IFS Green Budget

October 2023

Edited by

Carl Emmerson
Paul Johnson
Ben Zaranko

In association with Citi and funded by the Nuffield Foundation

The IFS Green Budget: October 2023

Stuart Adam
Arun Advani
Carl Emmerson
Martin Mikloš
Helen Miller
Benjamin Nabarro
Christian Schulz
Isabel Stockton
David Sturrock
Imran Tahir
Sam van de Schootbrugge
Max Warner
Ben Zaranko

Edited by Carl Emmerson, Paul Johnson and Ben Zaranko

Copy-edited by Judith Payne

The Institute for Fiscal Studies

Published by

The Institute for Fiscal Studies

7 Ridgmount Street
London WC1E 7AE
Tel: +44 (0) 20 7291 4800
Email: mailbox@ifs.org.uk
www.ifs.org.uk
@TheIFS

in association with

Citi

Citigroup Centre
33 Canada Square, Canary Wharf
London E14 5LB
www.citigroup.com

funded by

The Nuffield Foundation

100 St John Street
London EC1M 4EH
www.nuffieldfoundation.org

with support from

The Economic and Social Research Council (ESRC)
through the Centre for Microeconomic Analysis of Public Policy
(CPP, reference ES/T014334/1)

Polaris House
North Star Avenue
Swindon SN2 1UJ
www.esrc.ac.uk

ISBN 978-1-80103-151-6

Foreword from Citi

We are delighted to be collaborating again with IFS on the production of the Green Budget. IFS continues to shine a critical and objective light on the key issues facing the UK public finances. IFS reports are always essential reading for policymakers, investors and corporate leaders alike.

Last year's Green Budget was published between the chaotic late September 2022 UK mini Budget and the hurried resignation of Liz Truss as Prime Minister on 20 October. A year on from these events, the UK economy is still struggling with high inflation, low growth, elevated debt and historically high taxation. Global sovereign debt markets are also once again under pressure. The pandemic, war in Ukraine and – in the UK's case – Brexit are all continuing to cast a dark economic shadow. And associated reconfiguration still poses a significant policy challenge, compounding legacy challenges around productivity and inequality. All of this acts as a huge constraint on the flexibility not just of the current Chancellor, but of whoever holds the red box after the next election.

Citi's economists have again provided two chapters for this year's Green Budget. Our first chapter looks at the global economic outlook. Global growth has so far remained relatively resilient through an extreme surge in inflation paired with one of the sharpest monetary tightening cycles in generations. We believe that a soft landing is still possible, although the path to a soft landing looks increasingly narrow – especially in the US and Europe. Global inflation has fallen from more than 9% in 2022 to below 6%. Energy disinflation may have run its course, but food inflation is falling. Remaining pandemic-era supply disruptions have faded, suggesting consumer goods will get cheaper. Once wages have adjusted to higher prices, services inflation should also fall. However, excluding China, we are now forecasting world GDP growth of less than 1% in 2024, fulfilling some definitions of a global recession. And for China we are not optimistic either.

Global interest rates are thus most likely set to fall. Rate hike cycles are coming to an end at 4% in the Euro Area, just over 5% in the UK and just under 6% in the US. Weak growth makes rate cuts most likely from Q2 2024, especially in Europe. In the US, the risks are skewed towards higher rates for longer, however, as the Fed strives to manage the trajectories of growth and inflation. This, as we have seen historically, adds to the downside risks elsewhere in the world.

Our second chapter reviews the UK economy. Here, unsurprisingly, we outline a challenging outlook. The UK's recent experience is an extreme example of a global shift in macroeconomic volatility from demand to supply. The outlook hinges on a three-way tussle between the positive effects of the unwinding of the adverse terms-of-trade shock, the

headwinds associated with tighter monetary policy, and the potential for greater inflationary persistence, especially in wage setting. We discuss likely trajectories for each of these three forces. With monetary policy transmission just getting going, and private sector balance sheets now somewhat weaker, we see the risks as skewed towards a recession through 2024.

We expect a reduction in UK CPI inflation from 6.7% in August to a little over 4% by the end of the year, which would mean that the Prime Minister meets his goal to halve inflation. But this should not be taken as a sign of complacency with respect to the inflationary risks, especially as we head into an election year. The risks of a more disruptive inflationary scenario are still very real. If there were to be any ill-timed fiscal giveaways, they would risk shifting the UK into a higher-inflation paradigm. In the near term, the UK has little room for electoral inducement through fiscal giveaways. Going forward, we think that there is a compelling case for fiscal policy to take on more of the burden of managing the risks around inflation. This should come alongside efforts to invest in greater macroeconomic flexibility.

I would like to thank Christian Schulz and Benjamin Nabarro from Citi's European Economics team for their detailed work in compiling respectively the global and UK chapters for this year's Green Budget. I would also like to thank IFS for the opportunity to collaborate again on the Green Budget.

Andrew Pitt
Global Head of Research
Citi Institutional Clients Group

Foreword from the Nuffield Foundation

Since 1982, the Green Budget has provided a comprehensive and independent assessment of the state of the public finances ahead of the Chancellor's Budget and Spending Review. Its meticulous analysis secures the foundations for a more transparent, evidence-based public conversation about how to respond to the economic and social challenges currently facing the UK and it enables the government's own account to be held up to scrutiny.

The Nuffield Foundation has now continuously funded and supported the Green Budget for over 10 years, a period that has covered the aftermath of the Financial Crisis, Brexit, the COVID-19 pandemic and the outbreak of war in Europe. The Green Budget may be an annual audit of the government's fiscal position and policy options, but it also shapes the wider public policy agenda over the longer term.

IFS has been the most significant recipient of Nuffield funding over a long period. Its work has provided a framework for the Foundation's core interest in social well-being, pathways to opportunity and addressing deep-rooted inequalities in British society. However, we are now entering a period where insecurity looms as large as inequality; the tectonic shifts in global geopolitics, economics and climate change are likely to have profound consequences for the UK economy, which will ultimately manifest in people's lives, individually and collectively. For example, high inflation exacerbated by the Ukraine war persists, albeit at a lower rate than 12 months ago. As a result, the cost-of-living crisis remains acute, with many households seeing the costs of essentials such as food, energy and rent rising faster than their incomes.

Alongside these developments, we witness the significant implications of demographic change. This Green Budget shows that a near-doubling of the population aged over 85 in the next 20 years will have major implications for the NHS, leading by the middle of the next decade to *additional* demand for NHS spending every year roughly equal to the *total* amount the UK currently spends on defence. Tax revenues as a share of national income are already at a historic high. So too is the national debt, and the costs of servicing that debt have also risen sharply.

Any future government will seek to address the UK's sluggish productivity growth but fiscal policy – whether to raise spending, cut taxes or increase debt – is ultimately a political choice. The Green Budget's analysis challenges governments to be open about the trade-offs they face and how they plan to respond to them. IFS has a long record of interrogating the efficiency of the tax system and the effectiveness of public spending. This edition of the Green Budget sets out a number of potential actions on taxation and spending – examining driving-related tax, inheritance tax, corporation tax, the welfare cap and the apprenticeship

system. In setting out the options, this volume adds to a hugely comprehensive collection of policy analysis and knowledge published in Green Budget reports over many years.

Cumulatively, it remains central to the Nuffield Foundation's work to advance social well-being and to understand the foundations and pathways to a more just and inclusive society. Thank you to IFS and Citi for once again providing such timely and important analysis.

Tim Gardam
Chief Executive
Nuffield Foundation

Preface

Welcome to the IFS 2023 Green Budget.

Last year's edition was produced amidst the fallout from the September 2022 Growth Plan – known to you and me as the 'mini Budget'. This year's edition has, mercifully, been produced in calmer circumstances. The UK now looks to be past its inflationary peak. One key question is how quickly inflation continues to fall – not least because of the Prime Minister's promise to halve inflation by the end of the year – and when it will return all the way to the Bank of England's 2% target. This matters enormously for families' living standards and much else besides.

Looking more broadly, the UK economic and fiscal outlook remains highly challenging. A combination of sluggish growth prospects, elevated debt and higher interest rates continues to limit the Chancellor's fiscal room for manoeuvre. The Office for National Statistics has revised up its estimates of the UK's post-pandemic performance, meaning we no longer look like such an outlier internationally. Revenues are coming in higher than expected this year. This is good news. But the UK public finances are still in a parlous state, and the case for tax cuts at this time remains exceedingly weak – particularly as the government's 'true' fiscal position is almost certainly weaker than official forecasts suggest.

This is a thread running through much of this year's Green Budget. The medium-term fiscal forecasts – including whether or not debt is forecast to fall in five years' time, as required by the government's fiscal mandate – are predicated on *stated* government policy. Yet there are very good reasons to suppose that policy will not evolve as stated. For one, we can confidently assert that fuel duties will not rise with inflation next April, as the forecast assumes. The government might struggle to freeze personal tax thresholds through to 2027–28, given how big a tax rise that has turned out to be in a world of double-digit inflation. The spending totals pencilled in for after the next election look tight – perhaps implausibly so. And more generally, in the period since 2010, Chancellors have tended to spend the windfall from improvements in the fiscal outlook, but have allowed borrowing to rise when the outlook deteriorated. Given the various things the government has promised to do 'when the fiscal situation allows' (such as make the full-expensing policy permanent), a repeat of such asymmetric behaviour seems likely. That would have an upwards 'ratchet' effect on borrowing and debt.

This year's Green Budget covers a range of other pressing policy topics. We have examined the (large) fiscal implications of the NHS workforce plan – a plan which both major parties have signed up to, in effect committing an extra 2% of national income to the English NHS over 15 years. That will frame many future fiscal events and Green Budgets. We have looked at the UK training and skills policy landscape – an area where the potential benefits of

reforms must be balanced against the costs of adding to the near-constant policy churn suffered by the sector. We have dug into the detail of full expensing, where the case for making the policy permanent is finely balanced, but where official costings do not provide a helpful guide to the 'true' long-term fiscal costs. We have assessed the merits of public sector net worth as a fiscal target, and concluded that these are outweighed by the potential drawbacks. And with Dr Arun Advani of the University of Warwick, we have set out the issues with the UK's inheritance tax system and made the case for reform – reform which is urgently needed as inheritances grow increasingly economically and fiscally important.

We are delighted to continue our collaboration with Citi, now in its sixth year. We are grateful both for their financial support for the Green Budget and for their chapters on the global economic outlook and the outlook for the UK economy specifically. Both provide superb insights and vital 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. With the UK's economic challenges mounting, and with a general election due next year, we are delighted that this work could 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 (ES/T014334/1) underpins all our analysis in this volume and is gratefully acknowledged.

Data from the Labour Force Survey (2022) are available from the UK Data Service, as are the Wealth and Assets Survey (2006–20), Understanding Society (2009–21) and the British Household Panel Survey (1991–2009). The EU Labour Force Survey is available from Eurostat. The Employer Skills Survey is available from the Department for Education. 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

Citi Research & Global Insights

Citi focuses on delivering the highest quality economic, thematic, industry, and company research and insights to our clients globally. Citi is committed to maintaining the highest level of independence and objectivity in its proprietary research products and insights.

Citi

Citi is the world's most global bank with an on-the-ground presence in 95 countries, more than 100 million customers, and over 230,000 employees. Our global network gives us the ability to connect and do business in nearly 160 countries using both our local banking licenses and our on-the-ground expertise, including in-depth understanding of local politics, business, and economic conditions. Our global network also allows us to move the equivalent of Germany's GDP each day across borders, currencies and asset classes.

www.citigroup.com | @Citi

The Nuffield Foundation

The Nuffield Foundation is an independent charitable trust with a mission to advance social well-being. It funds research that informs social policy, primarily in Education, Welfare, and Justice. The Nuffield Foundation is the founder and co-funder of the Nuffield Council on Bioethics, the Ada Lovelace Institute and the Nuffield Family Justice Observatory.

The Nuffield Foundation has funded this project, but the views expressed are those of the authors and not necessarily the Foundation.

www.nuffieldfoundation.org | @NuffieldFound

Contents

1. Global economic outlook: how hard will we land?

Christian Schulz (Citi)

Key findings

1. **Global growth has so far remained relatively resilient through an extreme surge in inflation paired with one of the sharpest monetary tightening cycles in generations.** This suggests that both contracting supply and expanding demand contributed to rising prices and raises a key question for the coming 12 months: have central banks really managed a soft landing of the global economy in such a complex situation? Or is the world facing a hard landing because central banks overreacted to mostly supply-driven inflation, or because they still underestimate the shift in inflation dynamics and will have to go even further to break them?

2. **A soft landing is possible.** Global inflation has fallen from more than 9% in 2022 to below 6%. Energy disinflation may have run its course, and food inflation is falling. Remaining pandemic-era supply disruptions have faded, suggesting consumer goods will get cheaper. Once wages have adjusted to higher prices, services inflation should also fall. In Europe – but not in the US – we expect inflation to fall below 2% in the second half of 2024.

3. **Lower inflation, higher growth?** Supply-driven inflation lowers growth, so as it reverses it should stabilise demand while at the same time allowing central banks to cut interest rates. This makes a soft landing more likely, particularly in some emerging markets in Asia and South America, where growth prospects have brightened and central banks are already cutting rates. **But the path to a soft landing looks increasingly narrow – especially in the US and Europe.**

4. **Has the US battle against inflation only just begun?** In the US, inflation is expected to stay above 2% beyond 2024. Wage growth is not normalising, and growth and the housing market are picking up despite high interest rates. The risk that the Fed has not yet done enough is significant. **While the bar to significant further rate hikes is**

high, rates may have to stay high for longer to achieve the necessary cooling of growth and inflation.

5. **Even in weak-growth Europe, inflation may not return to target quickly.** Wage growth is set to remain high and services inflation usually moves in lockstep in both the Euro Area and the US. Wage growth would have to be absorbed by falling profit margins or by rising productivity growth. However, neither has been the norm in recent decades.

6. **Despite strong wage growth and fading inflation, we expect the Euro Area economy to shrink for the next three quarters.** Weak external demand, labour shortages, uncompetitive energy prices and the housing market are expected to weigh on growth before the full extent of the policy tightening has taken effect. **In contrast to the US, there is a significant risk that the European Central Bank has already overtightened.** If the Euro Area falls into a protracted recession, and deflationary tendencies return, the ECB would need to react quickly and decisively to avoid returning to the effective lower bound.

7. **Global recession?** Excluding China, we are now forecasting world GDP growth of less than 1% in 2024, fulfilling some definitions of a global recession. And for China we are not optimistic either. China's economy is struggling to gain momentum as the global manufacturing cycle weighs and structural weaknesses such as demographics and high debt combine with hesitant stimulus.

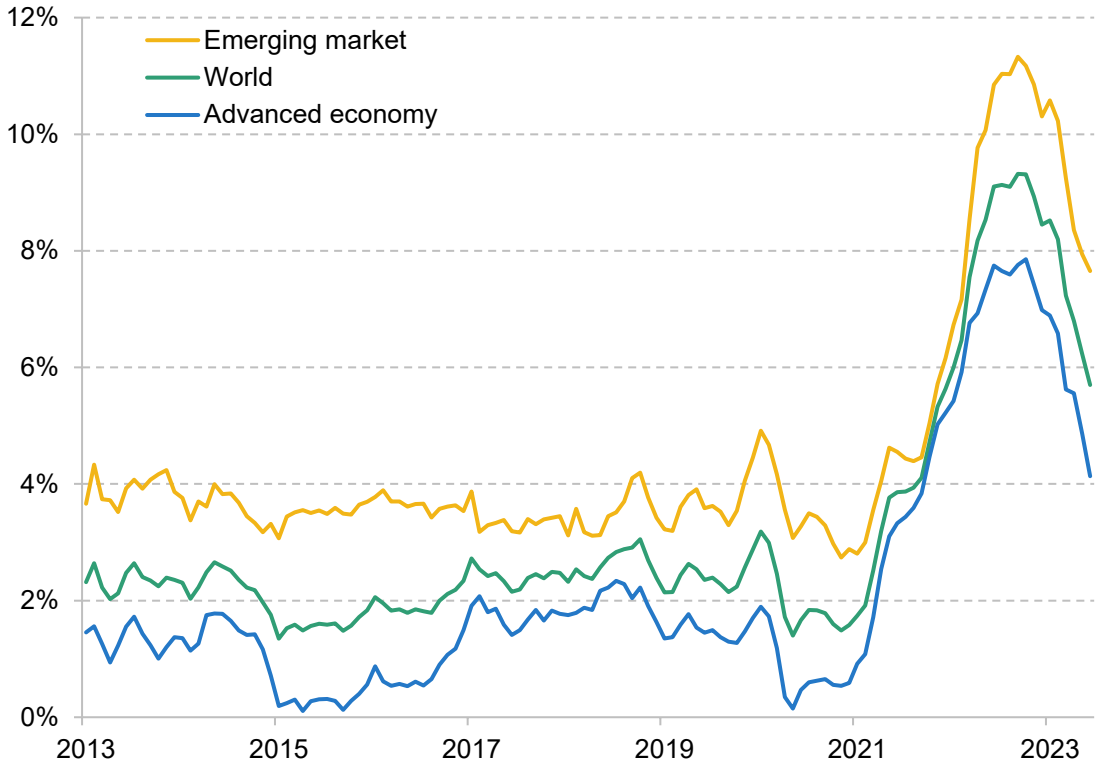
8. **Global interest rates are most likely to fall.** Rate hike cycles are coming to an end at 4% in the Euro Area, just over 5% in the UK and just under 6% in the US. Weak growth makes rate cuts most likely from Q2 2024, especially in Europe. In the US, the risks are skewed towards higher rates for longer, however.

