might have for different industries, workers and regions. Throughout, our aim is to shed light on *relative* impacts across different groups in the population rather than their overall scale. To conduct our analysis, we calculate measures of the impact of new barriers to trade on demand for goods and services produced in the UK, and how these are likely to affect different industries and, by extension, the workers that they employ.

We find that, while there is a great deal of uncertainty about the size of trade barriers with the EU after Brexit, there is perhaps more certainty about which industries and worker types are particularly likely to be affected by such barriers. Under every trade scenario we consider, our results suggest that workers in the most exposed industries are disproportionately male and have lower levels of formal education. Because exposure is greatest amongst higher-earning workers within different education groups, and because men tend to earn more than women, workers in the top half of the earnings distribution are also more likely to work in highly exposed industries than those in the bottom half. However, this is not a case of closing the gap by helping the worse-off. Our estimates suggest that all earnings groups are expected, on average, to be negatively affected. So while the new trade barriers might help to reduce earnings inequalities within the UK, this is only because their impact on lower-earning workers is expected to be less bad than their impact for higher-earning workers.

We also consider the possible impacts of Brexit on inequalities between regions. Here there is more uncertainty. The differences in exposure across the regions and nations of the UK are smaller than the differences between groups of workers. Moreover, levels of exposure in different areas have no clear relation with average earnings. In addition, our

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<sup>2</sup> See, for example, S. Dhingra, G. Ottaviano, T. Sampson and J. van Reenen, 'The consequences of Brexit for UK trade and living standards', Centre for Economic Performance (CEP), Brexit Analysis 2, 2016, [http://eprints.lse.ac.uk/66144/1/\\_lse.ac.uk\\_storage\\_LIBRARY\\_Secondary\\_libfile\\_shared\\_repository\\_Content\\_LE%20BrexitVote%20blog\\_brexit02.pdf](http://eprints.lse.ac.uk/66144/1/_lse.ac.uk_storage_LIBRARY_Secondary_libfile_shared_repository_Content_LE%20BrexitVote%20blog_brexit02.pdf).

estimated regional impacts are more sensitive to assumptions about the size of non-tariff barriers and how responsive patterns of demand in the UK and the EU are to new trade barriers. In particular, the estimated impact on London depends on assumptions about the size of potential non-tariff barriers faced by the finance industry.

All this means that the impact of new trade barriers on regional inequality is far less clear than the impact on pay inequality. This may help to explain why previous studies of Brexit's regional impacts have come to different conclusions.<sup>3</sup> However, we also find much clearer evidence of important regional differences in the proportion of low-educated workers who are employed in potentially highly exposed industries. Such industries employ 25% of low-educated men in Northern Ireland (which, if anything, is an underestimate) and 24% in the West Midlands, compared with 19% in the UK as a whole. This means that workers in exposed industries in these regions face the additional problem that there are fewer local job opportunities for workers like them in less affected industries. Policymakers may wish to pay closer attention to the effects of new trade barriers on workers in these regions, and if necessary design appropriate responses.

Brexit is all-encompassing, and will affect the economy in a number of ways besides the effects of changing trade barriers. It not only represents a fundamental shake-up of the UK's relationship with its largest trading partner but also implies a break with the rules governing the EU's Single Market. This may lead to changes to labour laws, product regulations and even some tax rates. Moreover, the government has indicated that it seeks to end freedom of movement for EU workers and to introduce new immigration controls. All of these factors will affect UK industries, regions and workers in different dimensions and to differing degrees.

The sheer complexity of Brexit means that we cannot hope to cover all of its possible ramifications in this chapter. But any future trade barriers will be an important driver of Brexit's overall effects. Focusing on the effects of trade barriers will allow us to examine an important set of economic impacts in more detail and makes it easier to see what is driving our results. It also allows us to assess how much our findings change when we make different assumptions about potential new trade barriers and their effects on patterns of demand for the output of different industries.

The remainder of this chapter is structured as follows. Section 10.2 describes current patterns of trade between the UK and the EU and their importance for different industries. Section 10.3 shows what these patterns mean for the dependence of different regions and workers on exports to the EU. Section 10.4 describes what the potential new trade barriers under different possible Brexit scenarios might be and how these could affect the exports and imports of different industries. Section 10.5 presents estimates of the effects of new trade barriers on the value added of different industries. Sections 10.6 and 10.7 discuss the implications of these changes in industry value added for different workers and regions respectively. Section 10.8 concludes. In order to keep the discussion concise, we

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<sup>3</sup> Consider, for example, the differences between Dhingra, Machin and Overman (2017) and the government's own 'Whitehall analysis' of trade's regional impacts. We discuss these studies in relation to our own results further below. (S. Dhingra, S. Machin and H. Overman, 'Local economic effects of Brexit', *National Institute Economic Review*, 2017, 242, R24–36; House of Commons Exiting the European Union Committee, 'EU exit analysis cross Whitehall briefing', 2018, <https://www.parliament.uk/documents/commons-committees/Exiting-the-European-Union/17-19/Cross-Whitehall-briefing/EU-Exit-Analysis-Cross-Whitehall-Briefing.pdf>).

have placed more technical aspects of our approach in an online appendix, as well as some additional results and sensitivity checks in supplementary material online, for the interested reader.<sup>4</sup>

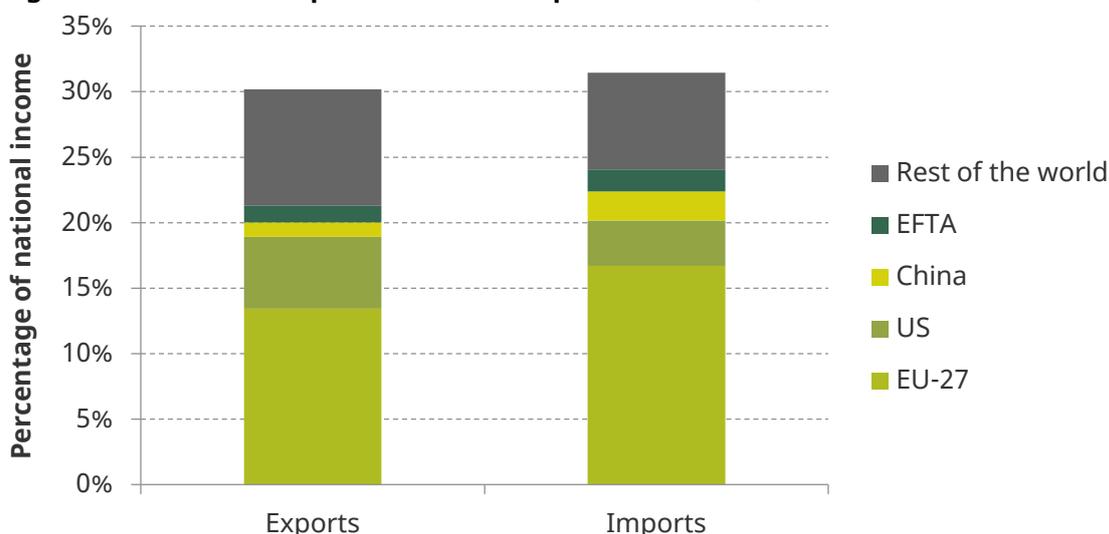
## 10.2 Trade with the EU: the status quo

The EU is the UK’s largest trading partner. It is both the most important destination for UK exports and its most important source of imports. The importance of trade with the EU is shown in Figure 10.1, which plots the value of UK imports and exports that were bought from and sold to the EU, the European Free Trade Association (EFTA) countries (Iceland, Liechtenstein, Norway and Switzerland), the US, China and the rest of the world as a percentage of the UK’s GDP in 2017. Nearly half – 44% – of all UK exports were sold to other EU member states. These had a value of £274 billion, equivalent to 13% of UK national income in that year. This is more than double the value of UK exports that were sold to the US, whose value accounted for just 5% of national income. The relative importance of the EU as a source of imports to the UK is even greater. The UK’s imports from the EU amounted to £341 billion (equivalent to 17% of UK national income) in 2017, compared with just 3% from the US, which was again the second-most important area.

The sheer size of the trade flows passing between the UK and the EU means that any new trade barriers will have a big impact on UK industries and, in turn, on the workers they employ. In particular, we would expect the output of UK industries to be affected in three main ways:

- Through **impacts on UK firms’ exports to the EU**: trade barriers would raise the cost of UK goods and services in EU markets. This would be likely to reduce demand for UK output in the EU.

**Figure 10.1. Value of exports from and imports to the UK, 2017**

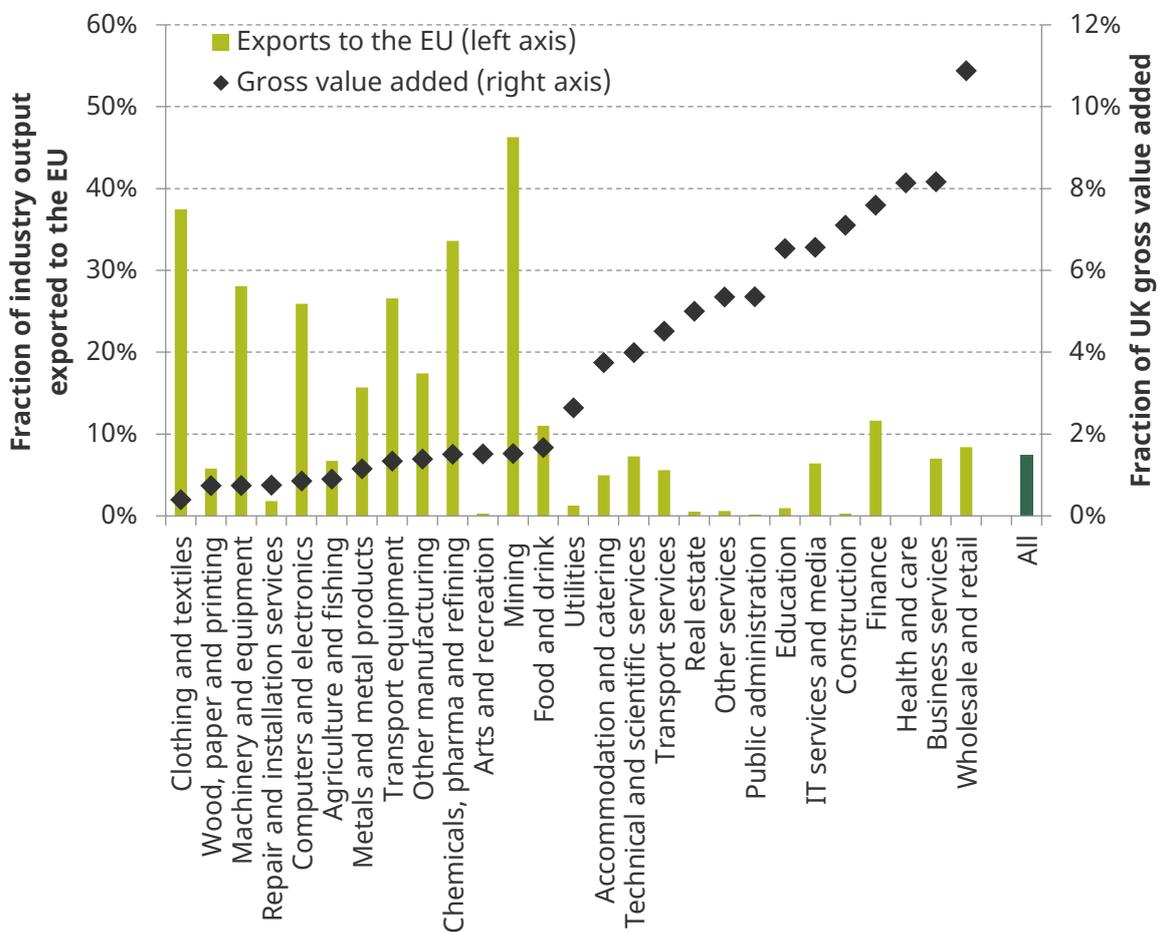


Source: Authors’ calculations using ONS Pink Book 2018 and ONS Blue Book 2018.

<sup>4</sup> <https://www.ifs.org.uk/uploads/publications/budgets/gb2018/GB10%20-%20Brexit%20and%20Trade%20-%20online%20technical%20appendix.pdf> and <https://www.ifs.org.uk/uploads/publications/budgets/gb2018/GB10%20-%20Brexit%20and%20Trade%20-%20online%20supplementary%20material.pdf>

- By **raising UK firms' costs**: UK firms purchase production inputs from the EU (for example, components for manufacturing or business services). If any new barriers reduce UK firms' ability to source inputs from the EU, they would most likely raise production costs in the UK.
- By **reducing competition in the UK**: EU firms compete with UK firms. Increased trade barriers could dampen competition and allow UK firms to increase their share of the domestic market. Although this may be good for individual firms and some workers, reduced competition also has costs for consumers in terms of higher prices and reduced variety. By creating incentives for firms to innovate, competition can also be an important driver of productivity growth. New trade barriers might therefore also reduce UK productivity.<sup>5</sup>

**Figure 10.2. Exports to the EU and gross value added by industry, 2014**



Note: Industries are ranked according to their contributions to the UK's gross value added.

Source: Authors' calculations using ONS analytical input-output tables 2014.

<sup>5</sup> There are a few other ways that new trade barriers could affect demand for the output of UK industries. For instance, changing incomes in the UK could shift patterns of demand. Trade barriers could also have longer-run implications for UK industries' incentives to innovate. In what follows, we do not consider the effects of these channels. Instead, we focus purely on shifting patterns of demand for UK exports and EU imports as a result of changes in relative prices.

As we show in the following set of figures, these channels vary in their importance across different industries. Starting with the importance of exports to the EU, Figure 10.2 shows the proportion of different industries' output that is currently exported to the EU. Industries have been sorted according to their contribution to the UK's total economic output (as measured by the fraction of UK gross value added that they account for).<sup>6</sup>

Figure 10.2 shows that the industries that export the most to the EU relative to their total output are mining (46%), clothing and textiles (37%), chemicals, pharmaceuticals and refining (34%) and machinery and equipment (28%). Service industries tend to export relatively less of their output to the EU. However, because these industries also tend to make up a larger share of the UK economy's total value added, they account for a disproportionate share of the UK's total exports. In 2017, £277 billion of the UK's total exports, or 45%, came from the service sector.<sup>7</sup>

In Figure 10.3, we turn to examining the importance of imports from the EU for different UK industries by showing the share of each industry's inputs that are purchased from the EU. These inputs can be goods or services. For example, they could include German engine parts used by the UK car industry, or back-office functions that have been outsourced by UK banks to firms in Poland.