1.1 Introduction

Even though global inflation rates have come down significantly since 2022, the fight against inflation continues to dominate the global economic policy agenda. At the time of the 2022 Green Budget, in October 2022, world inflation peaked at 9.3% year-on-year, more than three times higher than the pre-pandemic norm of around 3% (see Figure 1.1). By June 2023, it had fallen halfway back to the norm, and stood at just under 6%. Both the rise and decline were fairly uniform across advanced economies and emerging markets. In the former, inflation peaked in October 2022 at 8% and fell to just over 4% in June, 2 percentage points (ppt) above

'normal'. In emerging economies, inflation peaked at 11.3% in September 2022 and was by June back down to just under 8%, 4ppt above the norm of 4%. Even outliers such as Turkey have seen year-on-year inflation halve, from 80% to 40% over the same period.

Figure 1.1. World composite inflation (year-on-year %)



Source: Haver Analytics and Citi Research.

As we highlighted in chapter 1 of last year's Green Budget, the major drivers of the inflation surge – and subsequent reversal – were widespread supply-side factors, such as pandemic-era supply chain disruptions, labour force distortions, and more recently the repercussions of Russia's invasion of Ukraine for energy and food prices. This explains the strong global co-movement of inflation rates. Less clear is the role of demand. During the pandemic, many governments generously maintained or even increased corporate and household incomes, for example by sending out checks (US) or allowing employers to put employees on furlough (Europe), funded by aggressive government borrowing. This was facilitated by unprecedented central bank easing, especially asset purchases, and did not just allow households in some parts of the world to maintain large parts of spending (Europe) or even increase it (US) during the pandemic, but also to save large amounts and maintain spending beyond the end of the pandemic.

The high inflation rates caused by this combination of a series of large negative supply shocks and positive demand shocks risked becoming so persistent that they would dislodge inflation

expectations and thus perpetuate high inflation. Central banks therefore stepped in to anchor expectations, break the inflation surge and swiftly return inflation to target. With inflation rates now well into their decline in most parts of the world, we and most forecasters see global central bank interest rates close to the peak or even starting to reverse.

Global growth has remained resilient through the extreme surge in inflation paired with one of the sharpest monetary tightening cycles in generations, which suggests that both supply and demand contributed to rising prices. That raises the key question for the coming 12 months: have central banks really managed a soft landing of the global economy in such a complex situation? Or is the world facing a hard landing because central banks overreacted to mostly supply-driven inflation, and exaggerated concerns that monetary policymakers could lose credibility and inflation expectations could rise? Or do central banks still underestimate the shift in inflation dynamics, and will they therefore have to tighten even further to break them?

We begin in Section 1.2 by discussing how the easing of supply constraints, and the resilience of demand, point to a possible 'soft landing'. We then consider, in Section 1.3, the trends in the labour market and elsewhere which point to the risk of inflation (and interest rates) staying higher for longer. In Section 1.4, we consider the possibility that central banks have already gone too far. In Section 1.5, we examine how the outlook varies across regions, before finally presenting Citi's latest forecasts (Section 1.6) and concluding (Section 1.7).

1.2 Can we manage a soft landing?

Over the past three years, the world experienced a series of highly unusual supply disruptions and thus cost shocks.

Pandemic-induced supply shocks

First were the shocks triggered by the public health policy reaction to the pandemic, which largely affected goods inflation and have largely faded by now:

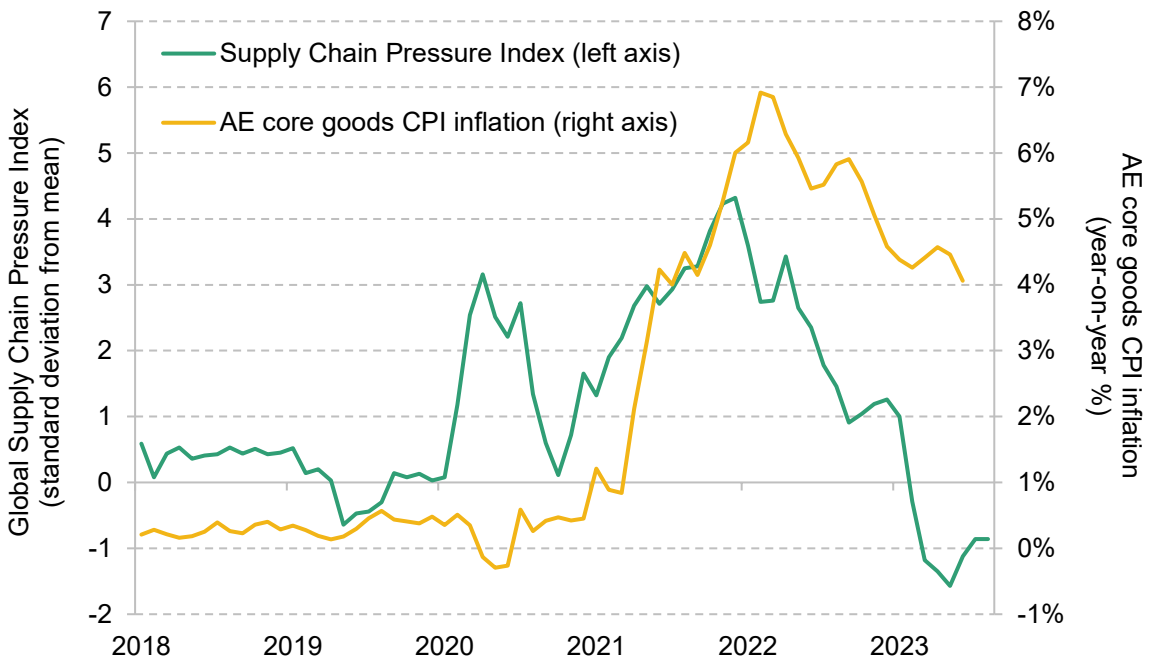
- The **global shipping market** has relaxed, with key freight cost indices well down on post-pandemic peaks and in some cases below pre-pandemic levels. The Baltic Dry Index, which measures daily rates of dry bulk carrier ships, is averaging 1142 so far this year, down 75% from the 2022 peak and actually 15% below the 2018–19 average. The Harper Petersen Index, which measures weekly container vessel spot chart rates, has averaged 1156 so far this year, which is still double the pre-pandemic average, but also down 75% from the 2022 peak, despite issues around the Panama Canal, for example.
- **Supplier lead times** are shortening substantially. In the US Institute for Supply Management (ISM) manufacturing index, for example, supplier lead times were lengthening

at their strongest pace since the 1970s in 2021, but are now shortening at the fastest rate since the global financial crisis in 2009.

- Where **inventories** of finished goods were depleted in 2021, now firms are reporting that they have too much in stock. In Germany's widely followed ifo manufacturing survey, for example, firms are now reporting inventories nearly as full relative to demand as they were during the first lockdown in 2020.

In summary, the Federal Reserve Bank of New York's Global Supply Chain Pressure Index has dropped from more than four standard deviations above its post-1997 average in late 2021 to a trough of one-and-a-half standard deviations below it this year (Figure 1.2). This has triggered a disinflation process in core goods, though one which is far from complete (also shown in Figure 1.2).

Figure 1.2. Global supply chain pressures (standard deviation from mean) and advanced economy core goods CPI inflation (year-on-year %)



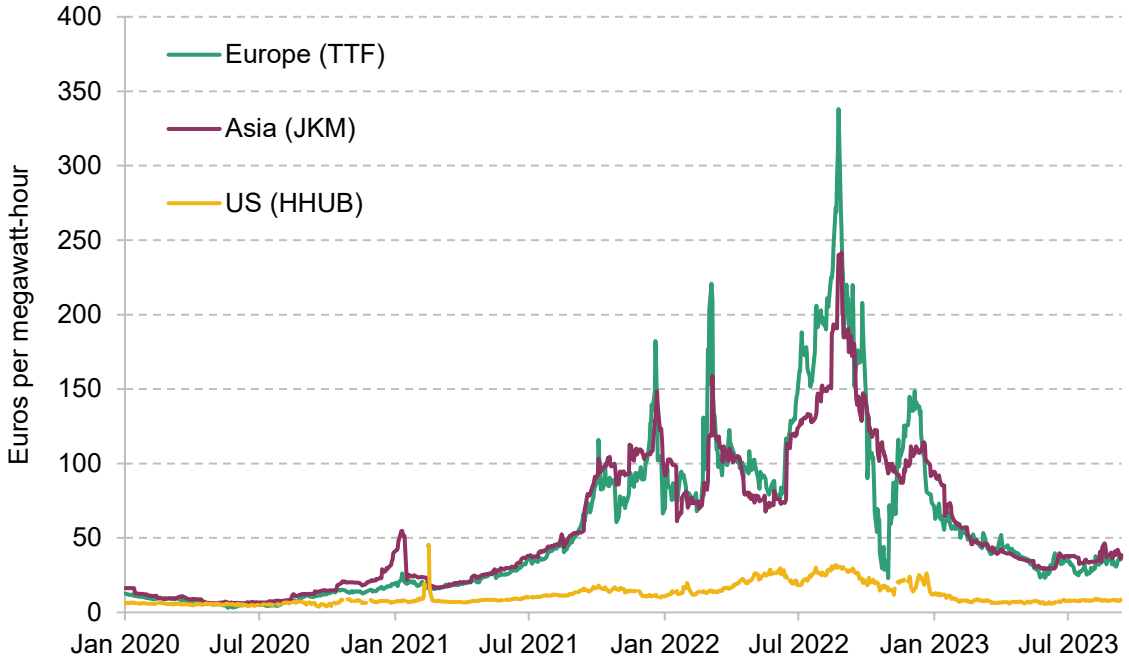
Note: AE = advanced economy and represents a weighted average of US, Euro Area, Japan and UK non-energy industrial goods inflation.

Source: New York Fed, Haver Analytics and Citi Research.

Energy shocks

Secondly – and quantitatively even more importantly – large parts of the world experienced energy shocks, aggravated by Russia's war in Ukraine. At the time of writing the 2022 IFS Green Budget, natural gas prices in Europe and Asia had risen up to twenty-fold compared with pre-pandemic levels (see Figure 1.3). One year on, they are still roughly double their pre-pandemic levels, but that is 90% lower than last year.

Figure 1.3. Wholesale spot natural gas prices (€/MWh): Europe, Asia and US



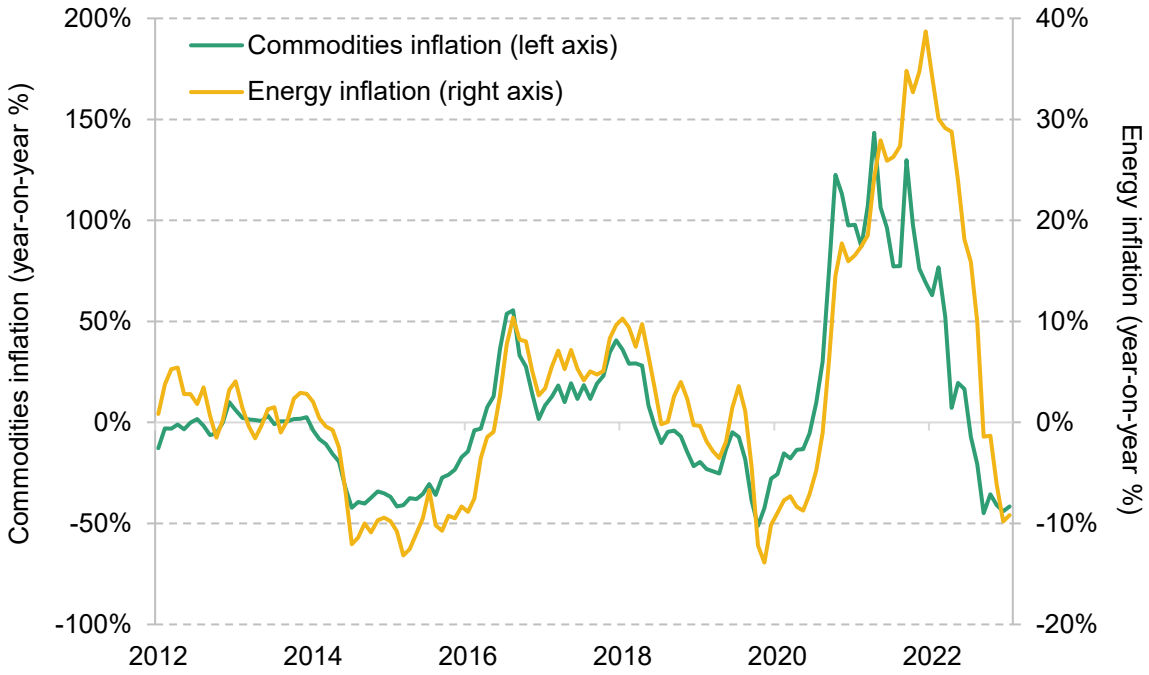
Note: TTF = Title Transfer Facility; JKM = Japan Korea Marker; HHUB = Henry Hub.

Source: BEA and Citi Research.

Unlike semiconductor production or global shipping capacity, energy supply has not been repaired, however. Most of the fall in prices is the result of adjustments in demand, which indicates a longer-lasting impact on the economy. The big gas pipelines from Russia to the EU remain mostly blocked, while global liquefied natural gas (LNG) supply is broadly unchanged since last year and is expected to remain so for several more years. Instead, gas consumption has fallen by 22% in the EU between January–May 2021 and January–May 2023, partly because of mild weather and partly because households, the state and businesses responded to high prices by cutting demand. So far, there is no sign of demand picking up again despite lower prices, suggesting that demand destruction is permanent for better (energy saving) or worse (production relocations).

The adjustments in wholesale energy markets are feeding through to consumers, albeit cushioned by long-term fixed-price contracts and government price caps. In the Euro Area, energy consumer price inflation, which also includes electricity and car fuels, peaked in October 2022 at 41.3% year-on-year. In the UK, it peaked at 59.3% in the same month. Since then, energy consumer price inflation in both the Euro Area and the UK is following the downwards trend already seen in Japan and the US (where year-on-year energy CPI inflation already peaked at 20.8% and 41.6% in March and June 2022, respectively). Across advanced economies, energy inflation is now in deeply negative territory (see Figure 1.4), but is unlikely to fall further.

Figure 1.4. Commodities and energy inflation (year-on-year %): advanced economies



Note: Energy inflation = weighted average of US, Euro Area, Japan and UK energy CPI inflation rates. Commodities inflation in USD, including energy commodities.

Source: HWWI, Eurostat, BLS, ONS, MIC and Citi Research.

In fact, energy prices will likely rise by more than the rest of the consumer basket over the coming years. Investment into new sources of energy to replace Russian energy and fulfil green transition targets will be paid for, at least in part, by users. In the EU alone, estimates suggest a need for around €600 billion (4% of GDP) of annual investment for the green transition (European Commission, 2023). Governments are likely to use price incentives to discourage the use of emission-heavy fossil fuels via CO_2 prices or emissions trading certificates. That will further add to the energy prices consumers face and may force central banks to run higher inflation rates in order to bring price growth excluding energy to below 2% in order to hit their inflation targets.

As an aside, whereas global trade ensures that inflation in energy commodities has been fairly similar across different regions (with the exception of US natural gas prices), the impact of energy *policies* on inflation will likely differ substantially across countries and regions. Energy prices have risen by only 7% since 2019 in Japan, by just over 30% in the US, but by nearly 40% in the Euro Area and nearly 50% in the UK. This partly reflects the differing political will to reduce the consumption of energy via price tools.