Figure 10.3 shows that intermediate inputs from the EU are in general more important for manufacturing firms. They are most important for the wood, paper and printing industry, which obtains 28% of its inputs from the EU. This is followed by chemicals, pharmaceuticals and refining (27%), transport equipment (25%) and other manufacturing (24%).<sup>8</sup> It is noteworthy that some of these industries are also significant exporters to the EU. For instance, the chemicals, pharmaceuticals and refining industry and the transport equipment industry are in the top five industries in terms of their current reliance on the EU both as a destination for their output and as a source of production inputs. If new trade barriers resulting from Brexit impose costs on both imports and exports, firms in these industries would be among the worst affected on both margins: they import a lot of intermediate goods from the EU and they sell a lot of goods back to the EU.

A third factor that will determine how UK industries will be affected by new trade barriers is the degree to which they are able to benefit from reduced import competition. No single statistic summarises how important this is; many factors will play a role. In particular, it will depend on the importance of EU imports in the UK market (i.e. the potential size of the domestic market that domestic firms might be able to capture), the importance of the UK market for each industry (and thus the potential gain from increased domestic demand) and the degree to which domestic consumers switch to UK products in place of EU ones as the cost of imported goods increases.

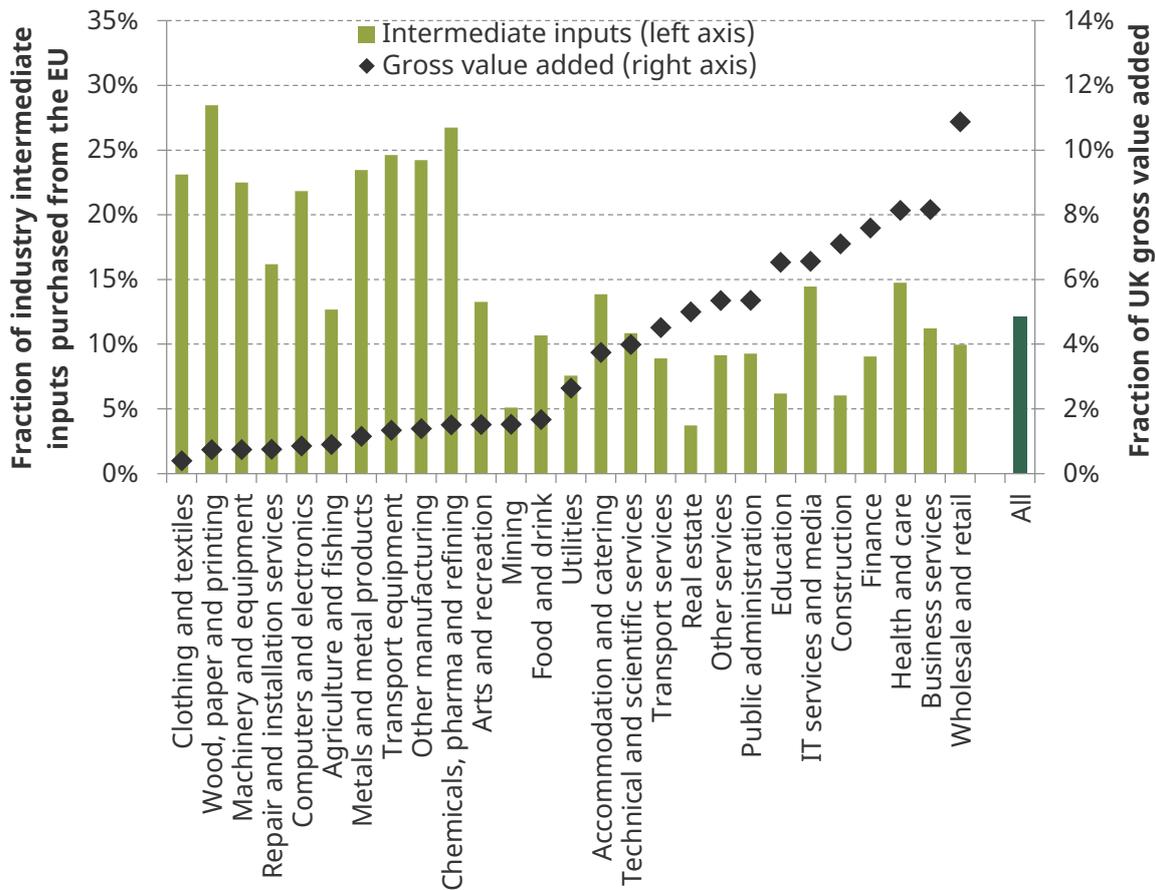
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<sup>6</sup> In our full analysis, we look separately at the impact of trade barriers on 102 separate industries, the workers these industries employ and the regions they are located in. For presentational purposes, we group these industries into 27 larger groups when presenting results at an industry level.

<sup>7</sup> Authors' calculations using ONS Pink Book 2018.

<sup>8</sup> Transport equipment includes the car industry.

**Figure 10.3. Intermediate inputs from the EU and gross value added by industry, 2014**



Note: We estimate the importance of EU inputs for each industry by combining information on imported inputs from the ONS input-output tables with information from the World Input-Output Database (WIOD) that breaks down imports into those used for final and intermediate consumption. See the online appendix for details. Industries are ranked according to their contributions to the UK's gross value added.

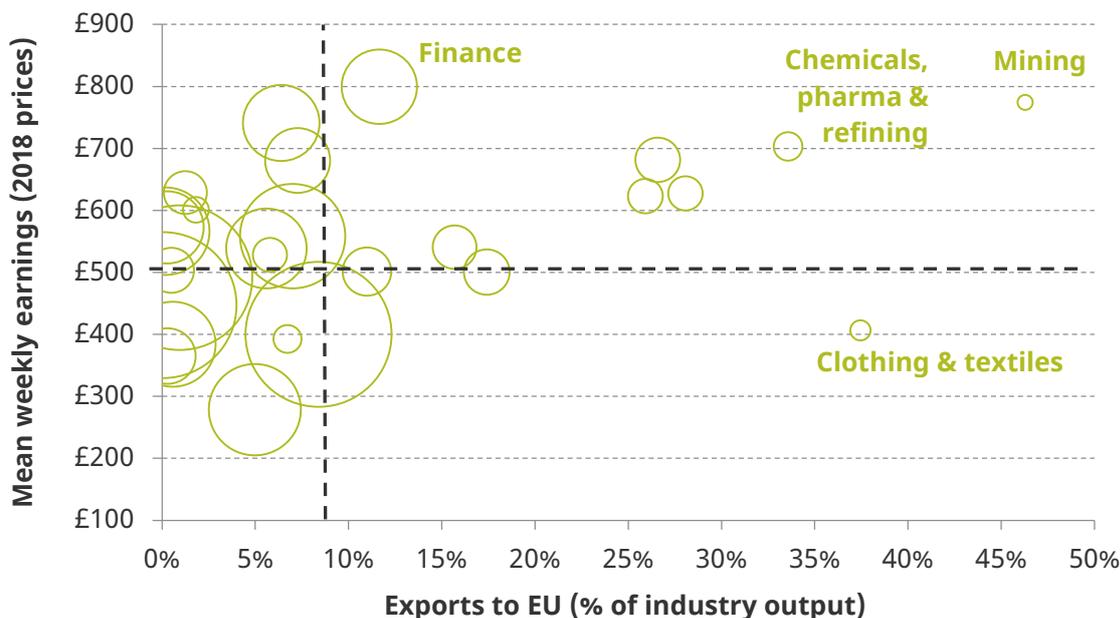
Source: Authors' calculations using ONS analytical input-output tables 2014 and the World Input-Output Database.

### 10.3 Workers' and regions' involvement in trade with the EU

The previous section showed there is large variation in the importance of trade with the EU across industries. Because different industries are located in different parts of the UK and employ different types of workers, such variation at the industry level is likely to mean that trade with the EU also varies in its importance across regional labour markets and different worker types. In this section, we examine this directly to highlight which parts of the UK and which groups of workers may be more exposed to the consequences of new trade barriers.

To help understand how trade barriers are likely to impact earnings inequality, Figure 10.4 shows how the fraction of industry output exported to the EU relates to average earnings and the numbers employed by each industry (represented by the size of the bubbles). This shows that industries where exports to the EU account for a greater fraction of output than average also tend to have higher average pay levels. Finance stands out in particular

**Figure 10.4. Average earnings in each industry versus share of output sold to the EU**



Note: The size of each circle represents industry employment. Dashed lines represent national averages. When calculating mean weekly earnings, we trim the distribution at the 2<sup>nd</sup> and 98<sup>th</sup> percentiles and express monetary values in 2018 prices using the Consumer Prices Index (CPI) taken from the Office for Budget Responsibility's March 2018 Economic and Fiscal Outlook.

Source: Authors' calculations using ONS analytical input-output tables 2014 and the Annual Survey of Hours and Earnings 2017.

as the industry with the highest average earnings and one that exports an above-average share of its output to the EU. One exception to this general pattern is clothing and textiles. This industry exports a lot to the EU, but on average workers in this industry earn less than in many other industries.

The various industries are not equally important around the country. To understand how the mix of industries in each part of the UK influences the exposure of different areas to potential new trade barriers, we weight the share of output that each industry exports to the EU by the number of workers it employs in each region. This analysis does not take into account that, within an industry, firms in some regions (such as Northern Ireland) may be more likely to export to the EU than firms in the same industry that are located elsewhere. As a measure of which regions export more to the EU, it is thus imperfect. However, we discuss these figures as they are useful in explaining differences in regional impacts that we report in Section 10.7.

Industries that are relatively more important employers in the East and West Midlands, London and the North West currently export more to the EU than the industries that are relatively more important in other parts of the UK. The average proportion of output exported to the EU among workers in the East Midlands was 5.3%, in the West Midlands

5.2% and in London 5.0%.<sup>9</sup> These figures compare with an employment-weighted average export share of 4.9% for the UK as a whole.

This variation across regions reflects the fact that manufacturing industries – which Figure 10.2 shows are more dependent on exports to the EU than other industries – account for 12% of employment in the East Midlands, 11% in the West Midlands and 9% in the North West, compared with 7% in the UK as a whole. In London, only 2% of employees are employed in manufacturing. There, the relatively high export share is due to the greater importance of finance in local employment (accounting for 7% of local employment, as opposed to 4% across the UK as a whole) and the lower proportion of workers in low-exporting service sectors such as education, health and care, and public administration. These account for 21% of workers in London compared with 26% of workers in the population as a whole.

Industries that employ relatively more workers in Scotland and Northern Ireland tend to be slightly less dependent on exports to the EU than the industries that are relatively more important in other parts of the UK. However, as we noted above, firms in a given industry in Northern Ireland might well be likely to export a greater share of their output to the EU than firms in that same industry in other parts of the UK.

#### 10.4 Potential changes in trade barriers between the UK and the EU

Having considered a few channels through which trade barriers affect companies' value added in Section 10.2, we now turn to the question of what these trade barriers might be.

The simplest and most transparent form of trade barrier is an import tariff. This is a tax levied on goods imported from other countries. It can either be 'specific' (levied according to the quantity that is imported) or '*ad valorem*' (levied according to the imported good's value).

However, explicit import tariffs are far from the only form of barrier to trade. Regulatory differences between countries can also hamper trade – for example, by requiring companies to register and comply with different authorities in each country. There can also be new barriers to the process of trade itself; for instance, shipments of goods may need to be checked by customs to ensure the correct tariff has been paid and that domestic environmental and safety standards are met. These checks can introduce delays and other costs for importing firms. Collectively, these other costs of importing and exporting goods and services are known as non-tariff barriers. Unlike tariffs, non-tariff barriers have the effect of reducing trade flows without the benefit of raising revenue for the government. We describe these sorts of costs in more detail below.

At present, the UK is a member of both the EU Customs Union and the Single Market. These entities were established with the aim of removing tariffs and reducing non-tariff barriers between EU member states and other participating countries.

<sup>9</sup> Authors' calculations using ONS analytical input-output tables 2014 and the Business Structure Database (local unit file) 2016. These averages differ from the average share in Figure 10.2 as they are employment-weighted averages of different industries' export shares rather than an average weighted by industry output.

The EU Customs Union is a collection of states that have agreed to remove tariffs and customs checks on goods travelling between member states, and to apply a common external tariff and a common 'Union Customs Code' (governing customs rules and procedures) to goods entering the Customs Union from countries outside it. The EU Customs Union currently comprises all the present 28 EU member states plus Monaco.<sup>10</sup>

The Single Market is a collection of rules designed to reduce or eliminate various non-tariff barriers to trade in goods and services. This includes a body of legislation that harmonises product standards for some goods and services. For other products, Single Market rules can sometimes ensure that goods made to standards applied in some member states are also accepted for sale in other member states (a principle known as mutual recognition). The Single Market includes all the current 28 members of the EU, but a few non-members also participate to various degrees. For instance, both Norway and Switzerland are subject to some Single Market rules and enjoy corresponding access to some markets of other members.

At the time of writing, the UK has indicated its intent to leave both the EU Customs Union and the Single Market. This will undoubtedly create new barriers to trade with the EU's existing members, but it is far from clear what form these will take. The UK government has stated that it would like trade with the EU to remain 'as frictionless as possible', with no new tariffs on UK-EU trade and a 'common rule book' for highly regulated sectors to minimise the need for new customs checks for goods passing between the UK and the EU. However, the UK government also wants the power to set its own tariffs and strike its own trade deals with third countries, as well as the freedom to deviate from Single Market rules in some cases. To ensure that this does not lead to customs checks being carried out at a new 'hard border' between Northern Ireland and the Republic of Ireland, the government has proposed conducting customs checks and collecting EU tariffs on the EU's behalf on goods imported to the UK from third countries for onward shipment to the EU. The idea is that, by conducting these checks on the UK's other borders, there would be no need for additional checks of any goods being transported from Northern Ireland to the Republic.<sup>11</sup>

So far, however, the EU has indicated it is not willing to accept an agreement of this kind. In response to the UK's proposals, the EU's chief negotiator, Michel Barnier, has raised concerns over the possibility that firms might fraudulently declare goods to be destined for the UK rather than the EU in order to avoid paying EU tariffs, and over whether the UK ought to be granted the level of access to the Single Market it seeks without being subject to the same oversight and obligations that apply to other members.<sup>12</sup> At the time of writing, it is not clear how these differences are likely to be resolved.

In the absence of clarity on the exact form the UK's post-Brexit trading arrangements with the EU will take, we consider three alternative scenarios based on the EU's current trading arrangements with other countries.

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<sup>10</sup> Turkey is outside the EU Customs Union though it has formed its own customs union with the EU. This is not comprehensive as it does not cover agricultural goods.

<sup>11</sup> HM Government, *The Future Relationship between the United Kingdom and the European Union*, Cm 9593, 2018, <https://www.gov.uk/government/publications/the-future-relationship-between-the-united-kingdom-and-the-european-union>.

<sup>12</sup> [http://europa.eu/rapid/press-release\\_STATEMENT-18-4626\\_en.htm](http://europa.eu/rapid/press-release_STATEMENT-18-4626_en.htm).

One such arrangement would be a free trade agreement (FTA) of the kind the EU has recently signed with Canada, for example (known as the Comprehensive Economic and Trade Agreement, CETA). An agreement of this kind would largely or entirely eliminate tariff barriers. However, it would not eliminate the need for customs checks, and while such agreements may contain provisions that reduce other non-tariff barriers, they are far less comprehensive than arrangements such as the EU Single Market. In what follows, we refer to this as the FTA scenario. In this case, we assume that the agreement entails no tariffs on UK-EU trade, but does lead to increases in trade costs through higher non-tariff barriers than currently apply.

A second scenario is an arrangement of the kind the EU currently has with other members of the European Economic Area (EEA), which comprises Iceland, Liechtenstein and Norway as well as EU countries. This would keep the UK more closely integrated with the EU than an FTA, with the UK accepting some EU rules and regulations, for example. We assume that this entails zero tariffs and reduced non-tariff barriers to EU-UK trade relative to a free trade agreement, but an increase in non-tariff barriers relative to the status quo.<sup>13</sup>

A third arrangement we consider is a case where the UK and the EU do not strike a comprehensive trade deal. In the event that London and Brussels fail to find a mutually acceptable trade deal, the UK and the EU would default to trading under World Trade Organisation (WTO) rules. These rules (described in more detail in Box 10.1) specify that neither the UK nor the EU can offer each other lower import tariffs than they charge on imports from other countries with which they do not have a trade agreement. A 'WTO-rules' Brexit would therefore mean the imposition of new tariffs on EU-UK trade in addition to any new non-tariff barriers that are created by customs checks and regulatory divergence. In addition to these new tariffs, this scenario also involves larger non-tariff barriers being imposed on UK-EU trade than in either the FTA or EEA scenarios.

#### **Box 10.1. What are WTO rules?**

Members of the World Trade Organisation must, broadly speaking, adhere to two key principles. The first is that they are bound by commitments made through various rounds of negotiations to open their markets to other WTO members in certain ways: for example, they may not set tariffs above an agreed level and are not permitted to introduce trade-distorting subsidies. The second commitment is to a principle of non-discrimination. Countries should grant all other WTO members the same access to their markets as they have granted the 'most-favoured nation' (MFN) and should not, for example, levy tariffs on imports from one country and not on those from another.

Both of these principles have important exceptions. For example, countries may introduce protective measures ('safeguards') in response to unexpected 'surges' of imports from a particular source. Both the US and the EU have employed such measures to restrict imports of Chinese textiles and steel. Countries can also levy duties on products deemed to have been sold below cost onto their markets, through so-called 'anti-dumping' duties, and, in the event that they are subject to trade barriers that are not permitted under WTO rules, they may be authorised by a WTO panel to apply

<sup>13</sup> In practice, the EU and Norway, for example, do charge tariffs and impose quotas on imports of agri-food products from each other. We assume tariff- and quota-free trade, as is the UK government's aspiration.

'countervailing duties' against the offending party until the dispute is resolved. These measures must be commensurate with the adverse impacts of the subsidy.<sup>a</sup>

Countries can also selectively open their borders to particular trading partners provided they do so through formal trading agreements (which we will refer to as free trade agreements, FTAs). FTAs include, for example, the North American Free Trade Agreement and a number of bilateral free trade agreements signed between WTO members such as CETA. So-called 'preferential' trading agreements are FTAs whereby advanced economies make unilateral trade concessions to developing countries. For instance, the EU grants tariff- and quota-free access to developing countries through the 'Everything but Arms' scheme and the Generalised Scheme of Preferences. WTO members must notify the WTO of all trade agreements and their provisions while they are being negotiated, at which point they are monitored and assessed to ensure compliance with WTO rules.<sup>b</sup> Free trade agreements are common. Since Mongolia and Japan signed a regional trade agreement in June 2016, it has been the case that every WTO member has an FTA of some kind in force.<sup>c</sup>

Currently, as a member of the EU Customs Union without the ability to negotiate its own trade deals, the UK is represented at the WTO by the EU. Following Brexit, the UK would become a WTO member in its own right.<sup>d</sup> This would mean it would have the same rights and obligations as other WTO members, including compliance with WTO limits on tariffs and with the MFN rules.

While the process of becoming a WTO member is one of the less complex aspects of Brexit, there are a few important implications of an independent WTO membership that are worth noting. WTO rules would require customs checks on goods passing between the UK and the EU in the absence of a formal UK-EU trade deal. To do otherwise would fall foul of WTO rules regarding non-discrimination, since customs checks are currently imposed on goods entering the UK from non-EU WTO members. In addition, the UK could, for example, at some point be subject to EU anti-dumping duties and, even if not, the *risk* of such duties being imposed can act as a deterrent to investment.<sup>e</sup>

<sup>a</sup> See Article 7 of the WTO Agreement on Subsidies and Countervailing Duties, [https://www.wto.org/english/docs\\_e/legal\\_e/24-scm.pdf](https://www.wto.org/english/docs_e/legal_e/24-scm.pdf).

<sup>b</sup> Such rules are described under Article XXIV of the GATT treaty. They include, for example, that barriers to trade among contracting parties of regional trade agreements (RTAs) with respect to the outside world be no higher after the formation of the RTA than they were before.

<sup>c</sup> [https://www.wto.org/english/tratop\\_e/region\\_e/region\\_e.htm#rules\\_ita](https://www.wto.org/english/tratop_e/region_e/region_e.htm#rules_ita).

<sup>d</sup> L. Bartels, 'The UK's status in the WTO after Brexit', September 2016.

<sup>e</sup> M. Crowley, H. Song and N. Meng, 'Tariff scares: trade policy uncertainty and foreign market entry by Chinese firms', Cambridge Working Paper in Economics 1676, 2016, <http://www.econ.cam.ac.uk/research-files/repec/cam/pdf/cwpe1676.pdf>.

In this chapter, we present results for the third of these scenarios, a WTO-rules Brexit. We have also done similar analysis for the FTA and EEA arrangements; these estimates can be found in the online supplementary material. It turns out that the relative impacts across groups (i.e. which groups do relatively well and which relatively badly) are very similar across these alternative trading arrangements.

None of these scenarios takes into account possible changes in the UK's trading arrangements with non-EU countries. These could be affected in two ways. First, the UK may face increased trade barriers in foreign markets that the EU has negotiated trade agreements with. These could include, for example, the EU's trade agreements with Canada and South Korea as well as its agreements with the non-EU EEA countries and Switzerland. The nature of the UK's participation in these agreements going forward is somewhat uncertain, and so we do not attempt to account for the possibility of new trade barriers that might apply to UK industries when exporting to or importing from these countries.

Second, the UK may strike new trade agreements with non-EU countries. Indeed, this is one of the reasons the UK government currently seeks to leave the EU Customs Union (so as to be able to operate an independent trade policy). These new agreements may in future reduce trade barriers between the UK and other non-EU countries. However, at present, it is not clear with whom these agreements are likely to be made and what areas of trade they will cover. As a result, we do not take the possible effects of such agreements into account in the following analysis either.

In addition, it is also worth noting that we focus on the long-run trade barriers associated with each outcome rather than short-term costs associated with moving to a new set of trading arrangements. This can be thought of as an assumption of any transition being fairly orderly. This means we are not, for example, considering the possible costs of a chaotic 'no-deal' scenario in which the UK abruptly leaves the EU without any kind of transition arrangements; customs barriers are hastily erected on both the EU and UK sides; and UK exporters become subject to the same regulatory compliance checks that the EU currently applies to third countries, with very limited time to prepare. The consequences of this scenario have been spelt out in the UK in a Changing Europe's 'Cost of No Deal' publication.<sup>14</sup> It is a situation best avoided.

### Quantifying trade barriers

In this subsection, we set out how we quantify the trade barriers that we assume apply in each of the post-Brexit scenarios we consider.

Tariffs on UK–EU trade are only imposed under our 'WTO rules' scenario. In this case, we assume that both the UK and the EU apply the EU's current most-favoured nation (MFN) tariffs to each other's imports. In principle, both the UK and the EU could adjust these tariffs from their current rates after Brexit. For instance, the UK could lower MFN tariffs below the rates the EU currently levies once it left the Customs Union.<sup>15</sup> However,

<sup>14</sup> See UK in a Changing Europe, 'Cost of no deal', 2017, <http://ukandeu.ac.uk/research-papers/cost-of-no-deal> and 'Cost of no deal revisited', 2018, <http://ukandeu.ac.uk/research-papers/cost-of-no-deal-revisited>.

<sup>15</sup> The EU's current MFN tariffs are already close to the maximum allowable rates under its commitments to the WTO. This means that both the UK and the EU would only have limited scope to raise tariffs above their current levels.

reductions in the UK's MFN tariffs would have to apply to all the UK's imports in order to be compliant with WTO rules. While there are good reasons why economists often call for tariff reductions, unilateral liberalisation of this kind would prevent the UK from using the offer of tariff reductions as bargaining chips in future trade negotiations. It could also be politically difficult, as it would expose hitherto protected industries to greater import competition. In any case, while tariff reductions might well be sensible in the longer term, there would be a case for lowering them gradually. We therefore take as our baseline case a situation where the UK replicates the EU's existing MFN tariffs post-Brexit. For similar reasons, we assume that the EU does not adjust its tariffs, meaning that the EU applies the MFN tariffs it applies to countries with which it has no trade agreements to imports from the UK.<sup>16</sup>

The non-tariff barriers that would apply in different scenarios are, by their nature, much harder to quantify than tariff barriers. However, the potential importance of non-tariff barriers both overall and in particular sectors means that they should not be neglected. We therefore draw on available estimates of the size of non-tariff barriers for different sectors.

In particular, we take our estimates of non-tariff barriers from the government's 'EU exit analysis cross Whitehall briefing'.<sup>17</sup> This document sets out estimates of possible long-run non-tariff barriers under the three scenarios we described above (expressed in terms of the *ad valorem* tariff rates they would be equivalent to – for example, 20% of the value of a good or service). These estimates are subject to various uncertainties, not least the fact that there is essentially no historical precedent of countries leaving major trading blocs from which reliable estimates of the effects of non-tariff barriers could be obtained. An additional source of uncertainty is the fact that the exact nature of non-tariff barriers will depend on both future political choices by the UK and the outcome of negotiations between the UK and the EU. It is therefore far from clear at present how large they are likely to be. These estimates nonetheless give an idea of the extent of possible non-tariff barriers across different sectors, and associated with different Brexit scenarios, that we can use to get an idea of their distributional impact. These figures were also estimated using standard techniques and are broadly comparable to those estimated in other studies.<sup>18</sup>

Figure 10.5 sets out the tariff and non-tariff barriers we assume would apply to both the exports and imports of goods and services for different industries under the WTO-rules Brexit described above.<sup>19</sup> Under this scenario, new trade barriers are expected to be greatest for food and drink products (where increased trade costs amount to a substantial 38% of the value of each product on average). These are followed by the barriers in agriculture and fisheries, for which new trade costs reach 25% of the value of exported

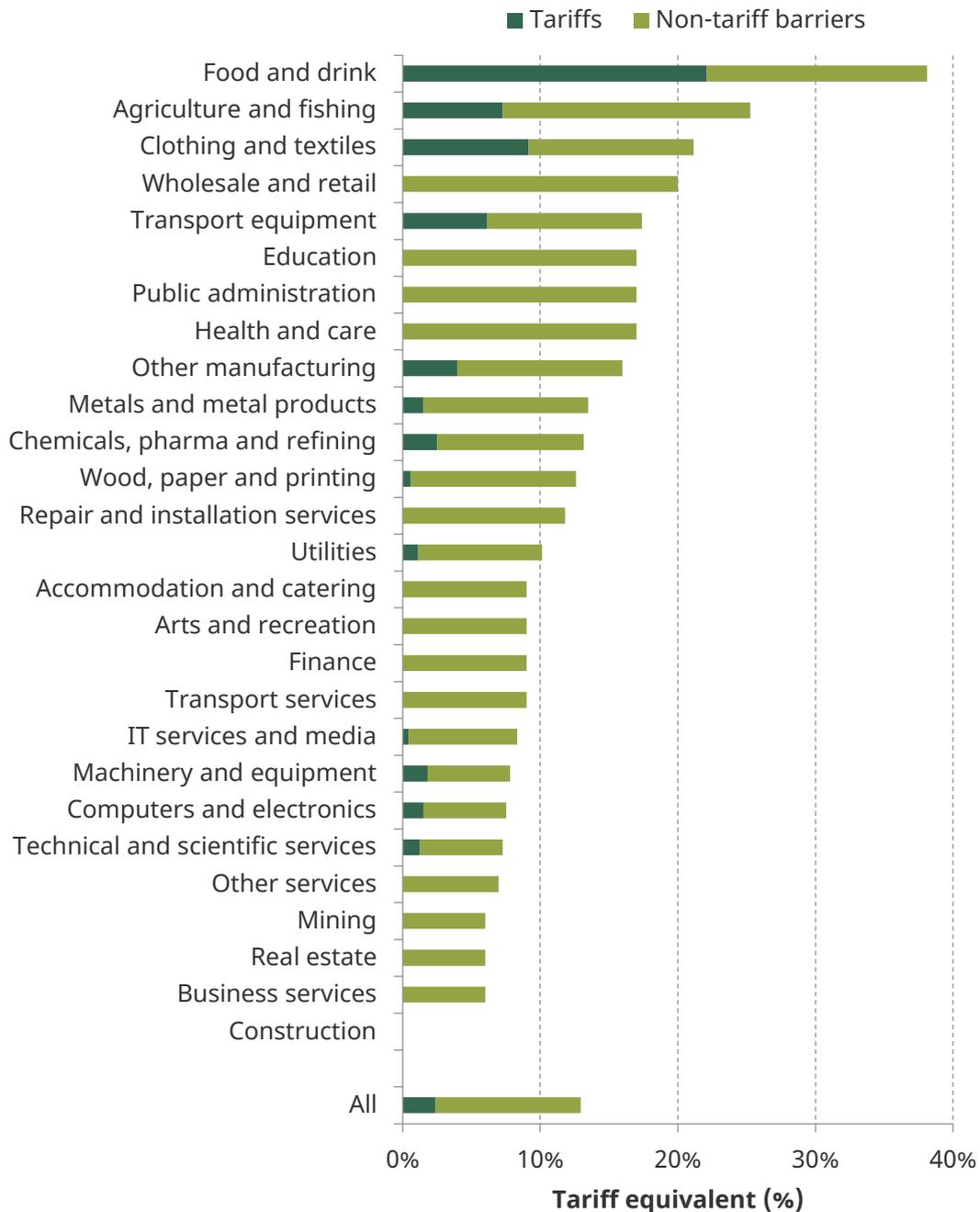
<sup>16</sup> The EU's current MFN tariffs are available online from the World Integrated Trade Solution tariffs database, <https://wits.worldbank.org/>.