Food prices

Third, war has also led to an increase in global food prices. Ukraine is a major food exporter, but more importantly, energy prices more generally – and gas prices especially – tend to fuel food inflation via the rising cost of fertiliser production, for example. Food inflation peaked in the US at 13.5% shortly after energy inflation peaked. In the Euro Area and in the UK, food inflation peaked at just under 20% in March 2023, five months later than energy inflation, while in Japan food inflation fell for the first time this year in June, more than a year after the energy inflation peak.

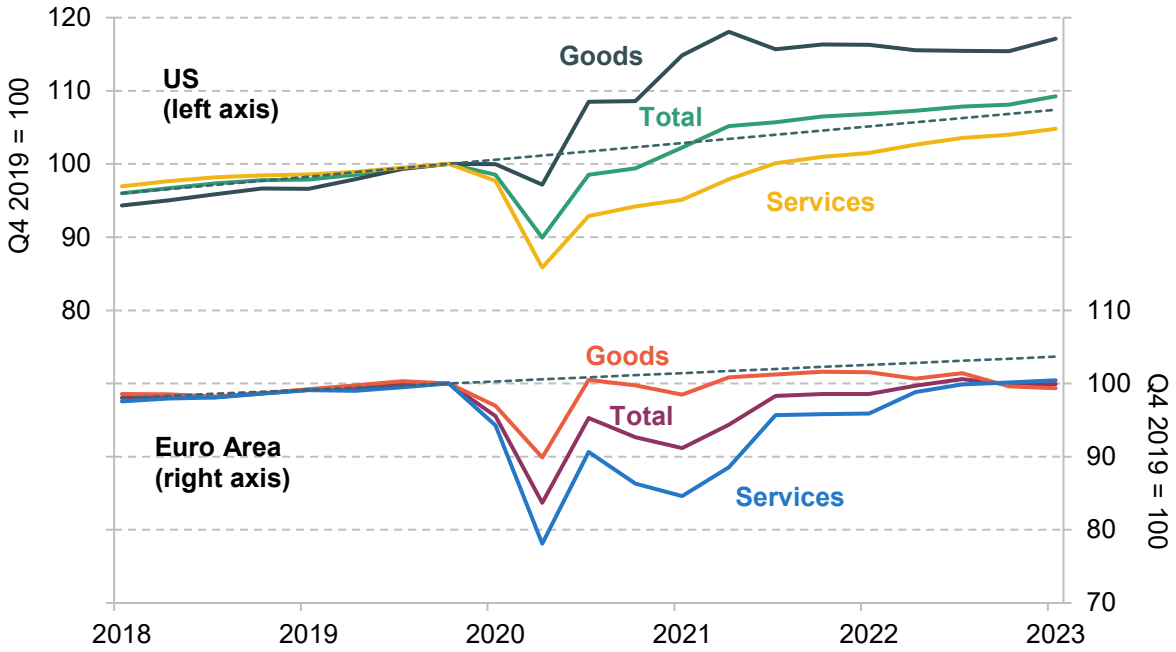
As with energy, we expect food inflation to be volatile and relatively high on average over the coming years. Climate change, but also specifically Russia's terminating the agreement over Ukrainian grain exports via the Black Sea or the impact of El Niño, could lead to new spikes. Despite that, prospects are for lower food price inflation in 2024, which matters greatly for households given that food and beverages account for between 10% (US) and 20% (Euro Area, Japan) of the consumer price basket (and more for lower-income households). It is worth highlighting that food is a much larger part of the consumer basket in many emerging economies, e.g. 38% in Russia and 46% in India (but not everywhere, with Brazil and South Africa on par with the Euro Area at 19%, for example). Of course, food staples differ from region to region, and so food inflation trends can diverge quite a bit. However, in developing and emerging economies, food prices are often also politically very sensitive. Volatile food prices can thus trigger political as well as economic instability.

The demand side

Fourth, the demand side has also experienced one-off shocks which are bound to fade quasi-automatically. During the pandemic, public health restrictions meant that households and companies were forced to buy goods instead of services. Especially where stimulus was strongly skewed towards supporting consumption rather than production, this spike in demand for goods occurred just as supply plunged, causing a large rise in inflation. With a delay, the surge in US demand also affected the rest of the world, amplified by the strong dollar.

Households do not buy durable goods such as televisions and fitness gear every year, however. With the end of lockdowns and travel disruptions, consumer demand is now rotating back to services (see Figure 1.5). In addition, rising interest rates tend to weigh on investment via tightening financing conditions, and therefore on demand for capital goods and consumer durables. Since services are far less traded than goods, this reduction in demand for goods has led to a global trade recession, which is weighing on tradeable sectors such as manufacturing, and the global manufacturing hubs such as China and Germany, relative to more services-exposed economies such as the US or France. These factors have added to the drag on core goods inflation, compounding the effects of easing supply constraints (see Figure 1.2 above).

Figure 1.5. Real-terms private consumption of goods and services: US and Euro Area



Note: Dotted lines denote pre-pandemic trends for total consumption.

Source: BEA and Citi Research.

Even services inflation may eventually come down more-or-less automatically, for three reasons. First, while services consumption cannot be shifted in time as easily as goods consumption (e.g. holiday season is every year), there are reasons to believe that tourism and concert visits are currently above their long-term trends after the pandemic and will eventually settle at lower levels. Airfares inflation may not stay as high as at the moment.

Second, energy and food are inputs in the services sector as well. Some services such as restaurants are directly exposed to rising food prices, for example, and others to energy prices, such as transport services, airfares or package holidays. In addition, service prices are more closely related to wage growth due to their higher labour-intensity relative to the goods sector. And workers are demanding higher wages to compensate for higher prices, which in turn could lead to higher prices.

Third, the current surge in wage growth to some degree reflects a catch-up to (energy) inflation. In many countries, at least some wages are indexed to inflation. Some governments (e.g. Germany, France) made one-off inflation compensation payments tax-free. Lower energy inflation will thus automatically drive wage inflation and thus, in turn, services inflation lower. In the Euro Area, a 10ppt swing in energy inflation tends to trigger a 1ppt swing in services inflation with a one-year lag. Between April 2020 and March 2022, Euro Area energy inflation rose by 50ppt, while services inflation rose by 5ppt between June 2021 and April 2023. If the

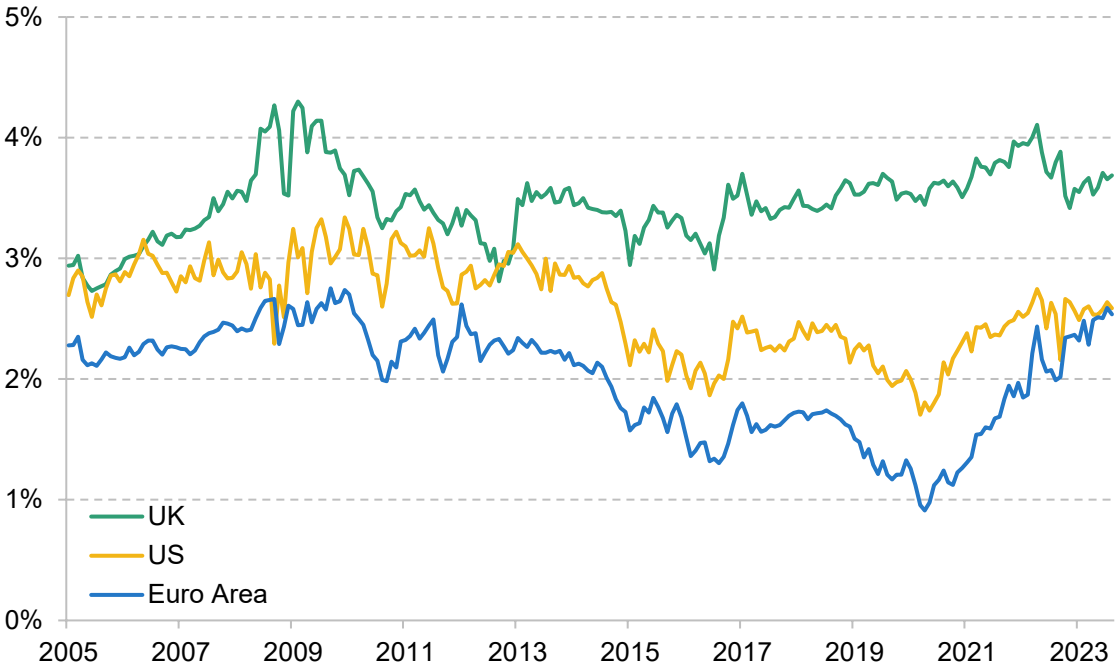
link between energy and services inflation is symmetric, services inflation would fall by 4.5ppt from September 2023 to July 2024, mirroring the 45ppt fall in energy inflation since September 2022. In that case, Euro Area headline inflation, for example, might be well below 2% by that stage.

Summing up

Our first scenario is that the global surge in inflation will result in a 'soft landing'. Household and market inflation expectations (see Figure 1.6) have risen by 50–150 basis points compared with pre-pandemic levels in advanced economies. In this scenario, central banks have responded adequately and appropriately by raising interest rates, for two reasons:

- First, central banks had to raise policy rates to match the rise in inflation expectations to avoid a real cut in expected borrowing costs. This avoided additional demand stimulus in an economy already suffering at least temporary supply constraints.
- Second, central banks had to insure the economy against a de-anchoring of inflation expectations above the target. In many emerging markets, central banks have less credibility in fighting inflation so they had to act earlier and more aggressively, while in advanced economies, higher credibility allowed a smoother profile.

Figure 1.6. Implied market expectation of annual inflation over the five years starting in five years' time: US, Euro Area and UK



Note: CPI in US and Euro area; RPI in UK.

Source: Bloomberg and Citi Research.

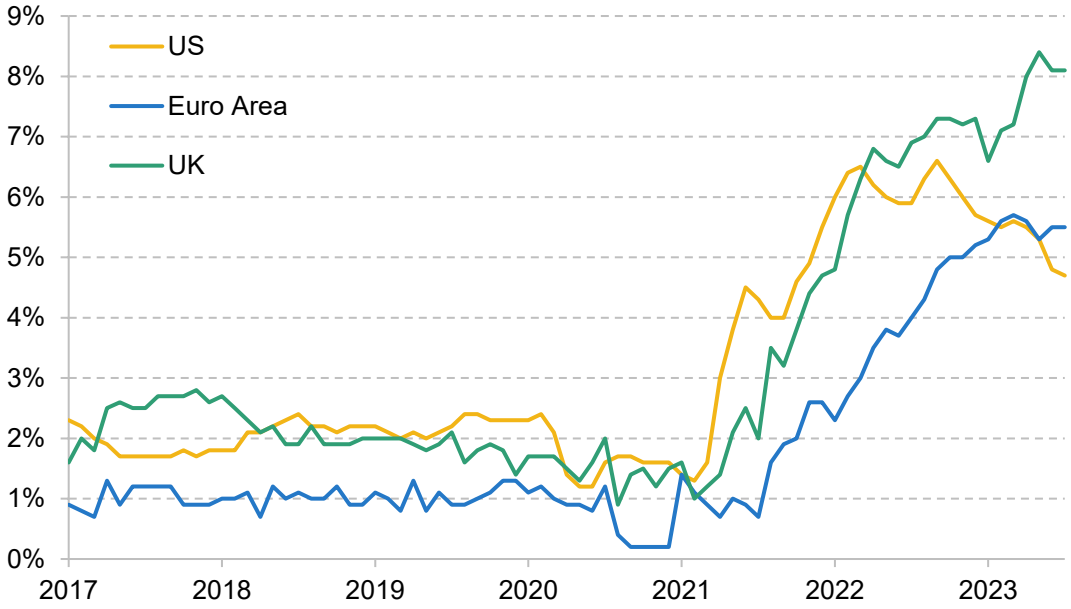
Now, as inflation rates are coming down and upside risks to inflation expectations are fading, central banks can start cutting interest rates back to neutral levels. At the same time, growth should resume or accelerate, because supply constraints are fading. By cutting interest rates at the right time, central banks can revive demand and achieve a 'soft landing'.

Clearly this is a very delicate balance to achieve. Central banks could easily cut rates too early, before the risk of de-anchoring inflation expectations is banished for good, or too late when the economy is already falling into a recession, which risks central banks returning rates to their lower bounds, powerless to stimulate economies further. We see risks of both scenarios and describe them in the following sections.

1.3 Or will inflation stay for longer?

As long as inflation rates have not fully returned to target with a prospect of remaining there, uncertainty remains about whether central banks have really done enough. Underlying inflation rates remain far above targets in most major advanced economies (see Figure 1.7), labour markets are still tight and growth is resilient in many parts of the world, especially in the US. Is it really enough to wait for fading supply shocks and demand distortions, in combination with the monetary tightening already done, to return inflation to target? And is this happening quickly enough to avoid a further rise in inflation expectations to uncomfortable, de-anchored levels? Or is it premature to call the end of the rate hike cycles and a soft landing of the global economy?

Figure 1.7. Core annual inflation rates: US, Euro Area and UK

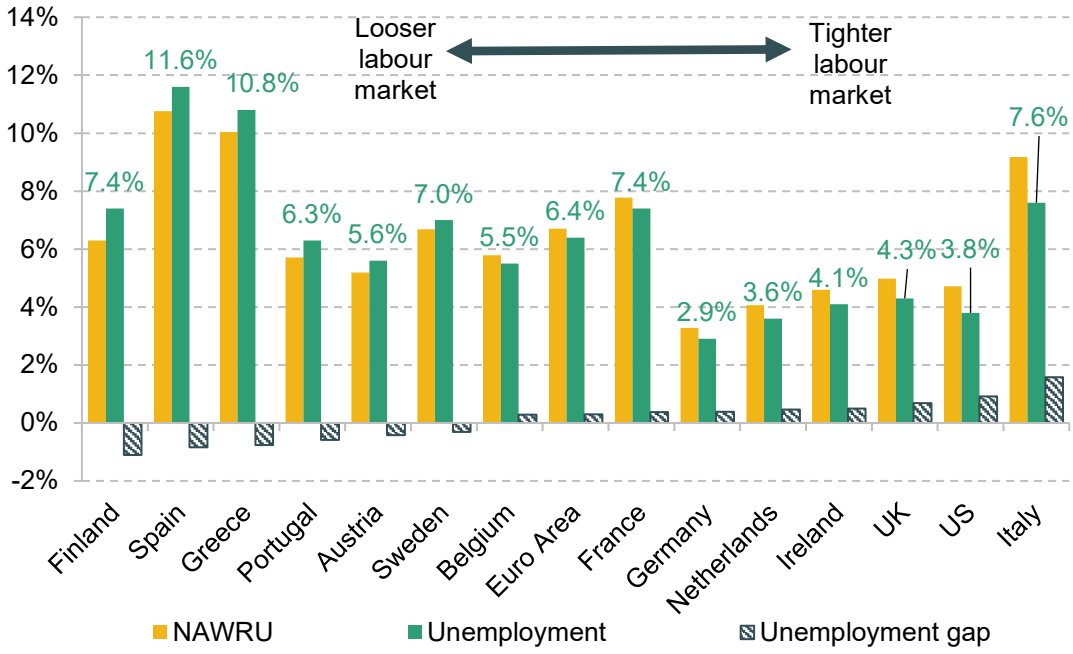


Source: BEA and Citi Research.

Tight labour markets

Unemployment rates are at or near record lows in most advanced economies (Figure 1.8). Very low slack in an economy can be a source of inflationary pressures. In addition, it increases the risk that any inflationary surge, whether caused by demand or supply shocks, causes inflation expectations to de-anchor upwards. Unemployment rates were already very low before the pandemic hit in early 2020, but since then, they have fallen even further. In the US and UK, unemployment rates fell to their lowest levels since the 1960s at 3.5% and 3.6%, respectively, in early Spring 2023, but have since rebounded to just under and just over 4%, respectively. Euro Area unemployment fell to its lowest level since the currency zone was formed, at 6.4% in July.