<sup>17</sup> House of Commons Exiting the European Union Committee, 'EU exit analysis cross Whitehall briefing', 2018, <https://www.parliament.uk/documents/commons-committees/Exiting-the-European-Union/17-19/Cross-Whitehall-briefing/EU-Exit-Analysis-Cross-Whitehall-Briefing.pdf>.

<sup>18</sup> For a comparison of non-tariff barriers from different studies, see figure 7 in International Monetary Fund, *Euro Area Policies: Selected Issues*, IMF Country Report 18/224, 2018, <https://www.imf.org/en/Publications/CR/Issues/2018/07/18/Euro-Area-Policies-Selected-Issues-46097>.

<sup>19</sup> Table A.1 in the online supplementary material shows the non-tariff barriers used in the FTA and EEA scenarios.

**Figure 10.5. Tariffs and non-tariff barriers between the EU and the UK under the WTO rules scenario, by industry**



Note: MFN tariffs represent the average tariff among goods produced by each industry weighted by exports to the EU. No non-tariff barriers are associated with exports of the construction industry (a service industry associated with negligible exports; see Figure 10.2).

Source: World Integrated Trade Solution tariffs database, <https://wits.worldbank.org/>; House of Commons Exiting the European Union Committee, 'EU exit analysis cross Whitehall briefing', 2018, <https://www.parliament.uk/documents/commons-committees/Exiting-the-European-Union/17-19/Cross-Whitehall-briefing/EU-Exit-Analysis-Cross-Whitehall-Briefing.pdf>.

goods, and clothing and textiles, for which new trade costs amount to 21% of the value of each good.

For most industries, higher trade costs are largely driven by the impacts of new non-tariff barriers. Indeed, non-tariff barriers are the most important source of new trade costs for all industries except food and drink. They range from 20% of the value of services for retail and wholesale trade to around 12% for most manufacturing industries and just below 10% for service industries such as finance and business services. Overall, the average export-weighted non-tariff barrier is estimated at 10.5% while the export-weighted average tariff barrier is just 2.4%.

Since non-tariff barriers are going to be important in driving many of our results, it is worth discussing a few of the reasons why these numbers tend to be so large.

One aspect of these costs is the delays and uncertainty associated with customs checks. These can cause obvious problems for trade in agricultural and food products, whose shelf life can sometimes be a matter of days. To take one example, at present, animal products such as eggs and meat that are imported from outside the EU confirm their compliance with EU safety standards with a health certificate. These documents must be verified by customs authorities. In addition, shipments may be physically inspected by a veterinarian at a designated border inspection post.<sup>20</sup> All these checks have costs in terms of both time and money.

Customs delays and procedures are also likely to cause problems for firms that make use of so-called just-in-time production methods. Industries such as car and aircraft manufacturing now often rely on quick deliveries from suppliers that are made with limited notice so as to minimise inventory and storage costs. The flexible supply chains that underpin these production methods may be frustrated by customs delays, introducing trade costs that are similar in their effects to new tariffs. These sorts of costs would potentially have important consequences both for UK industries that make heavy use of EU suppliers and for UK suppliers to manufacturers in the EU.

Not all non-tariff barriers are incurred at the point at which a good crosses a border. 'Behind-the-border' barriers stemming from differences in regulations across countries may also prevent firms from importing or exporting certain products. For instance, if environmental or safety requirements of trading partners differ, or the approval of foreign regulators is not recognised in other countries, then it may be costly for firms to produce goods that are accepted for sale in both domestic and foreign markets. This may discourage firms from exporting or importing certain goods and services at all. These sorts of costs can be important for many service providers. One salient example of a non-tariff barrier that may affect UK service exporters is the potential loss of 'passporting' rights for financial firms in the event of the UK leaving the EU Single Market. Without these rights, UK financial firms that want to sell services in the EU will be required to seek separate authorisation from local banking authorities. They may also be subject to additional regulations applied to third-country financial service providers.

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<sup>20</sup> See, for example, <https://www.food.gov.uk/business-guidance/importing-products-of-animal-origin>.

Although the precise level of non-tariff barriers is unknown, existing research confirms that they are generally much more costly than tariffs.<sup>21</sup> However, we might be less certain about their relative impacts across sectors, which could be important for determining their distributional impact. For example, estimates of the non-tariff barriers on the finance industry and transport equipment sector in the ‘Whitehall analysis’ are much lower than those predicted by the International Monetary Fund.<sup>22</sup> For this reason, we also look at how our results change when we apply the same export-weighted average non-tariff barrier to all industries (so that it is possible to see the extent to which assumptions over differences in non-tariff barriers between industries drive our results).

## 10.5 Impacts of new trade barriers on different sectors

In Section 10.2, we showed that the importance of trade with the EU varied across different industries. In Section 10.4, we also showed that Brexit might result in larger trade barriers for some industries than others. In this section, we draw these facts together to consider which industries are relatively more and less likely to gain or lose from increased trade barriers under the WTO rules scenario described above (results for the other scenarios can be found in the online supplementary material).

Assessing the economic impact of trade barriers is a complex task as trade barriers can affect industries in a number of ways. Despite this complexity, the logic that underpins our analysis is straightforward: increases in trade barriers after Brexit will make EU products more expensive in the UK and make UK products more expensive in the EU. This will affect the demand and the price paid for different industries’ output in the UK, EU and non-EU export destinations.

To calculate measures of the relative exposure of different industries to new trade barriers, we work out the answer to the following hypothetical question: ‘By how much would the industry have to adjust its output prices in response to changes in demand patterns in order to keep its current output levels constant?’. For industries that have experienced a reduction in demand, this would require them to reduce their prices until demand increased to justify current output levels. For industries that have experienced an increase in demand (for example, because UK consumers buy their output instead of more expensive EU imports), this would lead to them increasing their prices.

We then work out what change this implies for each industry’s *value added* given both changes in their output prices and changes in their input costs. Value added is a measure of the value of an industry’s output minus the costs of inputs purchased from other industries. It thus takes into account the impacts of changes in firms’ output prices and in their input costs.

Of course, we do not expect firms to keep their output levels constant in response to the changes in trade barriers. Output may fall in negatively affected industries and rise in

<sup>21</sup> For example, non-tariff barriers between the EU and the US are estimated to be equivalent to a 10% tariff (figure 3.1 in ECORYS, *Non-Tariff Measures in EU-US Trade and Investment: An Economic Analysis*, Final Report, commissioned by European Commission, Directorate-General for Trade, reference OJ 2007/S180-219493, 2009, [http://trade.ec.europa.eu/doclib/docs/2009/december/tradoc\\_145613.pdf](http://trade.ec.europa.eu/doclib/docs/2009/december/tradoc_145613.pdf)).

<sup>22</sup> See figure 7 in International Monetary Fund, *Euro Area Policies: Selected Issues*, IMF Country Report 18/224, 2018, <https://www.imf.org/en/Publications/CR/Issues/2018/07/18/Euro-Area-Policies-Selected-Issues-46097>.

positively affected ones. However, this approach allows us to get an idea of the *relative* impacts across different industries and the mechanisms that are likely to drive them.

The figures we obtain for different industries' value added changes should therefore *not* be treated as estimates or exact predictions of the value added change they would experience after Brexit. Rather, we use them to assess which industries are likely to be most and least affected by new trade barriers. In addition, for a variety of additional reasons, these measures do not tell us exactly how much the wages of workers currently employed in each industry will change. As we describe in more detail in Section 10.6, this will depend on a number of other factors, including whether workers in adversely affected industries are able to find alternative employment in other industries as well as Brexit's overall effect on productivity growth. However, our measures can be used to indicate what sorts of workers are currently employed in the industries that will face the greatest pressure to cut their costs or output and thus, other things equal, would be expected to experience the greatest wage pressures.<sup>23</sup> This is what we will do in the following sections.

To quantify the size of demand responses by firms in the EU, the UK and non-EU countries in response to a given set of trade barriers, we need to make assumptions about the responsiveness of demand to changes in prices. For example, if EU demand for UK exports is highly responsive to changes in prices, then even a small increase in tariffs or non-tariff barriers would cause a large reduction in demand for UK exports. The results we present below are calculated using estimates of the price sensitivity of demand drawn from research on the impact of tariff reductions on trade flows for different industries.<sup>24</sup> Details are set out in the online appendix.

Figure 10.6 shows the predicted change in value added due to trade barriers under the WTO rules scenario for our 27 industry groups.<sup>25</sup> Overall, our estimates suggest that UK gross value added would fall by around 2.6%. The most adversely affected industries are transport equipment, clothing and textiles, and chemicals, pharmaceuticals and refining, which are estimated to experience reductions in value added of 20%, 18% and 16% respectively. But not all industries are expected to be negatively affected: the figure also shows that value added is estimated to *increase* in the agriculture and fishing industry by 11% and in the wood, paper and printing industry by 3%. However, these increases are far smaller than the reductions across other industries. These industries are also relatively small, accounting for 0.9% and 0.7% of UK gross value added respectively.

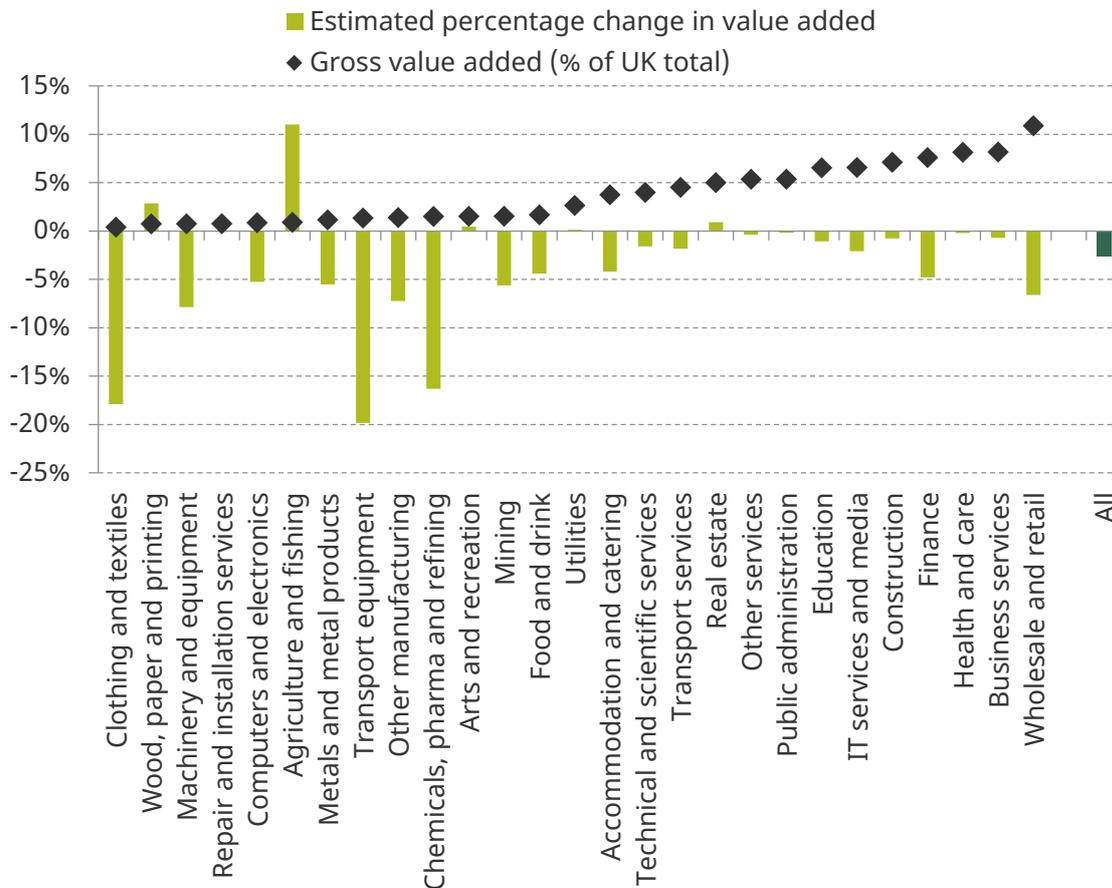
It is also worth re-emphasising that the estimates account solely for the impact of changes in trade policy following Brexit. They do not consider, for example, any changes in state funding, regulations or the availability of immigrant workers that may also affect different industries in various ways.

<sup>23</sup> An alternative measure of industry exposure would be to calculate how much each industry's output would change to keep the price of their output constant. This alternative approach, however, does not capture how UK firms might reduce their output price in order to increase demand for their products within the UK or in non-EU export destinations.

<sup>24</sup> L. Caliendo and F. Parro, 'Estimates of the trade and welfare effects of NAFTA', *Review of Economic Studies*, 2015, 82, 1–44.

<sup>25</sup> We present results on value added changes for all 102 industries we consider in Table A.2 in the online supplementary material.

**Figure 10.6. Estimated percentage change in value added due to WTO rules trade barriers and gross value added, by industry**



Note: Industries are ranked according to their contributions to the UK's gross value added.

Source: Authors' calculations using ONS analytical input-output tables 2014.