Figure 1.8. Unemployment rates and neutral rate estimates: US and Europe



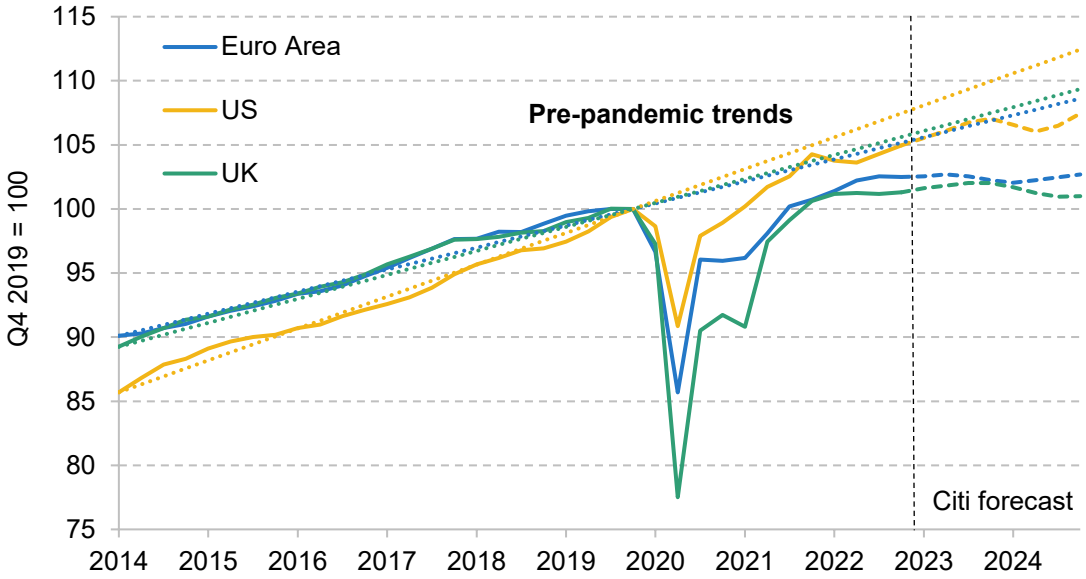
Source: EU Commission, Eurostat and Citi Research.

In the majority of key western economies, unemployment rates are below the estimates of the non-accelerating inflation (NAIRU) or non-accelerating wage (NAWRU) levels. Labour markets are tight enough to generate inflationary pressures. The EU Commission, for example, estimates that the Euro Area neutral unemployment rate (NAWRU) is currently at 6.7%, 0.3ppt above the latest unemployment rate. For the US, the neutral rate estimate is at 4.7% compared with an August rate of 3.8%, and for the UK at 5.0% compared with an actual rate of 4.3% in June. These neutral rate estimates may be debatable, but inflation and wage growth have indeed surged.

It is striking that these low unemployment rates have been reached despite the fact that, with few exceptions, GDP growth since 2019 has averaged below the pre-pandemic trend and therefore

arguably below the pre-pandemic potential (see Figure 1.9). Below-potential growth should lead to a loosening of the labour market, not to a tightening.

Figure 1.9. Real GDP and 2014–19 trend: US, Euro Area and UK



Source: BEA, Eurostat, ONS and Citi Research.

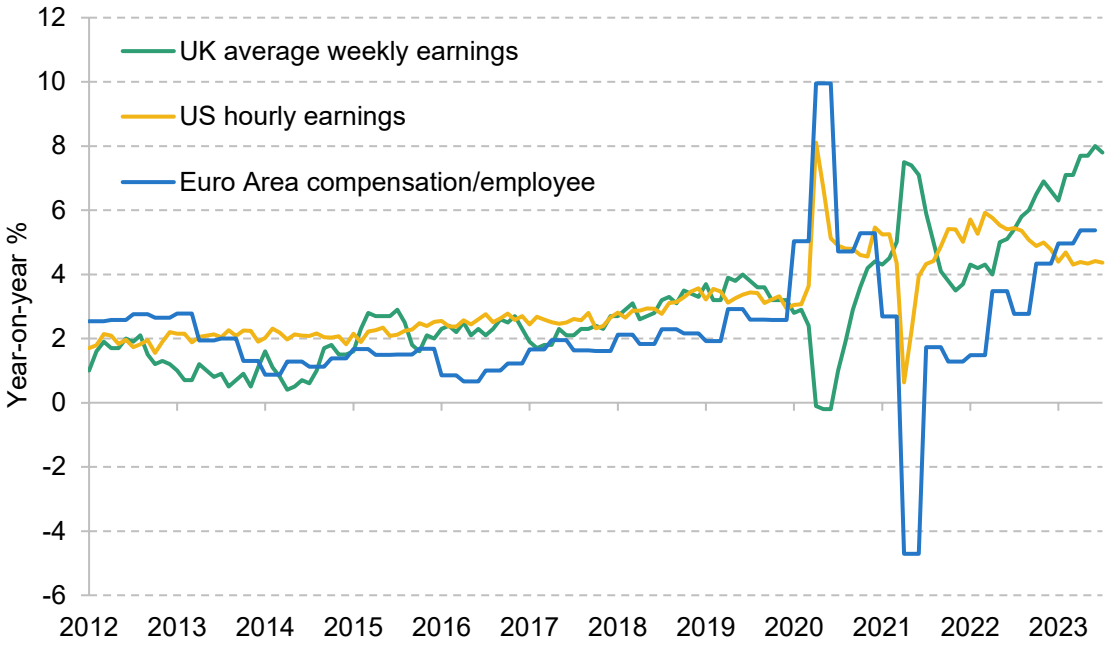
A number of factors can explain this labour market conundrum:

- **Drop in labour supply.** Especially in the US and the UK, people left the labour force during the pandemic and are now slow to return. This could reflect that the temporary boost in asset prices allowed older workers to retire earlier, but also a growing number of long-term sicknesses, e g. respiratory conditions forcing workers out of their jobs. In the Euro Area, the workforce returned to trend quickly. In fact, to qualify for pandemic support (e.g. furloughing), some workers in the Euro Area might even have left informal work arrangements and bolstered the registered labour force. Sick leave levels are still very high in some parts of the Euro Area.
- **Labour hoarding.** Output per worker has dropped mostly in sectors that faced weak demand during the pandemic, such as transportation and hospitality. Employers may have hung on to some workers despite a lack of activity for fear of missing out on an activity surge when demand normalised. This may have been helped by low interest rates allowing firms to cover temporary losses at low costs, but also by surging prices which allowed them to raise margins. On a forward-looking basis, hoarding may now migrate to the manufacturing sector where hiring has not slowed as much as plunging demand would suggest.
- **Labour-intensive services-led growth.** Hoarded labour may not be enough to absorb all of the rebound in services activity. For example, in tourist hotspots such as the Mediterranean,

many new workers had to be hired. Many of the workers who would normally be available for summer work in hotels may now be tied up elsewhere, however – for example, in the health sector.

Some of these factors may turn out to be temporary, others permanent. In the meantime, however, tight labour markets are likely to have contributed to the surge in global wage growth. In the UK, average weekly earnings growth has surged to nearly 8% year-on-year in Spring 2023; in the Euro Area, compensation per employee was rising by nearly 5% in Q1; and in the US, average hourly earnings growth seems to be settling at around 4.5% year-on-year (Figure 1.10). These levels are far higher than trend productivity growth of around 1%, and thus boost unit labour costs and, on an ongoing basis, would not be consistent with target rates of inflation.

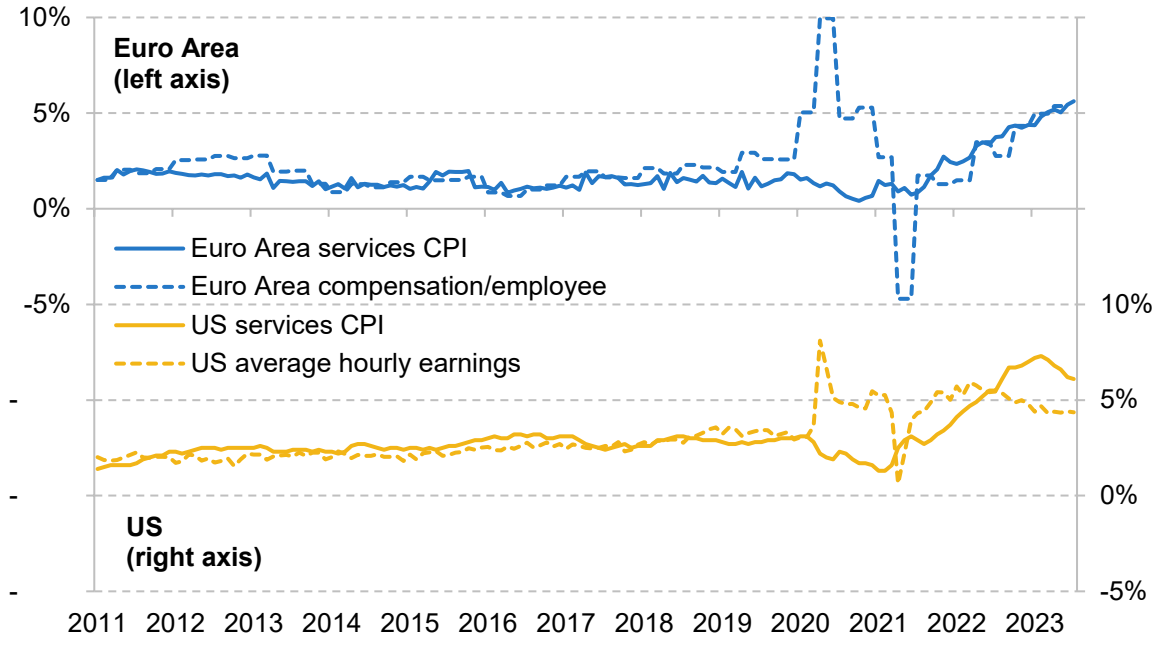
Figure 1.10. Annual wage growth: US, Euro Area and UK



Source: BLS, ONS, ECB and Citi Research.

Strong wage growth does not have to be an inflation concern. For example, it can be absorbed by falling profit margins or by rising productivity growth. However, neither has been the norm in recent decades, so that wage growth and services inflation (the part of the consumer basket with the highest labour content and therefore wage exposure) have usually moved in lockstep in both the Euro Area and the US (Figure 1.11). That the relationship seems to have broken down at least in the US more recently may be due more to the violence of swings in productivity than to a fundamental decoupling of wage growth and services inflation. Unless there is an ongoing income distribution process from capital to labour, without a return of wages to target-consistent levels of around 3%, services inflation and therefore also overall inflation may not return to target either.

Figure 1.11. Annual wage growth and services inflation (year-on-year %): US and Euro Area



Source: BLS, ECB and Citi Research.

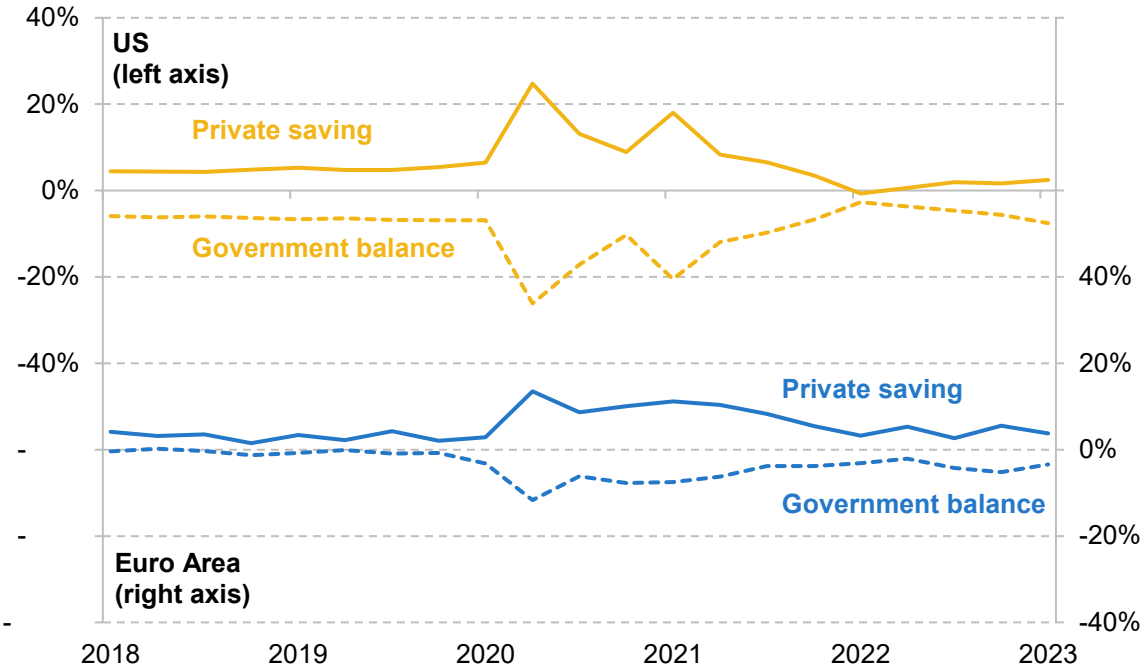
There is some evidence that job creation is slowing in the US and the Euro Area, but not yet enough to lead to a build-up in slack which would in turn weigh on wage growth. Indeed, the European Central Bank forecast in June that with the market-implied policy path, the Euro Area unemployment rate would continue to edge lower by 0.1ppt per year, marking new all-time lows on the way. Also in June, the Federal Reserve forecast the US unemployment rate to rise somewhat from below 4% to slightly above in 2024 and 2025.

Factors supporting growth

A range of factors could support growth in the coming quarters and delay the emergence of slack and therefore delay the normalisation of wage growth and inflation.

- **First, fiscal policy is not substantially restrictive** in many advanced economies. Budget deficits may be falling, but that largely reflects the phasing-out of subsidies to households and businesses to help with pandemic consequences and high energy costs. Since both factors have diminished, phasing out the support should be demand-neutral. In addition, some investment programmes, such as the EU's NextGenerationEU programme or the US Inflation Reduction Act, carry on. Finance ministers' 2024 budgets are mostly neutral or slightly restrictive. This is helped by the fact that many governments have lengthened the maturity profile of their debt during the low-interest-rate period and are therefore not immediately impacted by the rise in short-term borrowing costs.

Figure 1.12. Government balance and private sector net saving (% of GDP): US and Euro Area



Source: BLS, Eurostat and Citi Research.

- **Second, central bank balance sheets support growth.** Central banks inadvertently counteracted the maturity lengthening of government debt by buying up large amounts of bonds since 2008, essentially swapping long-term bonds into overnight borrowing from banks. Those purchases were funded by the creation of reserves at the central bank (typically) remunerated at the central bank policy rate. Now that market interest rates are rising, this is leading to large central bank losses. The value of the bonds is falling (although most central banks do not mark to market), while the interest payments on reserves are soaring. The potential impact is significant. Bank reserves at the central bank amount to 20% of GDP in the US, 26% of GDP in the Euro Area, 58% of GDP in Switzerland[1] and 92% of GDP in Japan. With interest rates on these up more than 5ppt in the US, 4ppt in the Euro Area and almost 3ppt in Switzerland (although so far not at all in Japan), and with limited matching increase in interest income on the bonds purchased during the quantitative easing (QE) period, the outflows to banks (and thus ultimately to the private economy) could easily be worth around 1% of GDP. With the notable exception of the UK, central banks cannot automatically pass on these losses to finance ministries. Instead, they are starting to accumulate negative equity positions which they will then recover over time by cutting the

[1] The Swiss National Bank (SNB, the central bank of Switzerland) made a loss of CHF132 billion in 2022. However, in this specific case, the SNB was able to absorb the loss without 'printing money' because it had built large buffers from past profits. That is not the case for many other central banks, however.

dividends they pay to finance ministries. In the meantime, however, central banks fund their losses by monetising public debt or 'printing money'. Central banks are partly responding by reducing the size of their balance sheets or stopping interest payments on some reserves,[2] but the process is not quick enough to stop the outflow immediately.

- **Third, the large fiscal response to the pandemic is still supporting growth.** During the pandemic, households and companies built up enormous savings, which mirror the deficits of government (see Figure 1.12). In nominal terms, these savings are still large now and support spending, although in many places, such as the US, saving rates have plunged below pre-pandemic levels, suggesting that some dissaving is going on. Once that stops, normalisation will ultimately start weighing on spending. This could be offset by ongoing public investment programmes created in the wake of the pandemic, such as the EU's €800 billion NextGenerationEU programme or the US Inflation Reduction Act.

Summing up

It is plausible, in our view, that central banks and markets underestimate the persistence of the inflation surge. Underlying inflation rates remain above target in most advanced economies, and while central banks have raised interest rates, demand growth is not slowing everywhere. In the US, for example, GDP growth seems to be accelerating recently rather than decelerating (see Section 1.5). Labour markets remain tight, wage growth elevated.