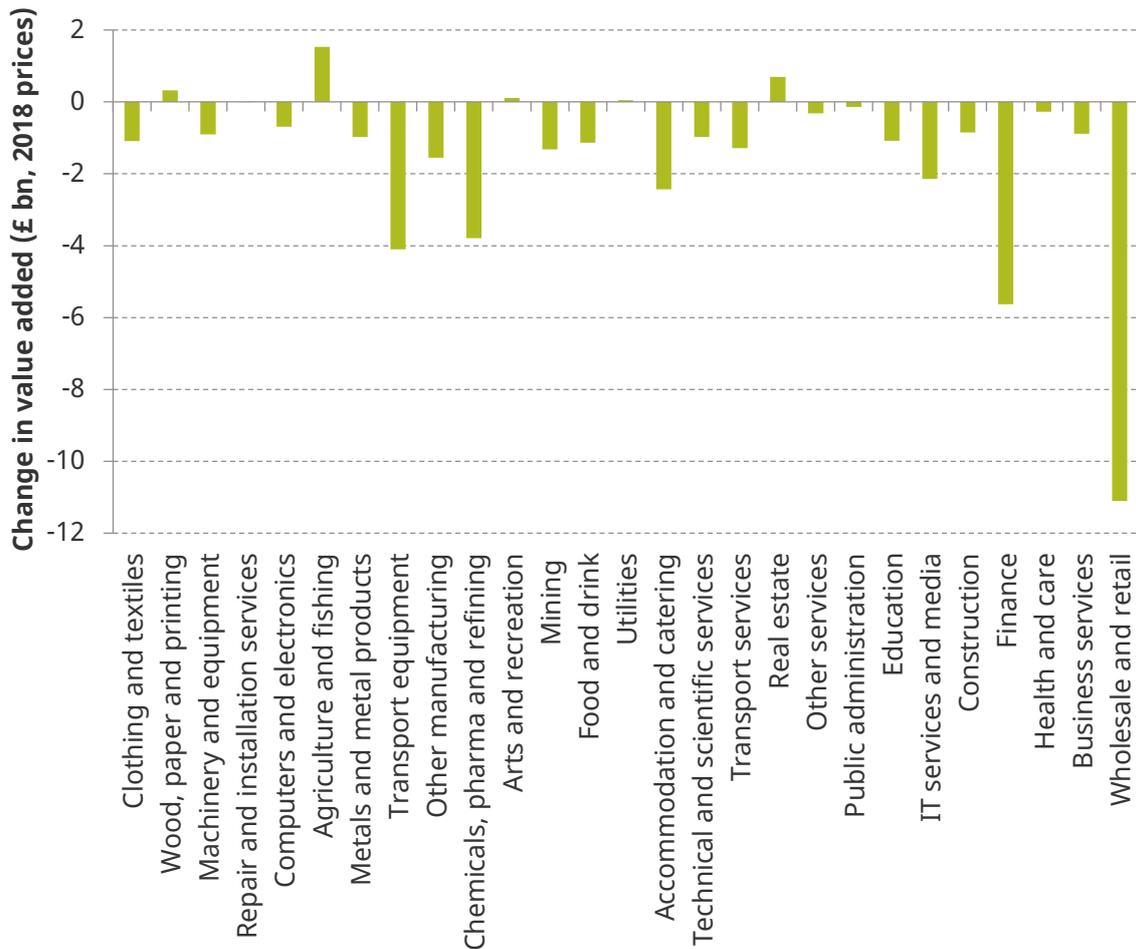
While it is often the case that the industries that tend to see the largest negative impacts are big exporters to the EU, this is not always true. For example, the mining industry exports the largest share of its output to the EU but only experiences a modest decline in its value added. Nor is it always true that the industries facing the largest increases in trade barriers face the worst declines in value added. The agriculture and fishing sector is predicted to see an increase in value added despite its exports facing particularly high new trade barriers. To explain what drives the impacts on individual industries, it is worth focusing on a few selected industries.

- The large negative impact on the **clothing and textiles** industry is primarily driven by its high dependence on the EU as an export market (as shown in Figure 10.2) and the high trade barriers that apply to its exports under our WTO rules scenario (as shown in Figure 10.5).
- The particularly negative impact on manufacturers of **transport equipment** is primarily due to declines in the UK motor vehicle sector. This sector sources 32% of its intermediate inputs from, and exports 32% of its output to, the EU. This dependence on the EU means the UK motor vehicle sector is estimated to experience a 12% fall in EU

demand and a 3% increase in input costs (much larger than the average increase across all industries of 1%). On top of this, the value added by the transport equipment industry is already relatively low. This means that a given decline in price will lead to a large proportional change in value added.

- Manufacturers in the **chemicals, pharmaceuticals and refining** industry are also highly dependent on the EU as a source of inputs and a market for exported output. Like motor vehicles, this industry also has a relatively low value added share. It is estimated to experience a 16% reduction in value added as a result of new trade barriers.
- The positive impact on **agriculture and fishing** occurs because UK consumers and firms switch to consuming domestic goods rather than EU ones as the cost of EU imports rises. The positive effect of this substitution away from EU goods and towards UK firms is particularly large for this industry for three reasons. First, domestic sales are important for this industry. Small proportional changes in demand from UK consumers therefore have a bigger impact on total demand for this industry's output than they would for other industries. Second, EU firms currently have a significant market share in the UK that domestic firms could capture once trade barriers increase. Third, according to the estimates we use, consumers regard agricultural products from different countries as reasonably close substitutes for one another. These effects are magnified by the fact that the increase in the costs of EU imported goods is large (as shown in Figure 10.5). These effects are offset by a reduction in exports to the EU, though the share of this industry's output that is exported to the EU is relatively small. Similar mechanisms explain why the **wood, paper and printing** industry is estimated to experience an increase in value added, although in this case the positive impact of increased domestic demand is offset to a greater extent by an increase in input costs as EU inputs are more important in this industry than in agriculture and fishing.
- The fall of value added in the **wholesale and retail** sector is particularly important as it is a large employer, with around 3.7 million workers. Declines in value added in this industry are largely driven by falls in exports by the wholesale trade services industry. This industry is affected by high non-tariff barriers and there is little scope for it to capture new domestic market share from EU competitors.
- Finally, the **mining** industry is expected to experience a relatively small reduction in its value added. This is despite the fact that it is the sector that currently exports the largest fraction of its output to the EU. But the industry is relatively insulated from big losses in value added because demand for goods in this sector is very responsive to price. As a result, even a small reduction in prices driven by a loss in EU demand leads to a large increase in demand from UK and non-EU sources. The industry is therefore in a position to maintain current production levels for only small changes in its value added.

As explained above, the estimated impacts shown in Figure 10.6 depend on assumptions about the responsiveness of demand to changes in price and the magnitude of non-tariff barriers for different sectors. To examine how these assumptions affect our results, Figure A.1 in the online supplementary material shows the same information as Figure 10.6 under three additional scenarios: where the responsiveness of demand is assumed to be constant across industries, where non-tariff barriers (NTBs) are assumed to be constant

**Figure 10.7. Estimated absolute change in value added due to WTO rules trade barriers, by industry**

Note: Monetary amounts are calculated using value added figures from the 2014 ONS input-output tables and are expressed in 2018 prices using the GDP deflator taken from the Office for Budget Responsibility's March 2018 Economic and Fiscal Outlook. Industries are ranked according to their contributions to the UK's gross value added.

Source: Authors' calculations using ONS analytical input-output tables 2014.

across industries (equal to their export-weighted average under the WTO rules scenario) and where both the responsiveness of demand and non-tariff barriers are assumed to be constant across industries. Figure A.1 shows that estimated impacts under each of these scenarios are similar to the baseline results shown in Figure 10.6. This means that, while there is uncertainty around the magnitude of non-tariff barriers and how demand would respond to changes in prices, we can be relatively confident that transport equipment, clothing and textiles, and chemicals, pharmaceuticals and refining are the industries that are most exposed to negative impacts of trade barriers, and that the agriculture and fisheries industry is likely to be least exposed.<sup>26</sup>

<sup>26</sup> Our findings for impacts across industries are broadly consistent with those in other studies. Dhingra, Machin and Overman (2017) also find that the chemicals and clothing industries are particularly badly affected but that the agriculture and wood products industries gain under a WTO-rules Brexit. They also find similar declines for the finance industry, though larger losses for business activities and services and somewhat

Overall, trade barriers in the WTO scenario are estimated to reduce value added by 2.6%. To understand which industries drive this overall impact, it is helpful to examine the estimated changes in value added in terms of monetary amounts. These are presented in Figure 10.7, which shows that the wholesale and retail sector is the most important cause of the overall £40 billion decline in value added, followed by the finance, transport equipment, and chemicals, pharmaceuticals and refining sectors. The estimated gross gains – across industries such as agriculture and fishing, real estate, and wood, paper and printing – offset just 6% of the total gross losses across other industries.

## 10.6 Exposure of workers to negative impacts

In this section, we use data on the industries individuals are employed in to examine the possible impacts of post-Brexit barriers on different types of workers.

We assess these impacts by looking at which workers are employed in industries that are expected to see a boost or a hit to their value added. As Section 10.5 showed, most industries would be expected to see their value added reduced as a result of new trade barriers with the EU. How these changes would translate into effects on those employed in these industries is less obvious and would depend on two main factors.

The first factor is how firms respond to these changes. Business managers may decide to respond to falls in value added by cutting wages or reducing the size of their workforce. Alternatively, they may opt to leave pay and employment largely unchanged and reduce their profit margins instead. In addition, they may try to find ways to make more efficient use of intermediate inputs and raw materials, or otherwise improve their productivity.<sup>27</sup>

For workers whose companies do pass along some of the impact – either in lower wages or employment losses – the second factor that matters for how these changes will affect workers' well-being is how easily negatively affected workers are able to find new employment in other industries. Workers who are more able to move from shrinking to growing industries will tend to fare better. This will depend on whether there are alternative employment opportunities in their home region, how easily workers can move to new locations if there are not, and whether they possess skills that are easily transferable between industries.

We do not model impacts on individual workers, which would require making assumptions about all of these things.<sup>28</sup> However, it is reasonable to assume that the

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smaller declines in value added for the transport equipment sector. (S. Dhingra, S. Machin and H. Overman, 'Local economic effects of Brexit', *National Institute Economic Review*, 2017, 242, R24–36.)

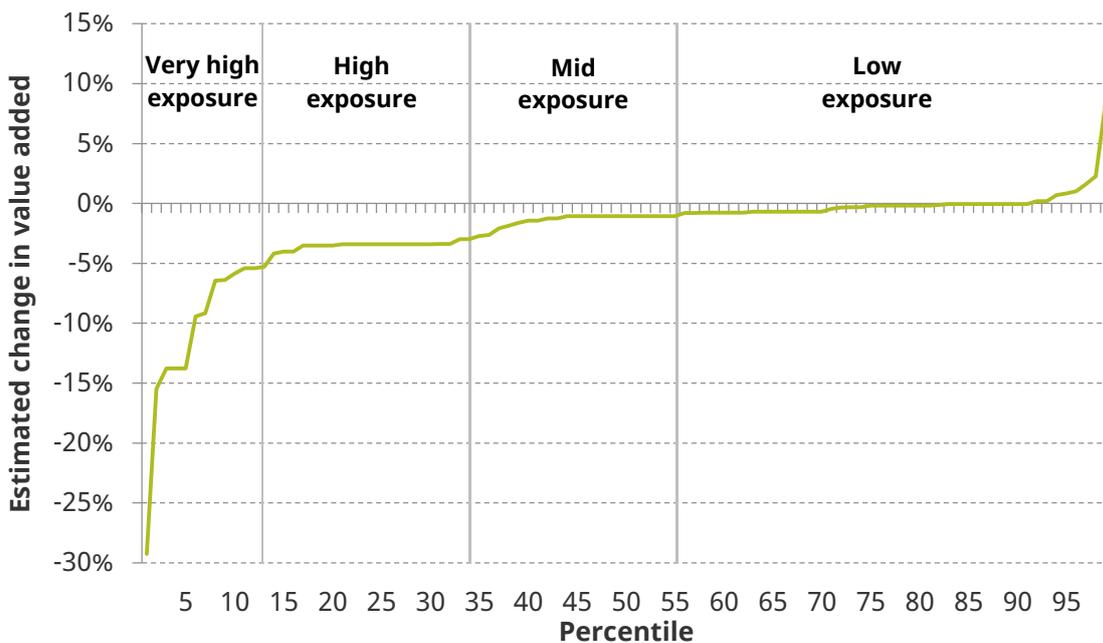
<sup>27</sup> Guiso, Pistaferri and Schivardi (2005) find that firms are more likely to change employee earnings if they experience permanent shocks to productivity rather than temporary shocks, but the authors do not examine whether firms change the number of workers they employ. Lagakos and Ordoñez (2011) find that wages respond more to productivity shocks in industries that employ relatively high fractions of low-educated workers, but again they do not examine how industry employment levels respond to shocks. (L. Guiso, L. Pistaferri and F. Schivardi, 'Insurance within the firm', *Journal of Political Economy*, 2005, 113, 1054–87; D. Lagakos and G. L. Ordoñez, 'Which workers get insurance within the firm?', 2011, *Journal of Monetary Economics*, 58, 632–45.)

<sup>28</sup> In this chapter, we have also not considered how increased trade barriers might differentially affect the costs of consumer goods and services. Other analysis suggests that price increases from a WTO-rules Brexit would have the largest negative impacts on lower-income consumers. See S. Clarke, I. Serwicka and L. A. Winters,

impact of new trade barriers on an industry's value added and the impacts on its employees would be closely related. We can therefore get a good idea of how different types of worker might be affected by looking at the characteristics of workers employed in industries that would be more exposed to new trade barriers after Brexit.

To do this, Figure 10.8 lines up workers in order according to the predicted value added change of their current industry of employment under a WTO rules scenario.<sup>29</sup> We also group workers according to their exposure. We classify workers as 'very highly exposed' if we predict their industry is predicted to experience a value added decline of more than 5%, as 'highly exposed' if their industry is predicted to experience a value added decline of 3–5%, as having 'mid exposure' if their industry is predicted to experience a value added decline of 1–3%, and as having 'low exposure' if their industry is predicted to experience a decline in value added of 1% or less (or an increase in value added). The graph shows that most workers are in industries that have quite low exposure. However, a small proportion of workers are in industries that are predicted to experience quite sharp reductions in value added. For instance, 5% of workers (or about 1.3 million people) are employed in industries that are predicted to experience a value added decline of 14% or more, while

**Figure 10.8. Distribution of estimated change in employer value added under the WTO rules scenario among UK employees**



Note: Employees are assigned an estimated change in value added based on their main industry of employment. 'Very high', 'high', 'mid' and 'low' exposure industries are those that are estimated to experience a reduction in value added of more than 5%, more than 3% but less than or equal to 5%, more than 1% but less than or equal to 3%, and less than or equal to 1% or an increase in value added, respectively.

Source: Authors' calculations using ONS analytical input-output tables 2014 and the Quarterly Labour Force Survey 2017 quarters 1–4.

*Changing Lanes: The Impact of Different Post-Brexit Trading Policies on the Cost of Living*, 2017, Resolution Foundation, <https://www.resolutionfoundation.org/publications/changing-lanes/>.

<sup>29</sup> Figure A.2 in the online supplementary material shows similar information for the FTA and EEA scenarios, alongside that for the WTO rules scenario.

45% (11.9 million) work in industries where the predicted decline in value added is 1% or less.

Table 10.1 shows the proportions of male and female employees in different education groups in industries with low, medium, high and very high exposure, alongside the average exposure among each group. For instance, it shows that 14% of workers (or 3.7 million) are employed in industries which we classify as very highly exposed.