Some of the supportive factors, such as pent-up savings and legacy fiscal support, may wane eventually, but there is a risk that they boost growth long enough for households, firms and government to get used to high inflation. The absence of slack means central bankers have less room for manoeuvre to look through temporary shocks, as former Bank of England Governor Mark Carney explained in his 2017 'lambda framework' on the Bank's reaction to the EU referendum (Carney, 2017). If inflation fails to come down and slack does not rise, central banks may have to keep rates high for longer or even hike further than markets or central bankers are currently anticipating until growth slows enough to rebalance demand and supply, which would most likely involve a significant recession or 'hard landing'.

1.4 Or has monetary policy overreacted?

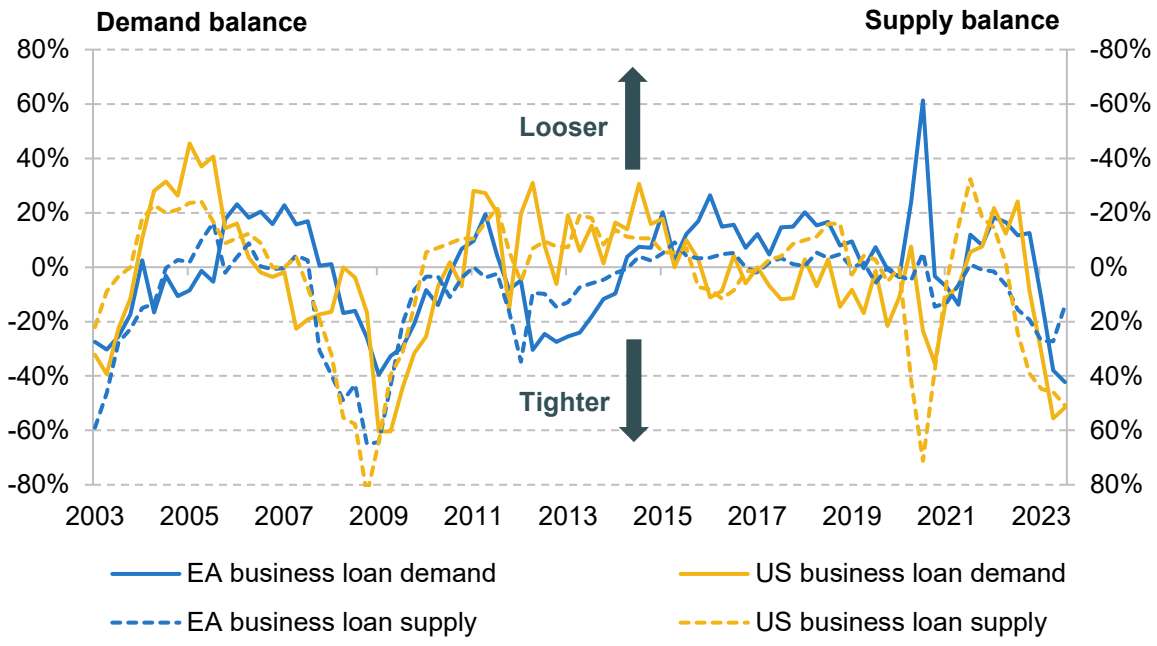
Even though most central bankers will not acknowledge it in their quest to return inflation to target, there is also a significant risk that they will go too far. In fact, monetary tightening may have gone too far already, which may show not just in deep recessions but also in permanent losses of income. We see at least three areas of concern.

[2] In July 2023, the European Central Bank (ECB) decided to stop remunerating required reserves, and previously it had already cut remuneration on government account balances at the ECB.

Credit tightening

First, there are signs of a **significant tightening in credit demand and supply**. The sharp rise in interest rates has triggered a sharp drop in loan demand by households and businesses. Business loan demand in both the US and the Euro Area was contracting at the fastest pace since 2008–09 this summer according to central bank surveys of banks. For a tense moment in March of this year, when several US regional banks failed, it also looked like credit supply could be subject to a rather violent tightening. However, unlike in 2007–08, US authorities managed to bring the crisis under control. Still, credit supply was still tightening at a much more rapid pace in the US than in the Euro Area, which has not experienced a similar crisis so far. In fact, in the Euro Area, the pace of credit supply tightening appeared to ease in the summer (Figure 1.13). Citi estimates suggest that both economies are set to face credit impulses usually associated with a 1–2% drop in GDP versus the baseline 12–18 months later (Sheets, Sockin and Langlois, 2023).

Figure 1.13. Business loan demand and supply: US and Euro Area



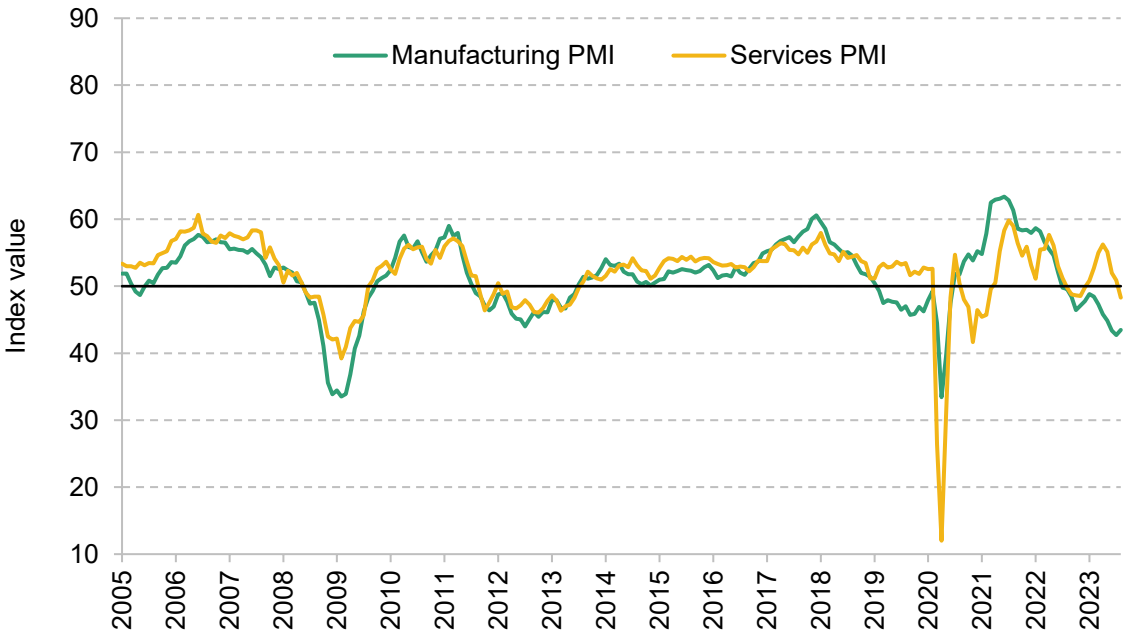
Source: ECB's Bank Lending Survey, Federal Reserve's Senior Loan Officer Survey and Citi Research.

So far, higher interest rates and tighter credit conditions have not led to a major increase in bankruptcies. Excess savings from the pandemic may help companies avoid insolvency for the time being. However, EU-level data suggest some acceleration in bankruptcies in financially more challenged economies such as Spain (although national data paint a less worrying picture). Besides compounding weaker credit supply via the losses incurred by banks, rising bankruptcies, if they occurred, could also quite suddenly trigger mass redundancies.

Slowing growth

Second, there are already signs that **economic growth is slowing** sharply in some regions and sectors. For example, the global manufacturing Purchasing Managers' Index (PMI) has been in contractionary territory since September 2022, and in the Euro Area in particular, manufacturing PMIs are at lower levels than during the 2011–12 sovereign debt crisis (see Figure 1.14). More recently, the global services PMI has also slowed as weakness spreads from manufacturing. The labour-intensive services sector is much more critical for job markets than manufacturing and could bring the surprising resilience in hiring to an end.

Figure 1.14. Purchasing managers' indices: Euro Area



Note: A value greater than 50 represents an expansion.

Source: S&P Global and Citi Research.

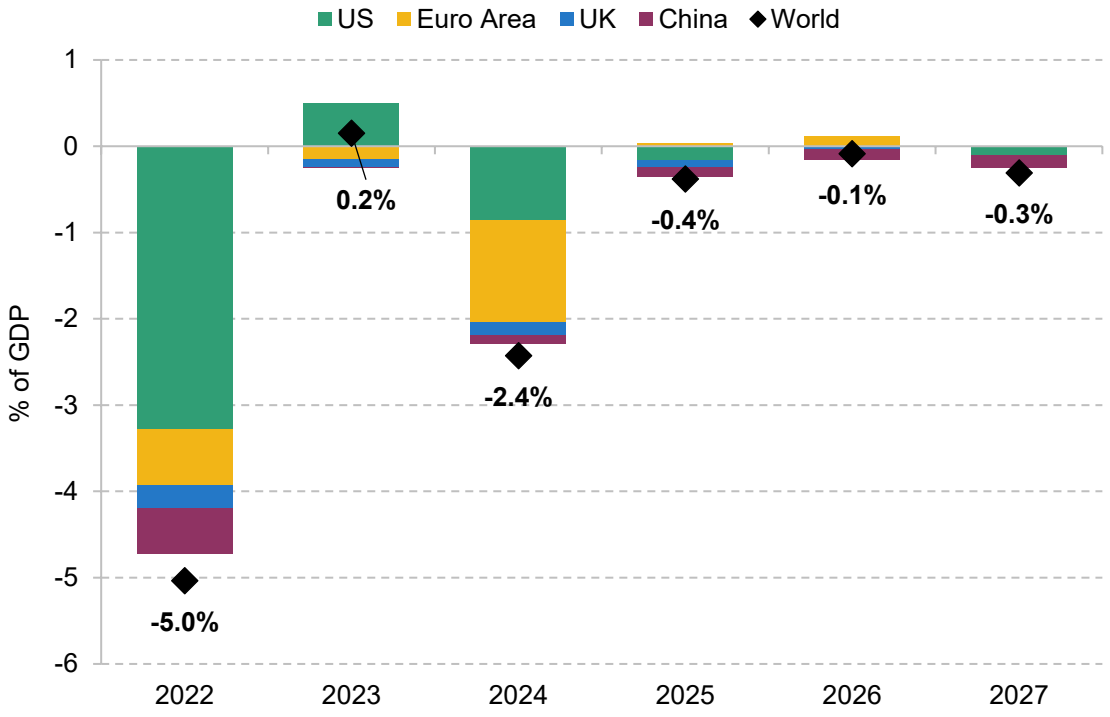
Fiscal retrenchment

Third, **governments may be forced to retrench** due to political blockades or restrictive fiscal rules.

- In the US, Congress has been split since the mid-term elections, with a Republican majority in the House of Representatives and a Democratic majority in the Senate. The Biden administration passed the important Inflation Reduction Act just before that and was able to get the debt ceiling raised until after the 2024 presidential elections, but fiscal room is now severely constrained.
- In the Euro Area, fiscal rebalancing will only start in earnest in 2024 as governments phase out their energy price support packages and remaining pandemic support (see Figure 1.15).

This is likely to be neutral for growth as the fiscal tightening is offset by the reversal of the terms-of-trade shock, just like the US tightening in 2022 was largely neutral as it was offset by the end of health policy measures. However, Euro Area governments will – at least to some extent – also be constrained by the reinstatement of the currency union's fiscal rules. There is an ongoing debate on how the rules will be implemented, but in particular the rule limiting member states' borrowing to 3% of GDP will not change given that it is written in the EU Treaty. On current plans and projections, most major Euro Area economies will miss the target in 2024, suggesting a risk that they will come under some EU Commission tutelage (excessive deficit procedure) to precipitate fiscal rebalancing.

Figure 1.15. Fiscal impulse (% of GDP): selected economies



Note: The fiscal impulse is here defined as the change in the cyclically adjusted government balance. A positive figure indicates a fiscal expansion, and a negative number a fiscal tightening.

Source: National statistical offices and Citi Research.

Summing up

Our third scenario is that central banks have overreacted to an ultimately temporary supply shock. Growth and labour markets may look resilient for now, but monetary policy famously works with long and variable lags. Although so far banks and the wider financial system have proved more resilient than in 2008, the credit cycle is cooling at its fastest rate since then. Having overshot their inflation targets for a protracted period of time, central bankers may now lean towards tolerating undershoots in order to restore lost credibility. That makes overtightening a likely, perhaps even intended, outcome. The fact that key economies such as the

US are holding up relatively well despite the unprecedented rate hike cycle could be misleading, and a hard landing could already be baked in the cake, as central bankers will be late to react to inflation undershooting target.

If central banks have gone too far, economies might be heading for deep recession and a sharp fall in inflation rates over the coming year. Even a return of the deflationary tendencies of the pre-pandemic period cannot be ruled out. That could return central banks to the effective lower bound of their policy spectrum and thus being unable to stimulate the economy. If fiscal policy also fails to respond, a return of 'secular stagnation' is plausible.

1.5 Regional outlook: too much tightening or too little?

Having outlined the three key scenarios, we now turn to where they might be most likely to play out. Global growth and inflation swings over the past few years were largely driven by common factors such as the pandemic and the policy response to it, or the repercussions of Russia's military attack on Ukraine. And the starting point going into the crisis was ostensibly similar across many major economies after an extended period of low but stable growth, low unemployment, low inflation and low interest rates. However, by now, cyclical positions in the world's largest economic blocs – the US, China and the EU – are different. So too, therefore, are the potentially narrow paths to a soft landing and sustainable growth with inflation at target. For different reasons, we expect very weak growth in the world's largest economies in 2024, with global GDP growth slowing from an already weak 2.3% this year to just 1.7% next. Excluding China, growth may be below 1% and thus fulfil some definitions of a global recession and a 'hard landing'. But within that, the balance of risk between overdoing the fight against inflation or not doing enough is tilted in different directions, in our view.

US: more likely to have not tightened enough

Since March 2022, the US Federal Reserve has hiked its policy rate from 0–0.25% to 5.25–5.5%, the most extensive rate hike cycle since the late 1970s. The level of policy rates in real terms is similarly high to that in 2007. On any measure, US monetary policy is restrictive and got there faster than in a very long time. However, so far, the recession that usually follows such a tightening, and has been signalled by the inverted US yield curve for nearly two years, has not materialised.

Despite resilient growth, inflation dynamics seem to be normalising. Headline annual inflation fell from a peak of more than 9% in June 2022 to 3% a year later before rebounding due to the latest rise in oil prices. Core inflation has been steadily receding from a peak of 6.6% in

September 2022 to 4.3% in August 2023 and seasonally adjusted three-month annualised inflation excluding energy dropped to 3% in August, suggesting further declines ahead. The labour market is showing signs of loosening, with monthly jobs growth averaging just 150,000 over the summer, normally consistent with stable unemployment. A rebound in participation has actually raised the unemployment rate from a trough of 3.4% in April to 3.8% in August 2023. The US could be on track for a soft landing.

However, there are also some concerning signs, which could suggest the Fed has not done enough: wage growth troughed at 3.7% on a three-month over three-month annualised basis in April, above the 3% level consistent with 2% inflation and 1% productivity growth, and has been accelerating to nearly 5% again over the summer. GDP growth seems to be accelerating, with strengthening demand spreading from the services sector to goods spending.

For now, we still expect US GDP growth to weaken, including a recession in Q2 and Q3 2024, and inflation to return to target. GDP growth should slow sharply from 2.1% in 2023 to just 0.3% in 2024, before rebounding to 2.4% in 2025. We expect the Fed to raise rates until reaching a terminal policy range of 5.5–5.75% and then to cut rates from Q2 2024. However, risks are skewed towards upside surprises on growth and inflation and more persistent policy restriction. While the bar for the Fed to react with even higher policy rates is high, interest rates may stay high for even longer than markets, households and firms currently expect. It may still take a significantly deeper recession than we currently predict to return price stability in the US.

Given the deep political divisions in the US, uncertainty around upcoming 2024 US presidential elections could already have an impact on the economic outlook before the vote takes place. However, the impact could be larger on the rest of the world than on the US itself, given the outsized role of the US President in foreign policy and the potentially very different world views leading Republican contenders have from the current administration. A Republican administration could once again focus on balancing bilateral US trade relationships and reduce or withdraw security support for its allies, in particular in Europe.

Euro Area: more likely to have overtightened

The Euro Area economy remains in the cross-currents of the pandemic aftermath, the war in Ukraine and aggressive monetary tightening. Over the past year, both manufacturing and services activity were bolstered by pent-up demand from the pandemic, but restrained by a lack of supply, causing some inflationary pressures. However, this pent-up demand has increasingly run its course. The energy crisis triggered by Russia's war in Ukraine eroded real incomes and corporate margins, and while Europe has made progress in weaning itself off Russian energy and the risk of supply disruptions is lower, energy supply could be permanently more uncertain and more expensive than previously expected.

In the face of these repeated large shocks, the Euro Area economy was surprisingly resilient in the first half of the year. And with rising wage growth, a resilient labour market and falling inflation underpinning real income gains for households, the European Central Bank (ECB) and the EU Commission see the chance of a pick-up in activity. Unfortunately, however, there is no sign yet that growth is picking up. On the contrary, economic sentiment – for example, the purchasing managers' indices – has fallen into recession territory and 'hard data' such as retail sales, trade or industrial production also show an economy shifting into reverse. We expect the economy to shrink moderately for the rest of this year and early next year, and to struggle for momentum thereafter. That yields 0.3% GDP growth this year, –0.1% in 2024 and 1.2% in 2025.

The growth weakness could be blamed on the ongoing impact of last year's energy shock, China's disappointing reopening and the globally weak manufacturing cycle. More recently, the headwinds seem to be spreading from the trade- and investment-exposed manufacturing sector to the larger and more labour-intensive services sector. And while wage growth has accelerated and the labour market remains resilient with unemployment at all-time lows, growing economic uncertainty may also start to undermine consumer confidence. Inflation has halved from double-digit territory, and the seasonally adjusted annualised Harmonised Index of Consumer Prices (HICP) excluding energy at 4% in July suggests further declines ahead. However, although wages are now rising faster than prices, households may hold back on spending.

The European Central Bank reacted to the sharp rise in inflation to 10% in late 2022 first by phasing out its asset purchases, then by hiking the policy rate from –0.5% to +4% between July 2022 and September 2023. And while progress in the fight against inflation and weakening growth (as well as the sheer cost of rate hikes for the ECB, as it pays interest on 3.7 trillion of bank reserves but does not generate much extra income on its €5 trillion portfolio of bond purchases) probably mean that the bar to more ECB rate hikes is now very high, the ECB's focus on spot inflation makes imminent rate cuts unlikely. In fact, the ECB may tighten monetary conditions further by accelerating the run-off of the asset portfolio in the coming months (most likely by ending reinvestments of its €1.7 trillion pandemic emergency purchase programme).

With the economy already shrinking and the ECB still tightening policy, the risk of overtightening seems significant. The ECB twice made similar errors when it was the last major central bank to hike before the global financial crisis in April 2008 and also while the Euro Area sovereign debt crisis brewed in early 2011. Inflation and wage growth are high, but are lagging variables of the economic cycle. Overtightening is particularly dangerous in the case of the Euro Area as low potential growth and a low real neutral rate pose the risk that the ECB could quickly run out of room to stimulate the economy. In addition, high levels of public debt and strict fiscal rules could also curb the ability of fiscal policy to stimulate the economy, just like they did before the pandemic.

China: necessary belt-tightening or 'Japanification'?

China is facing an altogether different challenge from the US or Europe, with growth and inflation too low rather than too high. The economic situation of the world's second-largest national economy looks increasingly concerning. After just 3% real GDP growth in 2022, as the government continued to pursue a zero-COVID policy, the economy accelerated somewhat in early 2023 after public health measures had been phased out, with near 9% annualised growth in Q1. However, in the spring, the economy slowed again to 3.5% annualised in Q2.

It is plausible that China's potential growth rate is falling. Productivity gains are harder to achieve as the economy matures and demographic factors increasingly limit the supply of new workers. The economy has built-up imbalances – for example, in the real estate sector and in local government finances. Total economy (public and private) debt is rising incessantly and reached nearly 300% of GDP last year. One view is that China needs belt-tightening to ensure a gradual return to more sustainable debt levels.

An alternative view, however, is that Chinese authorities are running excessively tight policy. Given falling CPI inflation, Chinese policy rates rose by around 250bps between September 2022 and September 2023 in real terms, even though the economy has slowed. Unemployment, especially youth unemployment, was rising sharply before authorities stopped publishing data. Producer prices have been in deflation for a while, and most recently consumer price inflation has followed. By failing to respond decisively, the People's Bank of China risks 'Japanification', where low inflation and wage growth render monetary policy powerless to stimulate the economy.

In this environment, Chinese activity growth is expected to remain disappointing. We forecast 5.0% GDP growth for 2023 and 4.6% for 2024.

1.6 Citi forecasts, then and now

Every year, the IFS Green Budget is an opportunity to look back at forecast performance. In the Green Budget 2022 we warned that growth would slow sharply – and it did, albeit not by as much as feared. Real global GDP growth at current exchange rates ended 2022 at 3.1%, 0.2ppt higher than we had forecast, but is currently projected to have slowed to 2.3% this year, also 0.2ppt higher. Especially for advanced economies, we were too pessimistic, with the US on track for 2.1% growth this year instead of 0.7%, the Euro Area for +0.3% instead of –0.4% and the UK for +0.5% instead of –0.5%. Japan is the outlier, with GDP growth accelerating from the disappointing 1.0% pace in 2022 to 1.3% in 2023. We were too optimistic for China, where the economy is struggling to build momentum despite the government abandoning the zero-COVID policy a bit earlier than expected at the end of last year. Official growth is now on track for just

5.0% in 2023, 1.1ppt less than we forecast last year. For the other major emerging markets (EMs), such as India and Brazil, we are now much more optimistic than last year.

In 2022, we forecast global inflation to fall from 7.1% in 2022 to 5.7% in 2023 and 3.5% in 2024 before converging with the 3% long-run average thereafter. Superficially, that forecast remains on track, with our latest projections at 7.0%, 5.6% and 4.4%, respectively, and then still down to 3% for the remainder of the forecast horizon. However, this is flattered somewhat by a more-rapid-than-expected drop in commodity prices and conceals that 'underlying inflation', i.e. inflation rates excluding food and energy, has generally been much more persistent than expected.

Table 1.1. Real GDP growth forecasts, Green Budget 2022 and Green Budget 2023

Real GDP growth (YY %)	2022		2023		2024		2025		2026		2027	
	GB 22	GB 23	GB 22	GB 23	GB 22	GB 23	GB 22	GB 23	GB 22	GB 23	GB 22	GB 23
World	2.9	3.1	2.1	2.3	2.9	1.7	3.0	2.7	2.8	2.6	–	2.6
Advanced economies	2.4	2.6	0.4	1.4	1.8	0.1	2.0	1.8	1.6	1.6	–	1.6
US	1.8	2.1	0.7	2.1	2.1	0.3	2.4	2.4	1.8	1.8	–	1.8
Japan	1.5	1.0	1.4	1.3	1.0	0.6	0.7	1.0	0.7	0.7	–	0.7
Euro Area	3.1	3.5	–0.4	0.3	2.2	–0.1	1.9	1.2	1.6	1.5	–	1.4
UK	3.4	4.1	–0.5	0.5	0.6	–0.6	1.1	0.2	1.4	1.2	–	1.3
Emerging markets	3.5	3.6	4.2	3.3	4.1	3.6	4.1	3.8	4.1	3.8	–	2.8
China	3.3	3.0	6.1	5.0	4.8	4.6	4.8	4.5	4.8	4.4	–	4.4
India	6.7	6.7	5.9	6.6	6.3	5.6	6.2	6.3	6.4	6.2	–	6.2
Brazil	2.7	2.9	0.3	3.1	1.5	1.5	1.5	1.5	1.5	1.5	–	1.5

Source: IFS Green Budget 2022, and Citi Research forecasts as of 20 September 2023.

Higher-than-expected growth and underlying inflation also explain why central bank peak rates are now expected to be significantly higher than forecast last year. For the US Federal Reserve and the Bank of England, we now see the peak rate at 5.75% and 5.25%, respectively (previously 5.0% and 4.25%, respectively) and for the European Central Bank at 4% (previously 2%). With the rate hike cycles now mostly over (we expect only one additional 25bps step at the Fed and none at the ECB and the Bank of England), the uncertainty is now shifting to the persistence of these restrictive rates. We expect the Fed, the ECB and the Bank of England to start cutting their policy rates in Q2 2024. The Bank of Japan has remained an outlier, keeping its yield-curve control in place beyond the end of Kuroda's term, but that looks increasingly

likely to change this winter. By 2026, we expect the Fed to have settled at policy rates of 2.5%, and the ECB and the Bank of England at 2.0%. Note that some EM central banks in Asia and South America have already started cutting rates, while the People's Bank of China is cutting without ever having hiked.

1.7 Conclusion

The path to a soft landing of the global economy after the inflation surge and sharp rate hike cycle of the past two years is narrow. In the US, growth and inflation are so resilient that the Federal Reserve might be at risk of struggling to return inflation to target quickly enough, which could trigger the need for even more tightening later on. China's economy is struggling to gain momentum and may be exporting deflationary tendencies to the rest of the world. In Europe, economies are struggling to grow even before the full impact of monetary policy has unfolded. If the European economy falls into a protracted recession, and deflationary tendencies return, the ECB would need to react quickly and decisively to avoid returning to the effective lower bound.

Excluding China, we are now forecasting world GDP growth of less than 1% in 2024, fulfilling some definitions of a global recession. And for China we are not optimistic either. Such weak growth should force underlying inflation lower, albeit not quickly. Volatile energy and food prices could prevent a return of price stability, in either direction. Still, by the time of the 2024 Green Budget, global central banks will likely be well into a rate-cutting cycle.

Risks to this scenario abound. On the positive side, falling inflation may spur growth more strongly than we currently expect. The manufacturing cycle could be turning as inventories are depleted. Public investment to accelerate the green transition and digitalisation may increase demand, and technological developments such as artificial intelligence (AI) could boost supply.

On the negative side, inflation may not easily return to target, even in weak economies, or may even rebound where growth remains too strong. It may take an even deeper slowdown to break inflationary pressures for good and that may in turn mean much higher policy rates for an extended period. This risk seems particularly pertinent in the US. However, global trade fragmentation, the consequences of the pandemic for labour supply sanctions, energy supply problems or climate change could keep inflation high even in weak economies. They would simply not be weak enough.

In contrast, for many other parts of the world, it is also possible that central banks have already gone too far. As the monetary headwinds strengthen, they may trigger new recessions or deepen and extend existing ones as credit supply and demand dry up. Government may be unable to help amid high debt ratios and borrowing costs, while central banks are unable to come to the rescue as they keep one eye on the Fed and financial stability. While such risks seem more pertinent in emerging markets, even western Europe may not fully resist this drag.

References

Carney, M., 2017. Lambda. Bank of England speeches, 16 January, https://www.bankofengland.co.uk/speech/2017/lambda.

European Commission, 2023. 2023 Strategic Foresight Report. https://commission.europa.eu/strategy-and-policy/strategic-planning/strategic-foresight/2023-strategic-foresight-report_en.

Sheets, N., Sockin, R. and Langlois, C., 2023. Credit tightening – news from recent Fed & ECB surveys. Citi Global Economics Views, 2 August, https://www.citivelocity.com/t/r/eppublic/2mc6L.

2. UK outlook: fallout

Benjamin Nabarro (Citi)

Key findings

1. **The UK's recent experience is an extreme example of a global shift in macroeconomic volatility from demand to supply.** The UK has suffered two major shocks since 2020. The rebound from the pandemic proved to be quick, but incomplete. The subsequent terms-of-trade shock through 2022 has meant a further slowdown. **Recent ONS statistical revisions paint a rosier picture of the past.** But even so, UK GDP is still 5.2% short of its 2012–19 trend: a worse relative performance than either the United States or the Euro Area where the shortfalls range between 2% and 3%. Upwards revisions to the UK's estimated post-pandemic performance, while good news, also do not translate into an improved outlook ahead.

2. From here, the UK economic outlook hinges on three primary factors: first, the boost associated with the unwinding of the adverse terms-of-trade shock; second, the headwind associated with tighter monetary policy; and third, the potential for greater inflationary persistence – especially in wage setting. The first has supported growth consistently over the past 12 months as news around the terms-of-trade shock (especially around energy prices) has turned out better, and fiscal support has remained in place. However, many of these supports now seem to be fading. And monetary policy is likely to weigh heavily over the economic outlook. Our estimates suggest that the 5.15 percentage point increase in Bank Rate might be expected to eventually reduce output relative to where it otherwise might have been by roughly 4.0–4.5 percentage points over two to three years. Credit growth has, in recent months, dropped to levels only previously observed during the post-GFC Credit Crunch, in a sign of the economic shock to come.

3. **Even before the shock to credit, firms and households faced a continued squeeze.** The weakness of UK corporate margins to this point has been genuinely exceptional. Unlike in the US and the Euro Area, changes in firm profit margins have made only a minimal contribution to the rate of overall inflation and wages proportionately more. Our best estimate of firms' bottom lines suggests that profitability

remains around 3 percentage points down on pre-COVID levels. A key question for the outlook now is whether firms seek to keep prices higher as costs fall in order to repair margins or cut back on staff. We think it unlikely households will be able to come to firms' rescue. **Even with modestly positive real wage growth, real household disposable income is likely to continue to shrink in 2024 as a result of higher interest rates and ongoing tax rises.** We expect household consumption to stagnate through both 2024 and 2025.

4. **Household and corporate balance sheets are no stronger in aggregate than they were pre-pandemic.** While households in particular enjoyed a marked boost in net worth through 2020, in the years since, the value of both financial and housing wealth has been eroded by the surge in inflation. **The implication is that net worth within the household and non-financial corporate sector is now 33 percentage points smaller as a share of total output than in 2019** (whereas it is well above pre-pandemic levels in the US). **An older working population now means households are more resilient to the cash-flow effects of higher interest rates, but more vulnerable to changes in asset prices.** Already, savings are rising rapidly in response to the recent balance sheet deterioration. This adds to the downside risks, with the potential for an adverse feedback effect between asset prices, demand and employment.

5. There are signs labour market dynamics are starting to shift. **Unemployment has increased from 3.5% in the 2022 trough to 4.3% now. We expect an increase to 5.8% by the end of 2024.** Through 2022, labour demand was particularly strong while labour supply was weak. There are signs that supply is beginning to normalise – with improvements in matching and increases in aggregate labour supply. On the demand side, there are also clearer signs that softening activity is feeding into vacancies – with most remaining demand strength now concentrated in the public sector. There are also tentative signs that some labour hoarding is beginning to ease. **With the UK already close to the historical threshold at which unemployment begins to feed back into consumer confidence and demand, we see growing risks that higher unemployment (alongside higher rates) feeds back into a broader weakening in household consumption.**

6. We expect a reduction in CPI inflation from 6.7% in August to a little over 4% by the end of the year – which would mean the Prime Minister meets his goal to halve inflation. None of this should be taken as a sign of complacency with respect to the inflationary risks, however. The focus now is more how far price growth can fall back through 2024 – i.e. whether inflation makes it from 4% to 2%, and whether it does so sustainably. Here the key question in our view is whether pass-through of adverse cost

shocks proves symmetrical over the coming months. If so, then the scope for firms to recover margins will be limited, and prices should fall both quickly and completely. A slower reduction in inflation would create space for more near-term resilience, but also more persistent price and wage growth. This could mean more rate rises, and plausibly a longer recession later on.

7. The risks of a more disruptive inflationary scenario are very real. But from here, these appear most likely to relate to any further fiscal policy errors. **If there were to be any ill-timed fiscal giveaways, they would risk shifting the UK into a higher-inflation paradigm.** Any near-term fiscal boost (e.g. in the form of pre-election tax cuts) could therefore require repayment many times over, not just in higher taxation but through a protracted monetary-policy-induced recession. **The UK has little room for ill-timed fiscal inducements.**

8. While the risks around inflation are increasingly skewed to the upside, the risks around activity look skewed to the downside, especially in the medium term. In part this reflects the potential for more embedded inflation. It also reflects the possibility of a more meaningful adverse effect from weaker private sector balance sheets. Having delivered the sharpest monetary tightening since the early 1980s, we are in uncharted territory in terms of the potential economic spillovers. Fewer households have substantial outstanding mortgages. But more are reliant on private savings and housing wealth for their retirement. This transmission mechanism is more unpredictable, especially when global rates could remain higher.

9. **This leaves monetary policymakers with a conundrum.** The risk of embedded inflation means that slowing growth and higher unemployment may be insufficient for a loosening of monetary policy; instead, policymakers may want to wait to see firm evidence of disinflation. **The issue is that, by definition, once this is achieved, policy has been too tight for too long.** In current circumstances, that is also risky – with the economic sensitivity to weaker asset prices likely greater, but also very difficult to reverse. The historical lesson since the 1970s has been not to cut rates until one is sure the inflationary risks have been contained. But a higher level of indebtedness means the policy trade-offs are now harder to navigate, and the balance of risks is more two-sided.