The table also shows that the average exposure among industries that men work in is much greater than for women. The average predicted value added fall among the industries men work in is 3%, compared with 2% for women. This is not because all men work in more exposed industries than women do. In fact, the proportions of men and women working in low-exposure industries are quite similar (at 43% and 47% respectively). Rather, it is primarily due to the fact that men are more likely to work in very highly exposed industries than women: 17% of men work for such industries compared with just 10% of women.

**Table 10.1. Exposure of workers to new trade barriers under the WTO rules scenario<sup>a</sup>**

	Number employed ('000s)	Mean change in employer value added	Fraction of group employed in ...			
			Low-exposure industries	Mid-exposure industries	High-exposure industries	Very-high-exposure industries
All	26,500	-2.5%	45%	22%	19%	14%
Women: All	13,100	-2.0%	47%	25%	19%	10%
Low-educated	4,400	-2.5%	42%	17%	28%	12%
Mid-educated	3,800	-1.9%	52%	19%	20%	9%
High-educated	4,900	-1.7%	47%	35%	10%	8%
Men: All	13,400	-3.0%	43%	20%	19%	17%
Low-educated	5,100	-3.5%	45%	11%	24%	19%
Mid-educated	3,700	-3.1%	45%	16%	21%	18%
High-educated	4,600	-2.4%	40%	32%	13%	15%

<sup>a</sup> Tables A.3a and A.3b in the online supplementary material contain the same analysis for the FTA and EEA scenarios, respectively.

Note: Employees are assigned an estimated change in value added based on their main industry of employment. Workers are classified as 'low-educated' if their highest educational qualification is at GCSE level or lower, as 'mid-educated' if their highest educational qualification is at A level or is another form of further education below degree level, and as 'high-educated' if they hold a degree or degree-equivalent qualification. 'Very-high-', 'high-', 'mid-' and 'low-' exposure industries are those that are estimated to experience a reduction in value added of more than 5%, more than 3% but less than or equal to 5%, more than 1% but less than or equal to 3%, and less than or equal to 1% or an increase in value added, respectively.

Source: Authors' calculations using ONS analytical input-output tables 2014 and the Quarterly Labour Force Survey 2017 quarters 1-4.

Looking across education groups, average exposure is greatest among the less educated – and particularly high in the industries that tend to employ low-educated men. This is because, while the proportion of low-educated men in industries with low exposure is greater than the proportion of high-educated men in those industries, more low-educated workers are employed in industries with high or very high exposure. Industries with high or very high exposure employ 19% and 17% of low-educated men respectively, compared with 13% and 15% of men with a degree. In Tables A.3a and A.3b in the online supplementary material, we look at how these impacts vary under our FTA and EEA scenarios. While the size of predicted impacts is lower under both of these alternative scenarios, the relative impacts remain greatest for low-educated workers, and for low-educated male workers in particular.

We next focus on differences in exposure across occupations. Whereas a worker's industry of employment is determined by the goods or services their employer produces, their occupation is determined by their job title and the tasks they perform at work. As a result, workers are likely to find it harder to move between different occupations than they are to move between different industries. For example, someone working as a secretary for a drinks manufacturer would likely find it easier to move to a new job as a secretary for a toy manufacturer (i.e. change industry but not occupation) than to move to a new job as an accountant for a drinks manufacturer (i.e. change occupation but not industry). This is important as it means that, if certain occupations are concentrated in industries that experience large negative impacts due to trade barriers, it may be more challenging for workers in these occupations to find alternative employment in less-affected industries.

Figure 10.9 shows the proportions of workers in each occupation group who are employed in industries with different degrees of exposure. The occupation with the greatest proportion of workers employed in very highly exposed industries is 'process, plant and machine operatives'. Roughly 480,000 of the 1.7 million workers in this occupation group – 29% – are employed in very highly exposed industries. This is because industries with relatively high estimated reductions in value added – such as clothing and textiles and other manufacturing industries – tend to employ more process, plant and machine operatives than other, less-exposed industries. By contrast, industries such as health and education are estimated to experience relatively small reductions in value added and tend to employ more workers in caring, leisure and service occupations. As a result, the proportion of workers in this occupation who are employed in very highly exposed industries is the lowest of all occupation groups (at just 3%, or about 90,000 workers).

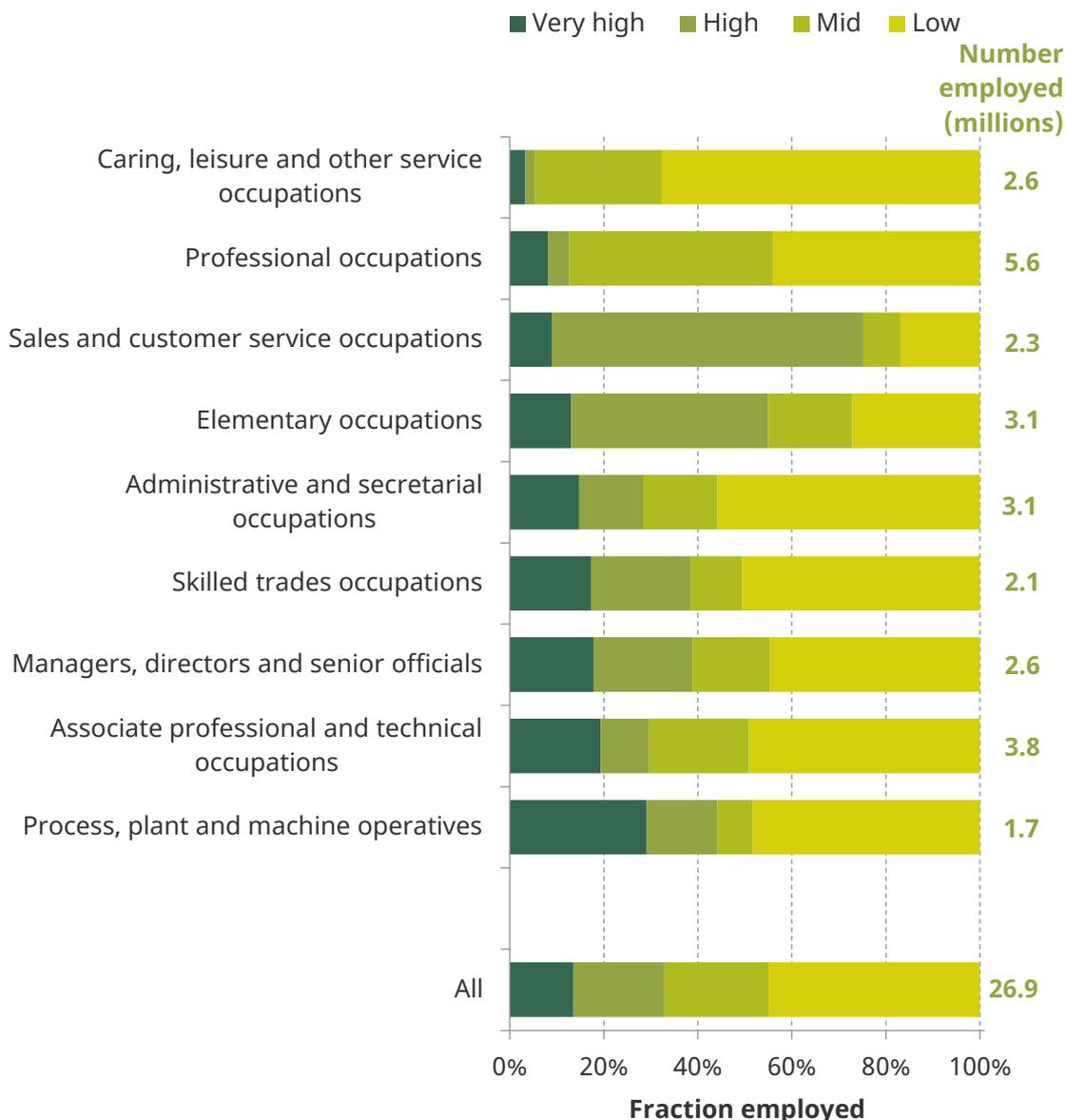
The fact that process, plant and machine operatives are more likely to be employed in the industries that would probably be worst affected by UK–EU trade barriers should be a matter of particular concern for policymakers. Since workers in this occupation group tend to be older and less likely to have a degree, they are more likely to have skills that are specific to their current roles and industries of employment.<sup>30</sup> As a result, they may find it particularly difficult to find employment in other less adversely affected industries. Previous research has found that workers in this occupation are unlikely to switch into other less exposed but equally well-paid occupations than other groups over the course of

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<sup>30</sup> We set out the characteristics of workers in each occupation group in Table A.5 of the online supplementary material.

their careers, suggesting that workers in this group may indeed be less likely to find new roles if they are exposed to negative impacts following Brexit.<sup>31</sup>

**Figure 10.9. Percentages of employees working in low-, mid-, high- and very-high-exposure industries, by occupation: WTO rules scenario<sup>a</sup>**



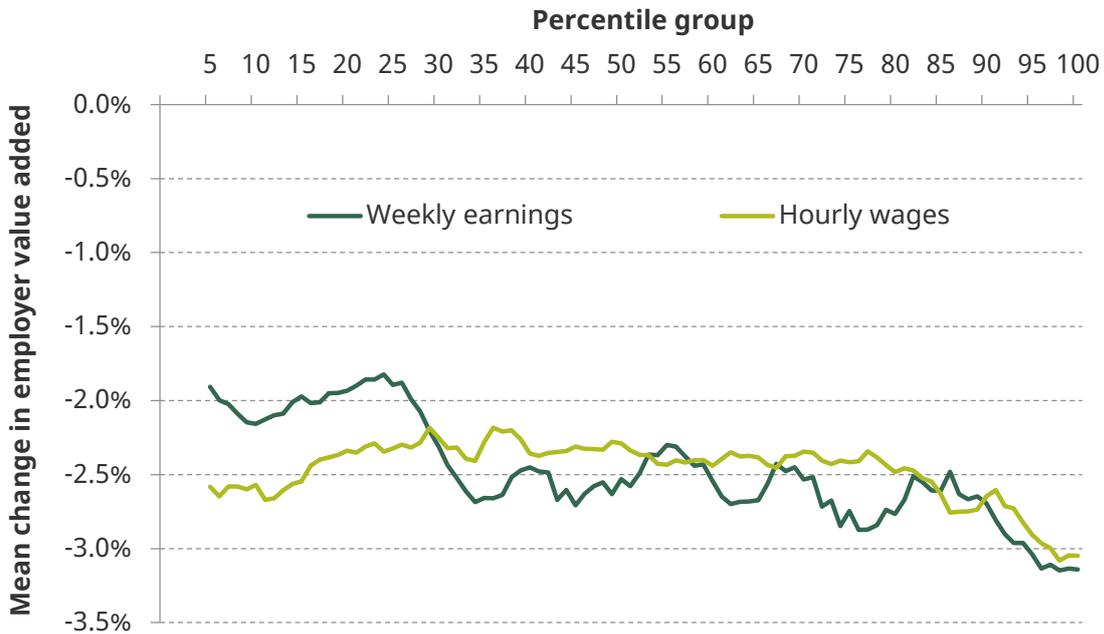
<sup>a</sup> Table A.4 in the online supplementary material contains similar analysis for the FTA and EEA scenarios, alongside that for the WTO rules scenario.

Note: Employees are assigned an estimated change in value added based on their main industry of employment.

Source: Authors' calculations using ONS analytical input-output tables 2014 and the Quarterly Labour Force Survey 2017 quarters 1–4.

<sup>31</sup> See table 5 of C. Carrillo-Tudela, B. Hobijn, P. She and L. Visschers, 'The extent and cyclicity of career changes: evidence for the U.K.', *European Economic Review*, 2016, 84, 18–41.

**Figure 10.10. Mean predicted change in employer value added under the WTO rules scenario, by pay percentile group (Great Britain)**



Note: Employees are assigned an estimated change in value added based on their main industry of employment. Mean changes in employer value added are plotted as a five-percentile moving average.

Source: Authors' calculations using ONS analytical input-output tables 2014 and the Annual Survey of Hours and Earnings 2017.

We next turn to how exposure varies according to the level of workers' pay. Figure 10.10 shows average changes in employer value added for workers at different points in the distributions of earnings and wages.<sup>32</sup> The dark green line shows that employees who have higher levels of weekly earnings are estimated to see greater reductions in employer value added on average than those on low weekly earnings. For example, the average change in employer value added among workers in the 10<sup>th</sup> percentile group of the earnings distribution is 2.2%, compared with 2.5% among workers in the very middle of the earnings distribution and 2.7% among workers in the 90<sup>th</sup> percentile group. This suggests that post-Brexit trade barriers would act to reduce inequality in weekly earnings. However, it is important to note that value added is estimated to fall across the entirety of the earnings distribution.

The reason that reductions in employer value added are smaller towards the bottom of the earnings distribution is that many low-earning workers are employed in service industries that tend to export less to the EU – a pattern shown in Figure 10.4. By contrast, estimated changes in employer value added are greatest at the top of the earnings distribution as very highly paid workers are more likely than other workers to be employed in industries with relatively large estimated reductions in value added, such as finance.

<sup>32</sup> Figure 10.10 shows the earnings and wage distributions in Great Britain only, as Northern Ireland is not included in the version of the Annual Survey of Hours and Earnings that was used in this analysis.

These findings initially appear puzzling given the results in Table 10.1, which showed that low-educated workers were more exposed to the negative consequences of trade barriers than more highly educated workers. The result in Figure 10.10 – that post-Brexit trade barriers will act to reduce earnings inequality – arises for two reasons. First, rather than comparing between workers of the same sex as Table 10.1 does, the figure looks at all workers together. Since male workers tend to work in worse-affected industries and men tend to earn more than women, trade barriers will weigh more heavily on the (more male-dominated) upper end of the earnings distribution. Second, within each broad education group – GCSEs and below, A level or equivalent, and degree level or higher – the workers who work in the most affected industries also tend to earn more than other workers.<sup>33</sup> This again means that impacts are likely to be larger in the upper part of the earnings distribution.

The light green line in Figure 10.10 shows how impacts differ according to workers' *hourly wages* (their weekly earnings divided by hours worked per week). It shows that workers who are paid relatively low hourly wages tend to do worse than workers with relatively low weekly earnings. This indicates that some of the patterns in the figure are driven by the fact that low-earning workers, who are less likely to work in exposed industries, tend to be working fewer hours. However, workers paid the highest hourly wages are more exposed than lower-paid workers, implying that increases in trade barriers with the EU are likely to reduce hourly wage inequality.

Figures A.3a and A.3b in the online supplementary material show that the patterns in exposure across the pay distribution are robust to different assumptions about the responsiveness of demand and non-tariff barriers, which suggests they are driven by the importance of trade with the EU. Figure A.4 shows how impacts across the pay distribution vary according to the trade scenario we consider. Average exposure is lower under the FTA and EEA scenarios across the earnings distribution, but in all three scenarios higher-earning workers tend to be the ones employed in the most negatively affected industries.

## 10.7 Impacts across the UK

We can also investigate where more exposed industries tend to be located to get an idea of Brexit's possible impact on different regions. This is an area where estimating the likely effect of Brexit is particularly uncertain. Previous studies on Brexit's regional impacts have come to different conclusions. For example, the government's 'Whitehall analysis' found that the gross value added would fall furthest in the North East of England and least in London.<sup>34</sup> However, a similar analysis by researchers at the Centre for Economic Performance at LSE found that parts of London were some of the most affected areas.<sup>35</sup>

<sup>33</sup> For example, very highly exposed workers in the 'low education' group have average earnings that are 24% higher than other low-educated workers (the equivalent figures for mid- and high-educated workers are 35% and 24% respectively). (Source: Authors' calculations using ONS analytical input-output tables 2014 and the Quarterly Labour Force Survey 2017 quarters 1–4.)

<sup>34</sup> House of Commons Exiting the European Union Committee, 'EU exit analysis cross Whitehall briefing', 2018, <https://www.parliament.uk/documents/commons-committees/Exiting-the-European-Union/17-19/Cross-Whitehall-briefing/EU-Exit-Analysis-Cross-Whitehall-Briefing.pdf>.

<sup>35</sup> S. Dhingra, S. Machin and H. Overman, 'Local economic effects of Brexit', *National Institute Economic Review*, 2017, 242, R24–36.

We obtain a simple measure of the impacts of post-Brexit trade barriers by calculating the average change in value added in each region and nation of the UK, taking into account the local employment mix. As is the case when considering impacts on individual workers, it is important to remember that the way in which reductions in employers' value added will impact workers in different regions will depend on firms' responses to new trade barriers. In addition, there is also uncertainty over the extent to which firms in a given industry are more or less likely to export to the EU – for instance, depending on where they are located. Since we do not have good data on this question, we assume that the share of exports to the EU from a given industry does not vary across regions (as we did in Section 10.3). This means we are likely to overestimate the exposure in some regions and underestimate it in others (for example, trade with the EU is likely to be more important for industries in Northern Ireland than for the same industries located elsewhere). Despite these uncertainties, however, it is likely that negative impacts will be larger in areas of the UK where the industries that experience the greatest declines in value added account for a relatively high fraction of local employment. This is what we analyse below.

The results are presented in Table 10.2. In our baseline WTO rules scenario, we find that the West Midlands, East Midlands and North West are the worst-affected areas, with average employer value added falling by 2.7%, 2.5% and 2.5% respectively in comparison with the national average of 2.3%. This is largely due to the fact that the industries that are more important in these regions tend to export more to the EU. In particular, the larger negative impact in the West Midlands reflects the fact that the transport equipment industry accounts for 2.2% of employment in the West Midlands (around 60,000 workers), in comparison with just 0.9% of employment in the UK as a whole.

There is no clear correlation between average impacts and average earnings in each region, making the effects on interregional inequality ambiguous.

However, it is worth noting that the differences in average impacts across regions are not as great as the differences across different worker types shown in Table 10.1. This suggests that differences in exposure between workers *within* a region are likely to be more important than differences in average worker outcomes *between* regions.

Moreover, we find that the relative ranking of some regions is quite sensitive to the estimates of non-tariff barriers we use. Table 10.2 also shows results for situations where we assume that all industries face a common non-tariff barrier (in the second column), where we hold the responsiveness of demand to price changes constant across industries (in the third column) and where we hold both of these things constant across industries (in the fourth column). It is noteworthy that while in our baseline results London is the sixth-worst-affected region, it becomes the third-worst-affected when we assume constant non-tariff barriers across industries. This is because while the North East, East Midlands, and Yorkshire and the Humber are worse affected than London when we use the non-tariff barrier estimates from the government's 'Whitehall analysis', they are less badly hit than London in a case where we hold non-tariff barriers constant across industries. An important reason for this is the fact that the non-tariff barriers that we assign to exports of the finance industry in our baseline results are lower than those for other industries. The finance industry accounts for 7% of employment in London, nearly double the fraction in the UK as a whole.

**Table 10.2. Average estimated change in employer value added, and median employee earnings, by region and nation of the UK<sup>a</sup>**

	Mean change in employer value added				Median gross employee earnings
	WTO rules	Constant NTBs	Constant responsiveness	Constant NTBs & responsiveness	
UK	-2.3%	-2.1%	-2.2%	-2.0%	£24,100
West Midlands	-2.7%	-2.4%	-2.6%	-2.3%	£22,800
North West	-2.5%	-2.3%	-2.4%	-2.2%	£22,700
East Midlands	-2.5%	-2.2%	-2.4%	-2.1%	£21,800
North East	-2.4%	-2.2%	-2.3%	-2.1%	£22,300
Yorkshire & Humber	-2.4%	-2.1%	-2.3%	-2.0%	£21,800
London	-2.3%	-2.2%	-2.2%	-2.2%	£33,000
South East	-2.3%	-2.0%	-2.2%	-2.0%	£25,300
Wales	-2.3%	-2.1%	-2.2%	-2.0%	£21,800
East of England	-2.1%	-1.9%	-2.1%	-1.8%	£23,300
South West	-2.0%	-1.9%	-2.0%	-1.9%	£22,300
Scotland	-2.0%	-1.9%	-1.9%	-1.8%	£23,800
Northern Ireland <sup>b</sup>	-1.7%	-1.7%	-1.7%	-1.6%	£21,800

<sup>a</sup> Table A.6 in the online supplementary material shows the mean change in employer value added for the FTA and EEA scenarios, alongside that for the baseline WTO rules scenario, by region and nation of the UK.

<sup>b</sup> We assume that the share of exports to the EU from a given industry does not vary across regions. This may underestimate the degree to which Northern Ireland in particular is exposed.

Note: Mean estimated change in employer value added is calculated as the mean estimated change in value added across all active local units in a given region weighted by local unit employment. Median earnings are rounded to the nearest £100 and expressed in 2018 prices using the CPI taken from the Office for Budget Responsibility's March 2018 Economic and Fiscal Outlook. UK-wide impacts differ from those in Table 10.1 as the employment-weighted average impact is calculated using the Business Structure Database here rather than the Quarterly Labour Force Survey.

Source: Mean changes in employer value added are the authors' calculations using ONS analytical input-output tables 2014 and the Business Structure Database (local unit file) 2016. Median gross employee earnings are taken from table 7.1 of the Annual Survey of Hours and Earnings 2017.

This suggests that the impact of trade barriers on London relative to other regions is particularly sensitive to assumptions about the (uncertain) size of non-tariff barriers in finance relative to other industries. Since London is the region with the highest average earnings, this makes the impact of trade barriers on interregional inequality similarly uncertain.<sup>36</sup>

<sup>36</sup> It is worth comparing the results we obtain here with previous estimates of relative regional impacts due to Brexit. Los et al. (2017) look at regions' direct and indirect exports to the EU and find, as we do, that areas in the north and the Midlands are most exposed (B. Los, P. McCann, J. Springford and M. Thissen, 'The mismatch between local voting and the local economic consequences of Brexit', *Regional Studies*, 2017, 51, 786–99).

**Table 10.3. Fraction employed in very highly exposed industries under the WTO rules scenario by region, education and gender<sup>a</sup>**

	Men			Women		
	Low education	Mid education	High education	Low education	Mid education	High education
UK	19%	18%	15%	12%	9%	8%
West Midlands	24%	19%	18%	12%	10%	6%
North West	19%	21%	14%	11%	9%	8%
East Midlands	21%	21%	17%	17%	10%	7%
North East	17%	16%	12%	9%	7%	7%
Yorkshire & Humber	23%	21%	15%	14%	9%	7%
London	14%	12%	14%	9%	8%	10%
South East	17%	19%	16%	11%	9%	9%
Wales	21%	17%	11%	9%	7%	7%
East of England	17%	16%	19%	17%	6%	12%
South West	20%	19%	14%	12%	9%	7%
Scotland	16%	16%	15%	11%	8%	8%
Northern Ireland	25%	19%	12%	13%	6%	7%

<sup>a</sup> Tables A.7a and A.7b in the online supplementary material contain the same analysis for the FTA and EEA scenarios, respectively.

Note: Employees are assigned an estimated change in value added based on their main industry of employment. Workers are classed as 'low-educated' if their highest educational qualification is at GCSE level or lower, as 'mid-educated' if their highest educational qualification is at A level or is another form of further education below degree level, and as 'high-educated' if they hold a degree or degree-equivalent qualification. 'Very highly' exposed industries are those that are estimated to experience a reduction in value added of more than 5%.

Source: Authors' calculations using ONS analytical input-output tables 2014 and the Quarterly Labour Force Survey 2017 quarters 1–4.

Dhingra, Machin and Overman (2017) find a weak positive relationship between value added losses at the level of local authorities and local incomes. They find that the worst-affected areas are local authorities located in London and the South East. This is likely due to the fact that these authors find large losses for business activities sectors, owing to the fact they assume relatively larger non-tariff barriers apply to these sectors than we do. They also find smaller effects for areas in the West Midlands than we do, possibly because they predict smaller losses in the transport equipment sector. (S. Dhingra, S. Machin and H. Overman, 'Local economic effects of Brexit', *National Institute Economic Review*, 2017, 242, R24–36.) The government's 'Whitehall analysis' also includes estimates of effects by region, finding that the North East is the region most affected, with London the least affected. It also finds, as we do, relatively large effects for the West Midlands. One key difference between this study and ours is that the Whitehall analysis incorporates growth in industries' value added that is due to workers reallocating from shrinking to growing industries. This may lead to growth in the *total* value added of industries located in particular regions; however, this growth would not benefit workers currently employed in those industries (the benefit to them will depend on value added *per worker*). This could explain some of the differences in regional outcomes that we obtain. (House of Commons Exiting the European Union Committee, 'EU exit analysis cross Whitehall briefing', 2018, <https://www.parliament.uk/documents/commons-committees/Exiting-the-European-Union/17-19/Cross-Whitehall-briefing/EU-Exit-Analysis-Cross-Whitehall-Briefing.pdf>.)

Alongside average exposure across workers in each region, it is also worth considering whether exposed industries are particularly important employers of workers of a given type. Specifically, it is interesting to examine whether very highly exposed industries are important employers of workers with low educational qualifications. This is because, as we discussed in Section 10.6, these workers may have fewer transferable skills and may have skills more specific to their current industry of employment. We look at this in Table 10.3, which shows the proportion of male and female employees with different education levels in ‘very highly’ exposed industries in different parts of the UK.

The table shows that very highly exposed industries tend to be particularly important employers of low-educated men in Northern Ireland and the West Midlands, employing 25% and 24% of low-educated men respectively (compared with 19% in the UK as a whole).<sup>37</sup> This suggests that low-educated workers in these regions may be particularly vulnerable if highly exposed industries shrink as a result of new trade barriers. Policymakers should pay attention to such areas, especially as there may be concentrations of particular industries in certain towns and cities within these broad regions. For example, employment in car plants can account for as much as 10% of local private sector employment in some local authorities.<sup>38</sup>

Low-educated women are less likely to be employed in highly exposed industries in general. However, they are more likely to work in such industries in the East Midlands and East of England. In these regions, 17% of low-educated women work in such industries, relative to 12% of women in the UK as a whole.

## 10.8 Conclusion

In this chapter, we have considered how new barriers to UK–EU trade would affect different UK industries. Certain industries are likely to be worse affected than others. The transport equipment, clothing and textiles, and chemicals, pharmaceuticals and refining industries appear to be particularly badly affected due to the fact that these industries export a lot to the EU or use a relatively large amount of inputs imported from the EU (or both).

Industries that are more exposed to negative impacts of trade barriers also tend to employ different types of workers from the average employer. Men, for example, are much more likely to work in highly exposed industries than women. Less-educated men are also disproportionately likely to work in the most exposed industries, as are workers in ‘process, plant and machine operatives’ occupations. This may be a matter of particular concern to policymakers, as workers in this group may find it harder to shift out of their current job and into new roles in the event of a negative shock than other groups. These issues may prove particularly acute in regions such as Northern Ireland and the West Midlands, where highly exposed industries employ a disproportionately large number of such workers. Policymakers should consider whether specific interventions (such as retraining and employment support) could help workers in these particularly highly exposed groups to adjust to the introduction of new trade barriers.

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<sup>37</sup> The Northern Ireland figure is likely, if anything, to be an underestimate given that industries in that country are likely to conduct more trade with the EU than otherwise-similar industries located elsewhere in the UK.

<sup>38</sup> S. Bernick, R. Davies and A. Valero, *Industry in Britain: An Atlas*, Centre for Economic Performance, Special Paper 34, 2017, <http://cep.lse.ac.uk/pubs/download/special/cepsp34.pdf>.

Overall, the average exposure of industries employing higher-earning workers tends to be greater than the exposure of industries employing those in the bottom half of the earnings distribution. While this suggests trade barriers may lead to a reduction in earnings inequality, their impact on interregional inequality is more uncertain, and will depend importantly on whether non-tariff barriers on industries such as finance turn out to be small or large.

However, in all scenarios we consider, new trade barriers have a negative impact on average for all earnings groups. This suggests that even if changing patterns of demand resulting from higher trade costs with the EU act to mitigate some aspects of inequality in the UK, it would come at the cost of making the vast majority of UK workers poorer.

## Appendix A. Headline tax and benefit rates and thresholds

This table shows headline tax and benefit rates and thresholds for 2018–19. Rates and thresholds for 2019–20 are also shown where either by default they do not change or where the government has already announced its plans. Other rates and thresholds – which depend on the September 2018 CPI inflation rate – are marked with an asterisk (\*). Shortly after these inflation figures are released (17 October 2018) an updated version of this table will be available at <http://www.ifs.org.uk/green-budget/2018>.