10. The economic experience of the last three years is a harbinger of the kinds of supply shocks that are likely to come. In our view, **an over-reliance on monetary policy has meant poorer policy trade-offs and a weaker overall recovery – especially when fiscal policy has remained extraordinarily loose**. Long lags mean rate hikes offer only limited insurance, and often at great (and persistent) cost. And their blunt nature

reduces the potential for a more investment-friendly recovery, while also adding to the financial stability risks. The economic challenges of the coming decades are hard enough without persistent policy headwinds. In our view, t**he policy mix needs to change**. We think there is a strong argument for fiscal policy to take on more of the burden of managing the risks around inflation. This should come alongside efforts to invest in greater structural flexibility. As things stand, the UK is poorly placed.

2.1 Introduction

Recent British economic experience has been an exhibit in the shift from a demand-driven economic world to one defined by weak, volatile supply. While recent shocks look to have eased, adjustment remains far from complete. And these challenges sit alongside legacy issues of poor productivity, falling business dynamism and high debt – all of which limit the UK's room for manoeuvre. To put it bluntly – the UK is a small open economy beset by chronic structural challenges and acute adjustment-related exigencies. In this chapter, we aim to tease out the impact of these respective shocks, discuss their likely development and set out their implications for the economic and policy outlook.

The starting point here is one of exceptional macroeconomic volatility. The UK has effectively suffered two distinct, if related, 'recessions' since 2020. The rebound from the pandemic proved quick, but incomplete – even in light of recent revisions. The subsequent terms-of-trade shock through 2022, while not generating two consecutive negative quarters of GDP growth, has meant a further distinct slowdown. Slow domestic reallocation – in part because of what, in retrospect, was an over-reliance on fiscal subsidies – has compounded the associated hit to supply. The net implication has been to push inflation higher, while the labour market has ground tighter. Monetary policy has subsequently been forced to tighten significantly.

The outlook from here is, in our view, a three-way tussle between: (1) the boost from the unwind of the adverse terms-of-trade shock; (2) the headwind associated with tighter policy; and (3) the potential for greater inflationary persistence – especially in wages.

The terms-of-trade shock, as we discussed last year, has been the predominant macroeconomic driver over the past 12 months. Having worsened considerably through 2022, energy prices have since fallen significantly. Alongside persistent fiscal support, the external picture for the UK private sector has subsequently improved. Activity has surprised to the upside as a result. Many of these effects now appear to have run their course, however, with further improvements likely to be offset by the unwind of associated fiscal support. The first-order impact of the terms-of-trade improvement seems insufficient, at least alone, to return firms and households to a position of economic stability. Instead, firms in particular still likely face a struggle to restore profitability.

In our view, the UK therefore still faces a challenging adjustment ahead. We view two scenarios as broadly plausible:

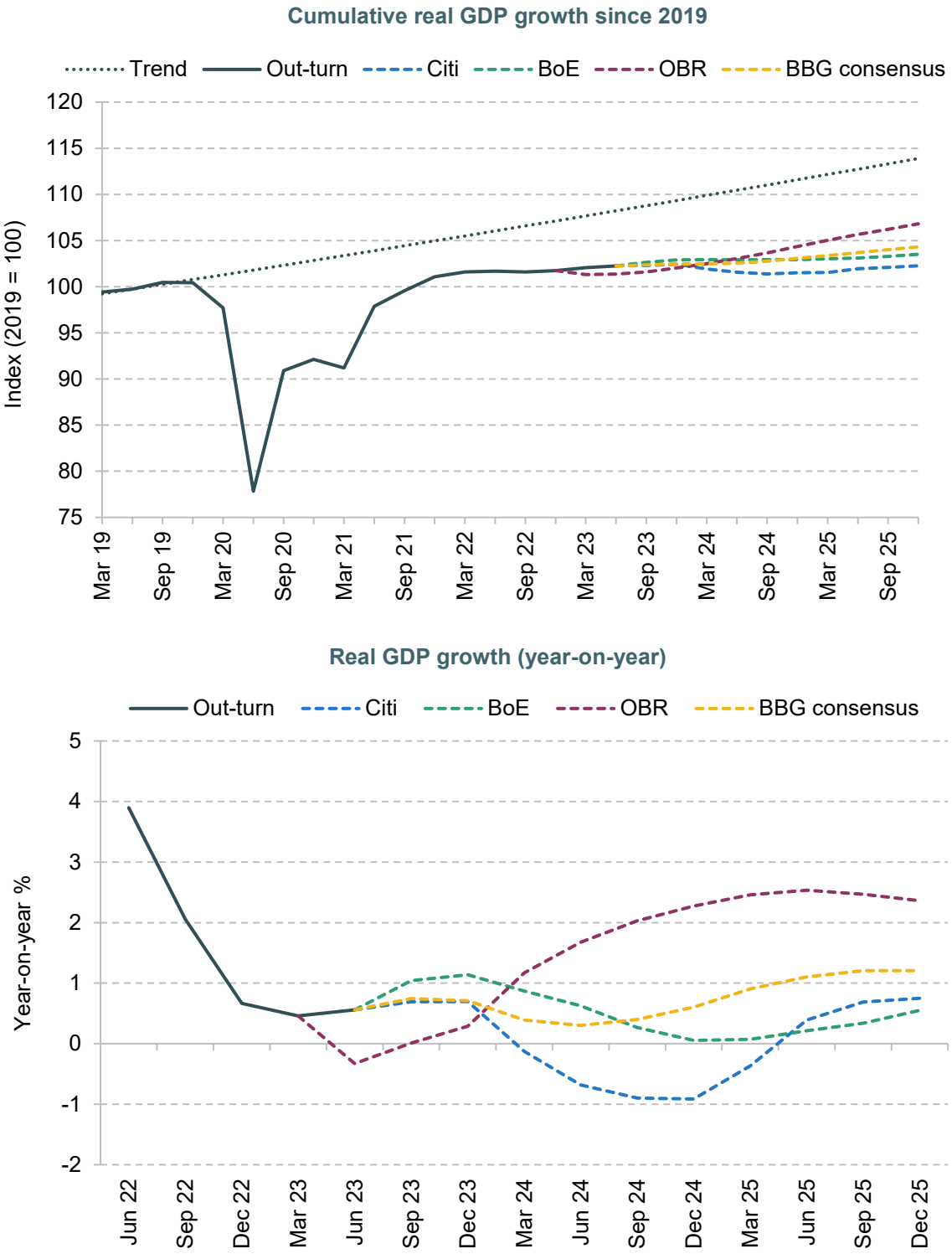
- First, firms could repair profit margins through elevated price growth. This could then enable a period of near-term economic resilience where the labour market remains tight and wage growth elevated. However, this would suggest more persistent inflation, higher rates and – plausibly – a more severe downturn later.
- Second, firms could repair profit margins by cutting back on capacity and cost pressures – especially workers and wages. This would suggest a relatively sharp reduction in wage pressures, weaker real incomes and – plausibly – a larger initial increase in unemployment.

We lean towards the latter scenario. As we discuss below, pricing power has been patchy throughout recent shocks. And as costs have been falling, this so far seems to be feeding through symmetrically into lower price growth – limiting scope for a recovery in corporate margins. This could of course shift. But even with modestly positive real wage growth, household disposable income is likely to continue to shrink as higher mortgage costs continue to feed through. This reflects transmission from a generational monetary policy tightening that is only now beginning to build. This suggests a narrowing path to a recovery of pricing power, and with it more persistent inflationary pressure.

Instead, we expect weak margins and policy headwinds to drive a moderate recession through the first half of 2024. We expect GDP will fall 0.7% by next year, followed by growth of 0.4% in 2025. This is more pessimistic than the Office for Budget Responsibility's forecasts from March – which suggest cumulative growth of 1.6% over 2023 and 2024 – and Bank of England forecasts that suggest growth of 1.1% over the same period (Figure 2.1). We forecast that unemployment will increase relatively quickly to a 5.5–6.0% range by the end of 2024, up from 4.3% now and a trough of 3.5% in 2022, feeding back into a more persistent economic softening. We expect CPI inflation to fall to a little above 4% by year-end 2023 to a little below the 2% target in Q2 2024 (Figure 2.2), well below current Bank of England expectations but closer to economists' consensus.

Uncertainty here remains elevated. For economic activity, we see the risks as broadly balanced in the near term but skewed to the downside further out. As we noted above, a slower fading of inflationary pressures and stronger near-term growth remains a plausible, temporary equilibrium. But this would likely drive further interest rate increases, risking a protracted recession later on. On the other hand, having delivered the sharpest monetary tightening since the early 1980s, we are in uncharted territory in terms of the potential economic spillovers. With household and corporate balance sheets no stronger in aggregate than they were pre-pandemic, both already appear in a nascent process of balance sheet repair.

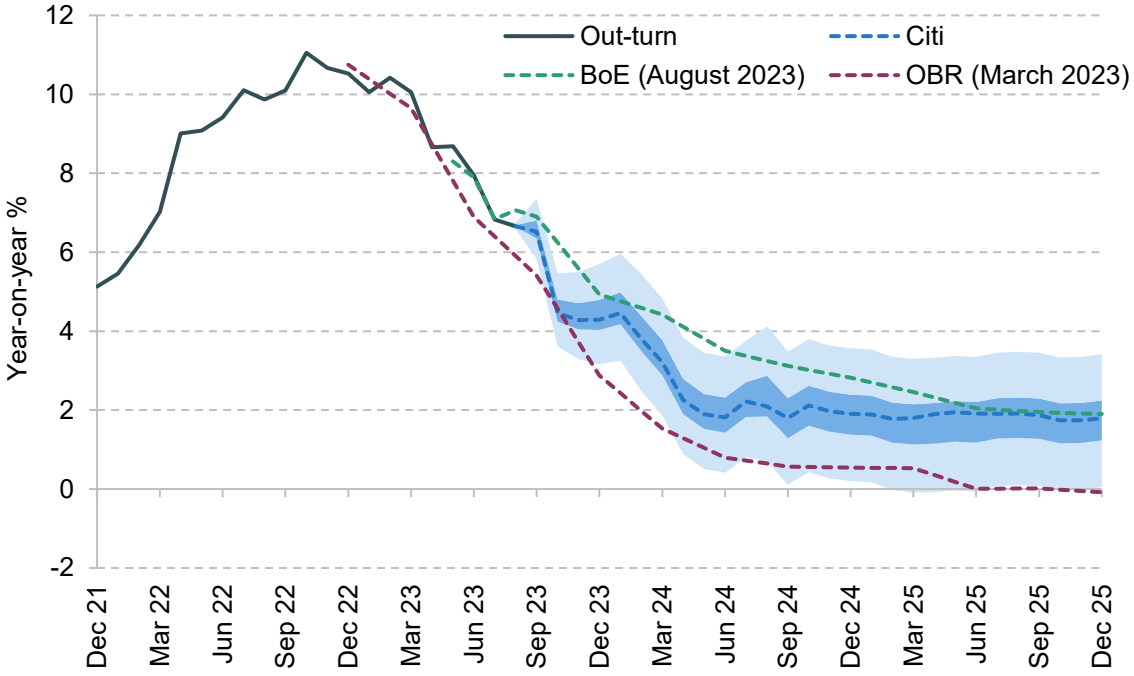
Figure 2.1. Forecasts for UK real GDP growth



Note: Official forecasts are indexed to latest available data for the last realised quarter at the time of the forecast. For the Office for Budget Responsibility (OBR), these data are the March forecast and are therefore indexed to Q4 2022. Bank of England (BoE) forecasts show August forecasts indexed to the latest data for Q2. BBG shows the consensus of private forecasters surveyed by Bloomberg. 'Trend' is based on average growth between 2012 and 2019.

Source: ONS, Bloomberg LLP, Bank of England and OBR.

Figure 2.2. Forecasts for UK CPI inflation



Note: The shaded areas show the probability distribution around the in-house Citi forecast, with the darker shaded area denoting the range between the 40th and 60th percentiles of an adjusted, discretionary normal distribution around the core forecast. The lighter shaded area shows the range between the 20th and 80th percentiles of the distribution. The BoE forecast is the mean estimate from the August Monetary Policy Report. The OBR forecast is taken from the March Economic and Fiscal Outlook.

Source: ONS, OBR, Bank of England and Citi Research.

The external context matters here. With US rates likely to remain higher for longer (see Chapter 1), this risks further cramping fiscal space. This also adds to the downside risks around asset prices – with changes here driven not just by spot policy rates, but by the broader matrix of financial conditions. In a small open economy, these are only partially in the gift of domestic policymakers.[1]

With respect to inflation, the risks to our forecasts remain skewed to the upside in both the short and medium term. In the former case, this primarily reflects continued risks associated with commodity prices and the currency. In the latter case, it reflects the continued risk of a shift in domestic wage and price setting. These risks remain material, but they are perhaps not as large

[1] International spillovers in monetary policy have been well documented both with respect to rates and quantitative easing (Haldane et al., 2016), and rates (Buch et al., 2019). In general, there is a strong, common, component to monetary policy globally – with the Federal Reserve particularly influential. These dynamics are especially notable for the UK at present because international spillover effects in monetary policy tend to be especially powerful in asset price channels. In that sense, there is now a coincidence between those elements of monetary transmission to which the UK is likely more sensitive, and those the Monetary Policy Committee (MPC) will find it hardest to control. For more discussion of the 'international dimension' of monetary policy, see Chari, Stedman and Lundblad (2021).

as they were at the start of 2023. And the counterbalancing effects associated with a more persistent downturn are also becoming more prominent.

With a long campaign for the next general election now in its initial stages, our analysis points to two important takeaways.

First, in the near term, the UK economy remains stuck between weak growth but continued inflationary risks. Constraints in the latter case mean that if there were to be any ill-timed fiscal giveaways, they would risk shifting the UK into a higher inflation paradigm. Pre-election tax cuts may therefore require repayment many times over, not just in higher taxation but through a protracted monetary-policy-induced recession. The UK has little room for expedient fiscal inducements.

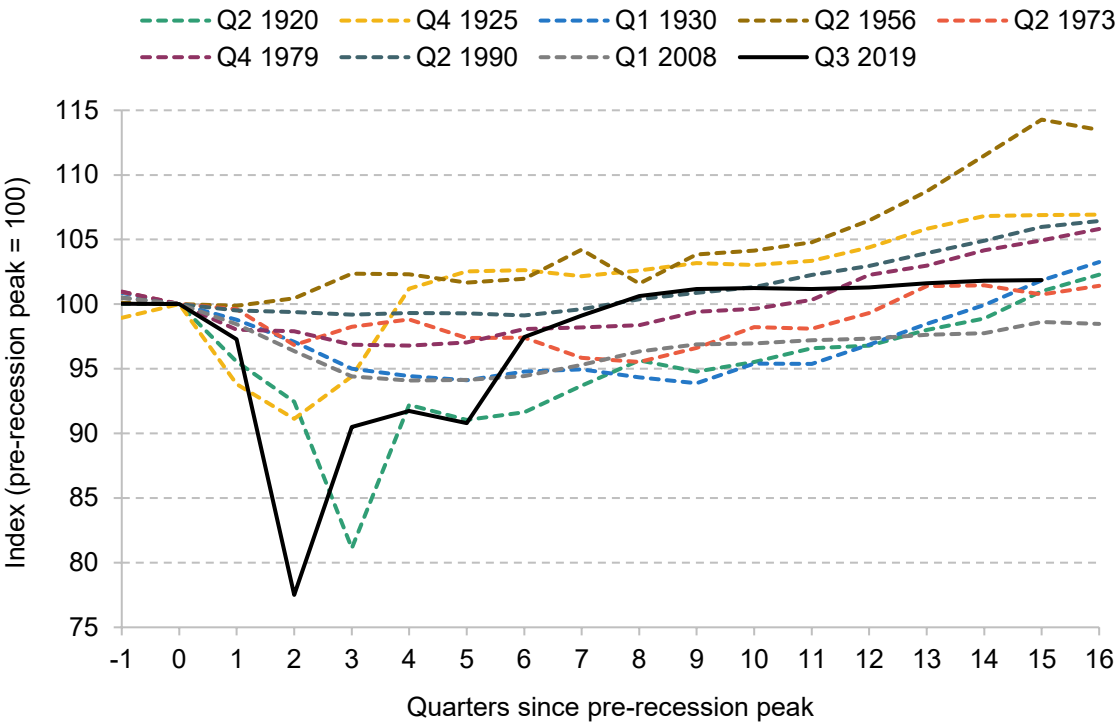
Second, the case for meaningful structural reform is increasingly urgent. The UK is once again exiting a major international shock towards the back of the pack. With big ecological and geopolitical challenges, the UK needs to build an economy capable of rapid reallocation. This will require a newfound and successful focus on macroeconomic resilience, as well as a policy playbook that encourages reconfiguration, rather than stands against it. After 15 years of stagnation, the sooner this happens the better.