	2018–19	2019–20 <sup>a</sup>
<b>Income tax</b>		
Personal allowance	£11,850 p.a.	*
Married couple's allowance, restricted to 10% (at least one spouse/civil partner born before 6/4/35)	£8,695 p.a.	*
Basic rate <sup>b</sup>	20%	20%
Higher rate <sup>b</sup>	40%	40%
Additional rate <sup>b</sup>	45%	45%
Basic-rate limit <sup>b</sup>	£34,500 p.a.	*
Higher-rate limit <sup>b</sup>	£150,000 p.a.	£150,000 p.a.
Threshold for personal allowance withdrawal	£100,000 p.a.	£100,000 p.a.
Personal savings allowance, basic (higher) rate	£1,000 (£500) p.a.	£1,000 (£500) p.a.
Starting-rate limit (for savings income)	£5,000 p.a.	£5,000 p.a.
Tax rates on savings income	0%, 20%, 40%, 45%	0%, 20%, 40%, 45%
Dividend allowance	£5,000 p.a.	£5,000 p.a.
Tax rates on dividend income	7.5%, 32.5%, 38.1%	7.5%, 32.5%, 38.1%
<b>National Insurance contributions</b>		
Earnings threshold	£162 p.w.	*
Upper earnings limit (UEL)	£892 p.w.	*
Employee rate – below UEL	12%	12%
– above UEL	2%	2%
Employer rate	13.8%	13.8%
<b>Apprenticeship levy</b>		
Rate	0.5%	0.5%
Allowance	£15,000 p.a.	£15,000 p.a.
<b>Corporation tax</b>		
Main rate	19%	19%
Bank surcharge	8%	8%

	2018-19	2019-20 <sup>a</sup>
<b>Bank levy</b>		
Rates: equity and long-term liabilities	0.08% (0.075% from Jan 2019)	0.075% (0.07% from Jan 2020)
short-term liabilities	0.16% (0.15% from Jan 2019)	0.15% (0.14% from Jan 2020)
<b>Capital gains tax</b>		
Annual exempt amount (for individuals)	£11,700 p.a.	*
Standard rate – housing and carried interest	18%	18%
– other assets	10%	10%
Higher rate – housing and carried interest	28%	28%
– other assets	20%	20%
Entrepreneurs' relief rate	10%	10%
<b>Inheritance tax</b>		
Nil-rate band	£325,000	£325,000
Residence nil-rate band	£125,000	£150,000
Rate for transfer at or near death	40%	40%
<b>Value added tax</b>		
Registration threshold	£85,000 p.a.	£85,000 p.a.
Standard rate	20%	20%
Reduced rate	5%	5%
<b>Excise duties</b>		
Beer (pint at 3.9% ABV)	42.3p	43.5p <sup>c</sup>
Wine (75cl bottle at 12% ABV)	216p	223p <sup>c</sup>
Spirits (70cl bottle at 40% ABV)	805p	829p <sup>c</sup>
20 cigarettes: <sup>d</sup> specific duty	434p	459p <sup>c</sup>
<i>ad valorem</i> (16.5% of retail price)	169p	175p <sup>c</sup>
Ultra-low-sulphur petrol (litre)	57.95p	57.95p
Ultra-low-sulphur diesel (litre)	57.95p	57.95p
<b>Air passenger duty</b>		
Band A (up to 2,000 miles): economy	£13	£13
club & first class	£26	£26
Band B (over 2,000 miles): economy	£78	£78
club & first class	£156	£172
<b>Betting and gaming duty</b>		
Gaming duty (depends on gross gaming yield)	15-50%	15-50%
Spread betting rate: financial bets	3%	3%
other bets	10%	10%

	2018-19	2019-20 <sup>a</sup>
<b>Insurance premium tax</b>		
Standard rate	12%	12%
Higher rate	20%	20%
<b>Stamp duty land tax (England)<sup>e</sup></b>		
First time buyers of residential property valued under £500,000:		
up to £300,000	0%	0%
£300,000-£500,000	5%	5%
All other residential property purchases:		
up to £125,000	0%	0%
£125,000-£250,000	2%	2%
£250,000-£925,000	5%	5%
£925,000-£1,500,000	10%	10%
above £1,500,000	12%	12%
Non-residential property purchases:		
up to £150,000	0%	0%
£150,000-£250,000	2%	2%
above £250,000	5%	5%
<b>Stamp duty on shares</b>		
Rate	0.5%	0.5%
<b>Vehicle excise duty</b>		
Petrol/diesel cars registered after 1/4/17:		
First year (emissions-based)	£0-£2,070	£0-£2,130 <sup>c</sup>
Subsequent years	£140 p.a.	£145 p.a. <sup>c</sup>
Petrol/diesel cars registered 1/3/01-31/3/17:		
Graduated (emissions-based) system	£0-£555 p.a.	£570 p.a. <sup>c</sup>
Heavy goods vehicles (varies according to vehicle type and weight)	£165-£1,850 p.a.	£170-£1,905 p.a. <sup>c</sup>
<b>Landfill tax<sup>f</sup></b>		
Standard rate	£88.95 per tonne	£91.60 per tonne <sup>c</sup>
Lower rate (inactive waste only)	£2.80 per tonne	£2.90 per tonne <sup>c</sup>
<b>Climate change levy</b>		
Electricity	0.583p/kWh	0.847p/kWh
Natural gas	0.203p/kWh	0.339p/kWh
Liquefied petroleum gas	1.304p/kg	2.175p/kg
Any other taxable commodity	1.591p/kg	2.653p/kg
<b>Council tax</b>		
Average band D rate in England	£1,671	Councils to set



	2018-19	2019-20 <sup>a</sup>
<b>Pension credit</b>		
Guarantee credit, for those over female SPA:		
single	£163.00 p.w.	*
couple	£248.80 p.w.	*
Savings credit, for those aged 65 or over who reached SPA before 6/4/16:		
threshold		
- single	£140.67 p.w.	*
- couple	£223.82 p.w.	*
maximum		
- single	£13.40 p.w.	*
- couple	£14.99 p.w.	*
withdrawal rate	40%	40%
<b>Child benefit</b>		
First child	£20.70 p.w.	£20.70 p.w.
Other children	£13.70 p.w.	£13.70 p.w.
Threshold	£50,000 p.a.	£50,000 p.a.
Withdrawal rate	1% per £100	1% per £100
<b>Child tax credit</b>		
Family element <sup>i</sup>	£545 p.a.	£545 p.a.
Child element <sup>j</sup>	£2,780 p.a.	£2,780 p.a.
<b>Working tax credit</b>		
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.
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%
<b>Features common to child and working tax credits</b>		
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%

	2018–19	2019–20 <sup>a</sup>
<b>Universal credit</b>		
Standard allowance:		
single (aged 25 or over)	£317.82 p.m.	£317.82 p.m.
couple (at least one aged 25 or over)	£498.89 p.m.	£498.89 p.m.
Child element <sup>j</sup>	£231.67 p.m.	£231.67 p.m.
Premium for first child <sup>i</sup>	£45.41 p.m.	£45.41 p.m.
Limited capability for work element <sup>h</sup>	£126.11 p.m.	*
Limited capability for work-related activity element	£328.32 p.m.	*
Carer element	£156.45 p.m.	*
Childcare element:		
maximum eligible cost for one child	£646.35 p.m.	£646.35 p.m.
maximum eligible cost for two or more children	£1,108.04 p.m.	£1,108.04 p.m.
proportion of eligible costs covered	85%	85%
Work allowance (awarded to claimants with children or a limited capability for work):		
claim includes housing support	£198.00 p.m.	*
claim includes no housing support	£409.00 p.m.	*
Withdrawal rate	63%	63%
<b>Maternity benefits</b>		
Sure Start maternity grant	£500	£500
Statutory maternity pay:		
weeks 1–6	90% of earnings	90% of earnings
weeks 7–33	£145.18 p.w., or 90% of earnings if lower	*
Maternity allowance	£145.18 p.w.	*

JSA = Jobseeker's allowance; ESA = Employment and support allowance; SPA = State pension age; ABV = Alcohol by volume.

<sup>a</sup> 2019–20 figures take pre-announced values where available and estimated results of standard indexation – where available – otherwise. See text at the start of this appendix for further details.

<sup>b</sup> Income tax rates and thresholds are different in Scotland (except for savings and dividend income). A rate of 19% applies to the first £2,000 of taxable income, 20% to the next £10,150, and 21% to the next £19,430; the higher rate is 41% and applies to taxable income above £31,580, and the additional rate is 46% and applies to incomes above £150,000.

<sup>c</sup> Assumes RPI inflation of 3.0% in the year to the second quarter of 2019 as forecast in Office for Budget Responsibility, *Economic and Fiscal Outlook: March 2018*, <http://obr.uk/efo/economic-fiscal-outlook-march-2018/>.

<sup>d</sup> Assumes the August 2018 average pre-tax price of 20 king-size filter cigarettes (based on series CZMP from table 55 of ONS's consumer price inflation tables, <https://www.ons.gov.uk/economy/inflationandpriceindices/datasets/consumerpriceinflation>).

<sup>e</sup> Scotland and Wales operate different systems of property transaction taxes – called land and building transactions tax and land transaction tax, respectively – with different rates and thresholds.

<sup>f</sup> Scotland and Wales operate their own systems – Scottish landfill tax and landfill disposal tax, respectively – but

current set rates the same as those in the rest of the UK.

<sup>g</sup> Applies to businesses with a rateable value between £15,000 and £51,000 in England, between £18,000 and £51,000 in Scotland, and above £12,000 in Wales (assuming in all cases that the business occupies a single property). Lower rates apply to properties below these ranges, and higher rates to properties above these ranges (in England and Scotland). An additional 0.5% is payable on properties in the City of London. Northern Ireland operates a different system with locally varying rates.

<sup>h</sup> Only available for claims that began before April 2017.

<sup>i</sup> Only available to families with a child born before April 2017.

<sup>j</sup> From April 2017, some families with more than two children are not awarded the child element for third and subsequent children, depending on the children's dates of birth and whether the claim was to child tax credit or universal credit.

Sources:

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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](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

AAT	Aid Attitudes Tracker
ACP	African, Caribbean and Pacific
AIA	annual investment allowance
AME	annually managed expenditure
APF	Asset Purchase Facility
BBC	British Broadcasting Corporation
BEIS	Department for Business, Energy and Industrial Strategy
BEPS	base erosion and profit shifting
bn	billion
BoE	Bank of England
CDC	the UK's development finance institution
CDEL	capital departmental expenditure limit
CEP	Centre for Economic Performance
CES	constant elasticity of substitution
CETA	Comprehensive Economic and Trade Agreement
CGT	capital gains tax
CIPFA	Chartered Institute of Public Finance and Accountancy
CPI	Consumer Prices Index
CRS	Creditor Reporting System
CSSF	Conflict, Stability and Security Fund
CSTO	Collective Security Treaty Organisation
DAC	Development Assistance Committee
DEFRA	Department for Environment, Food and Rural Affairs
DEL	departmental expenditure limit
DFI	development finance institution
DfID	Department for International Development
DHSC	Department of Health and Social Care
DUP	Democratic Unionist Party
DWP	Department for Work and Pensions
EDF	European Development Fund
EEA	European Economic Area

EFO	Economic and Fiscal Outlook
EFTA	European Free Trade Association
ERI	Exchange Rate Index
EU	European Union
FCA	Financial Conduct Authority
FCO	Foreign and Commonwealth Office
FDI	foreign direct investment
FRS	Family Resources Survey
FTA	free trade agreement
G7	Group of Seven countries: Canada, France, Germany, Italy, Japan, UK, US
G8	Group of eight countries: Canada, France, Germany, Italy, Japan, Russia, UK, US
GAD	Government Actuary's Department
GATT	General Agreement on Tariffs and Trade
GAVI	Global Alliance for Vaccines and Immunisations
GCHQ	Government Communications Headquarters
GCRF	Global Challenges Research Fund
GCSE	General Certificate of Secondary Education
GDP	gross domestic product
GNI	gross national income
GPA	Government Property Agency
GPS	Citi Global Perspectives and Solutions report
GVA	gross value added
HE	higher education
HM	Her Majesty's
HMP	Her Majesty's Prison
HMRC	Her Majesty's Revenue and Customs
HMT	Her Majesty's Treasury
HRT	higher-rate threshold
ICAEW	Institute of Chartered Accountants in England and Wales
ICAI	Independent Commission for Aid Impact
IDA	International Development Association
IDC	International Development Committee

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IfG	Institute for Government
IFS	Institute for Fiscal Studies
IMF	International Monetary Fund
ISA	individual savings account
IT	information technology
JIO	Joint Intelligence Organisation
kg	kilogram
KORUS	United-States–Korea free trade agreement
LA	local authority
LDC	Least Developed Country
LH	left-hand
LHS	left-hand side
LSE	London School of Economics
LTI	loan-to-income
m	million
MDP	Modernising Defence Programme
MDR	Multilateral Development Review
MFF	Multiannual Financial Framework
MFN	most-favoured nation
MHCLG	Ministry of Housing, Communities and Local Government
MI5	Security Service
MI6	Secret Intelligence Service
MoD	Ministry of Defence
NAO	National Audit Office
NATO	North Atlantic Treaty Organisation
n.e.c.	not elsewhere classified
NFF	national funding formula
NHS	National Health Service
NI	Northern Ireland
NICs	National Insurance contributions
NIESR	National Institute of Economic and Social Research
NPIF	National Productivity Investment Fund
NSC	National Security Council

NTB	non-tariff barrier
OBR	Office for Budget Responsibility
OCTs	overseas countries and territories
ODA	official development assistance
OECD	Organisation for Economic Cooperation and Development
ONS	Office for National Statistics
p.a.	per annum
PA	personal allowance
PAYE	Pay As You Earn
PESA	Public Expenditure Statistical Analyses
PFI	Private Finance Initiative
PM	Prime Minister
ppt	percentage point
PRGT	Poverty Reduction Growth Trust
PSCE	public sector current expenditure
PSGI	public sector gross investment
PSNB	public sector net borrowing
PSNI	public sector net investment
p.w.	per week
Q	quarter
QQ	quarter-on-quarter
R&D	research and development
RAF	Royal Air Force
RBS	Royal Bank of Scotland
RDEL	resource departmental expenditure limit
RH	right-hand
RHS	right-hand side
RPI	Retail Prices Index
RTA	regional trade agreement
SDSR	National Security Strategy and Strategic Defence and Security Review
SE	self-employed
SIA	Single Intelligence Account
SID	statistics on international development

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SIS	Secret Intelligence Service
SNP	Scottish National Party
SPA	state pension age
SR	Spending Review
SSCs	social security contributions
SUME	single-use military equipment
TAXBEN	the IFS tax and benefit microsimulation model
TDEL	total departmental expenditure limit
TiVA	trade in value added
TME	total managed expenditure
TREVI	<i>Terrorisme, Radicalisme, Extrémisme et Violence internationale</i>
UAV	unmanned aerial vehicle
UC	universal credit
UEL	upper earnings limit
UK	United Kingdom
UN	United Nations
UPL	upper profits limit
US	United States
VAT	value added tax
WASH	water, sanitation and hygiene
WGA	Whole of Government Accounts
WIOD	World Input–Output Database
WTO	World Trade Organisation
YY	year-on-year