Below, we begin by discussing the post-pandemic recovery (Section 2.2). We then move to discuss the outlook – with a particular focus on the impact of higher interest rates for both households and firms (Section 2.3). We then discuss the outlook for UK supply and the labour market, before turning to wages and inflation (Section 2.4). We conclude in Section 2.5 with some comments on the implications for monetary and fiscal policy.

2.2 The recovery so far

The UK's post-COVID recovery has been weak and uneven. While the UK has managed to avoid a formal recession, since the first national lockdown, the cumulative performance of UK output since 2019 is comparable to that from historic downturns – the recovery from the Great Financial Crisis was somewhat weaker, and the recovery from the recessions of the early 1980s and 1990s a little stronger (see Figure 2.3). Sectoral dispersion remains elevated. Consumer facing services output, for example, remain 4.3% below their February 2023 level. Construction and business services, by contrast, are 5% and 7% above. It is a similar story across regions, with London once again recovering somewhat more strongly than the North and Wales, which are lagging.

Figure 2.3. Recoveries from historic UK downturns



Note: Pre-recession peak is basis for index. The pre-recession peak quarter in question is used to label each series. This includes June 1920, December 1925, March 1930, June 1956, June 1973, December 1979, June 1990, March 2008 and September 2019.

Source: ONS, Broadberry et al. (undated), Thomas and Dimsdale (2016) and Citi Research.

Why has supply been quite so weak?

The question here is why the UK has struggled. We think it is useful to think about the UK as having been through two separate 'recessions'.[2] First, activity was hit by an acute lockdown and subsequent reconfiguration. In the period since, activity has suffered owing to a deterioration in the UK's terms of trade – with the cost, in relative terms, of imported items such as energy and food rising sharply.[3] The common feature of both has been that, rather than suffering a preponderant shortfall in demand, the 'supply side' has been the primary source of volatility.[4]

[2] Here, rather than talking about 'two negative quarters of GDP growth' when denoting a recession, we are employing a broader definition along the lines suggested by the National Bureau of Economic Research (NBER) Business Cycle Dating Committee and the UK Business Cycle Dating Committee (Broadberry et al., 2023). Both define a recession as a significant decline in economic activity spread across the economy, lasting more than a few months.

[3] Despite massive fiscal support and the recent reversal, the terms-of-trade shock has had a significant effect. For example, cumulative growth between Q4 2021 and Q2 2023 totalled just 0.8%. The Bank of England had expected growth of 3.7%. If the recovery had proven just half as strong as the Bank had expected, then this would suggest additional national income equivalent to £1,500 per household.

[4] Chronic challenges here are of course long in the tooth. The primary issue has been a sharp drop in productivity growth, which has primarily been driven by a drop in growth among some of the most productive firms across sectors (see Schneider (2018)). For a discussion of the slowdown in historical context, see Crafts and Mills (2020). For a short cross-national discussion, see Goldin et al. (2020).

Table 2.1. Cumulative recovery in real GDP: UK, US and Euro Area

	GDP			GDP per capita			GDP per worker		
	UK	US	EA	UK	US	EA	UK	US	EA
2002–07 trend (%YY)	2.6	2.9	2.1	2.0	2.0	1.6	1.5	1.8	1.8
2012–19 trend (%YY)	2.1	2.5	1.3	1.4	1.8	1.1	1.2	1.6	0.9
Post-2020 average (%YY)	0.5	1.7	0.8	0.4	1.3	0.4	0.4	1.3	0.2
Cumulative divergence, Q3 2023	–5.2	–2.6	–2.0	–3.3	–1.9	–2.2	–2.8	–1.1	–2.3
Expected divergence, year-end 2024	–8.7	–4.7	–3.9	–5.9	–3.0	–3.7	–5.3	–2.5	–3.5

Note: GDP per capita is calculated as real GDP divided by the population. GDP per worker is real GDP divided by the workforce. The 2002–07 and 2012–19 trends refer to simple averages of quarterly real GDP growth over each respective sub-period. The post-2020 average, owing to particularly large moves, is calculated as the cumulative change in GDP rooted by the number of quarters that have elapsed – in this case 14. Cumulative divergence shows the level difference between realised and forecast GDP, and that which would have materialised if the 2012–19 trend had continued. This is shown for Q3 2023 and also for Q4 2024 based on Citi's economic forecasts.

Source: ONS, Eurostat, BEA and Citi Research.

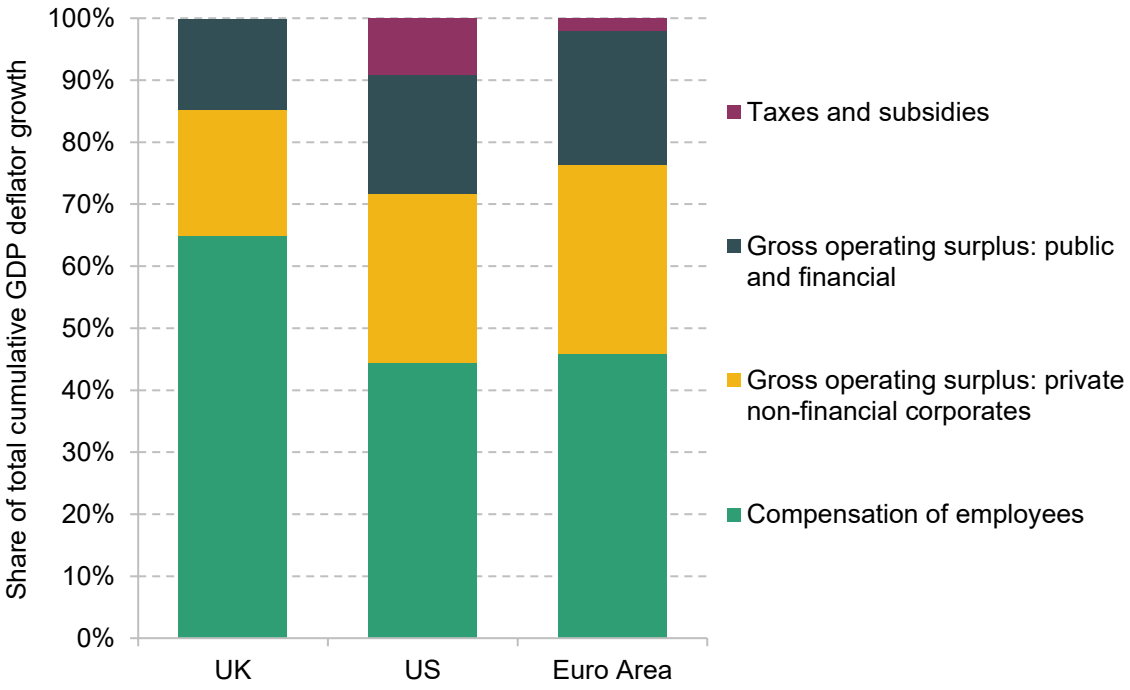
This is reflected in three features of the UK's recovery:

- First is the weakness in headline economic activity. This is true not just in historical terms but also cross-nationally (even with the big upwards revisions in the 2023 Blue Book – see Box 2.1 later). While neither the US nor the Euro Area has re-attained its pre-pandemic trend in output, their post-COVID shortfalls are materially smaller – 2.6% and 2.0% respectively – than in the UK (5.2% below). Per capita, the picture is similar, while per worker the gap is narrower across countries, although the UK still seems to be lagging somewhat. What is concerning in each case is that while we expect weaker growth in the US and the Euro Area versus the 2012–19 trend, in the UK the further reduction – particularly in productivity growth – is especially severe (see Table 2.1).
- Second, measures of intensive and extensive slack have remained at record lows. This is not unique to the UK, but the scale of associated tightness (in capacity utilisation, and the unemployment-to-vacancies ratio) seems to have been especially large. UK capacity utilisation increased by more than that in the US and the Euro Area during the early period of the pandemic – at least according to comparable IHS Markit data. The vacancies-to-

unemployment ratio also remained higher through 2022 than in either the US or Germany, even (in the former case) in the face of materially weaker output.

- And third is the weakness in corporate margins. This seems genuinely exceptional. Inflation has been high in the UK, as elsewhere, but less of the benefit has accrued to domestic firms. Figure 2.4 shows the contribution to the GDP deflator – an economy-wide measure of inflation – of various 'income' components of the national accounts over the course of the pandemic. Of interest here is 'gross operating surplus' (GOS) – the share of income that goes to compensating capital. In contrast to both the US and the Euro Area, the contributions of GOS (in this case of private non-financial corporations (PNFCs) and of the public and financial sectors) to aggregate price growth remain relatively limited – with around 35% of cumulative aggregate price growth driven by these components over the past four years, versus 46% in the US and 52% in the EA. As a share of GDP, onshore corporate margins – after interest – remain 1.0 percentage point below Q4 2019 levels. Adjusting for various opportunity costs, the picture is even worse (see Figure 2.23 later).

Figure 2.4. Income breakdown of the GDP deflator (cumulative growth since 2019)



Note: Chart shows growth in each of the income components of (nominal) GDP divided by real GDP. This then provides an income decomposition of the UK's GDP deflator. For the UK, these calculations exclude offshore oil exploration. Latest data are for Q1 2023.

Source: ONS and Citi Research.

The unwind of the terms-of-trade shock

In each case, the UK seems to have been squeezed by a series of supply challenges, lifting prices, but weighing on profitability, real incomes and economic performance.

Underlying weakness aside, the economic starting point for this forecast round is stronger than we expected 12 months ago. At the time of last year's Green Budget, we had expected GDP to fall by close to a percentage point in 2023. Subsequent forecasts from the OBR and Bank of England (both in November 2022) expected reductions of 1.4% and 1.5% respectively. Instead, we now expect growth of 0.5% in 2023 – not stellar, but not disastrous. The boost here comes on top of upward revisions to the back data for 2020 and 2021 – which now imply a stronger initial post-COVID rebound than previously thought.

Three factors help to explain this resilience.

Reversal of the terms-of-trade shock

The first is the reversal of the terms-of-trade shock. Since Q4 of last year, a mild winter alongside a larger demand reduction among European manufacturing firms reduced the severity of the gas shortage. In November, the Monetary Policy Committee (MPC) expected gas prices over 2023 to average 356 pence per therm. Current realised and futures prices would suggest an average price of 100–120 pence per therm. Alongside second-round effects on electricity prices, this shift has delivered a massive 3% boost to national income compared with what we had expected last autumn. A broader easing in imported goods costs means the aggregate boost to domestic incomes is even greater.

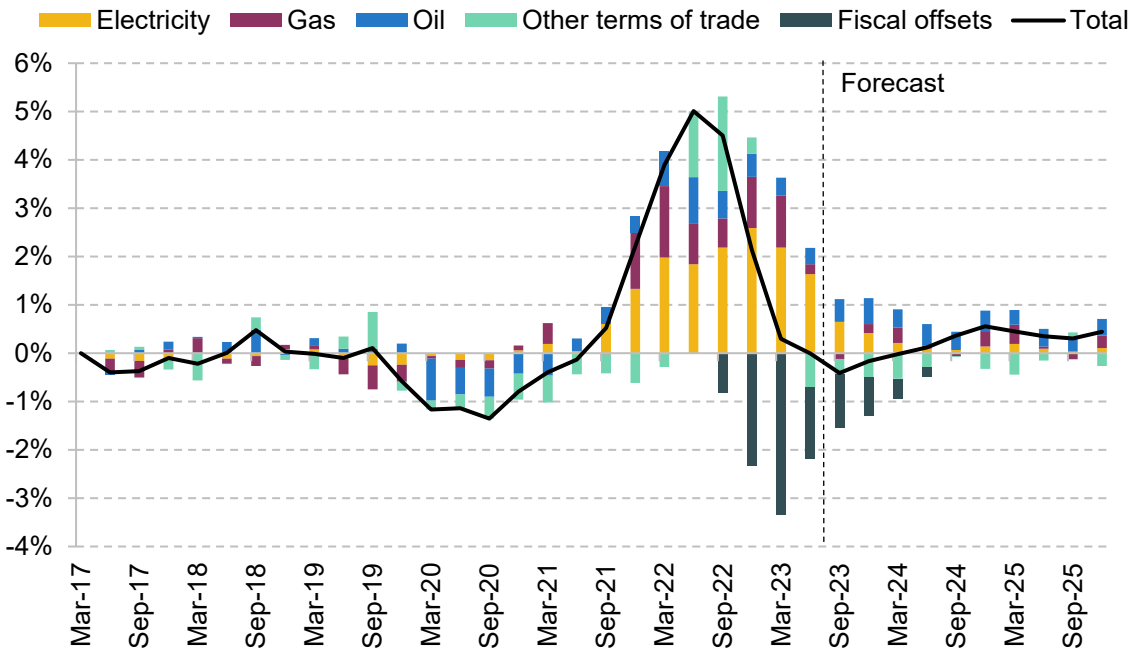
Risks remain here for the months ahead. The increase in global oil prices seen since the summer, for example, is sufficient to deduct roughly 0.1–0.2 percentage points (ppt) from forecast UK GDP growth in 2024.[5] And adverse weather, or further supply disruption, both pose risks. In that sense, while the current conditioning assumptions look considerably better than those that went into the March OBR forecast round, uncertainty remains elevated, with the risks still skewed to the downside for activity and to the upside for inflation.

Fiscal policy

The second factor is the response of fiscal policy. While much of this – especially over the winter of 2022–23 – was linked directly to energy prices, the overall scale of support took us by surprise. As energy prices fell, the first and primary beneficiary has been the exchequer. However, support to the private sector was not dialled down entirely. The energy price guarantee was dropped to £2,500 from £3,500 for financial year 2023–24. And cash supports to both the corporate and household sectors remained in place. The implication was a fiscal package that – on an adjusted basis – was more generous.

[5] See Harrison, Thomas and de Weymarn (2011).

Figure 2.5. Cumulative changes in UK import costs (% of GDP), 2017–26F



Note: The chart shows the total cumulative change in import costs for the non-energy economy. Consumption data are taken from BEIS, and then projected forward based on sensitivity of energy demand to gas and electricity prices. Prices take the average of wholesale gas and electricity markets two months prior. Terms-of-trade costs are based on the change in non-energy import deflators relative to domestic consumption, adjusted for import intensity. Fiscal offsets here include additional support for the private sector from May 2022 directed at the energy shock.

Source: BEIS, ONS, Bloomberg LLP, OBR and Citi Research.

Figure 2.5 nets fiscal support against the shock to import costs. Losses to private incomes peaked in Q2 of 2022. The net shock to the domestic private sector then seems to have gradually eased as subsequent fiscal support exceeded the adverse impact of further increases in energy prices. This has provided a consistent tailwind to activity through 2022 and the first half of 2023, helping to explain the resilience of real activity. We think these effects have likely provided a further boost through Q3 of 2023. And some of these effects are also likely to provide a further tailwind into Q4 as more of the benefits are transferred from energy providers to firms and households. However, increasingly, these effects seem to have run their course, with further reductions in energy prices balanced by unwinding fiscal support.

Supply chains

The third piece of the puzzle concerns supply chains. Here we think the scale of the recent improvement has also been significant. In the early stage of the pandemic, the UK proved especially exposed to international disruption. Issues remain, but most of the acute disruption that pervaded during this period has eased significantly. The proportion of firms citing challenges securing necessary imports from abroad has fallen from a little under 13% in mid-

2022 to 6.4% now – according to the ONS Business Insights and Conditions Survey (BICS). On the domestic front, the share of firms facing some kind of disruption has also fallen to 7.9%, down from 20% in Q3 of 2022.[6]

Many of these developments have, of course, been driven by international factors. We noted in Chapter 1 the broader easing of supply conditions that has materialised across the global manufacturing complex in particular. But for an economy that relies heavily on imported capacity, this has important implications for the cyclical position. Specifically, as supply disruptions have eased, we think this has boosted supply growth by around 3% cumulatively since 2021, reducing what – at the start of 2022 – was a large positive output gap. Then we thought excess demand totalled 1.5ppt. We think that has fallen to just 0.2ppt in Q3.

Box 2.1. 2023 Blue Book revisions: what are the implications?

The UK's Office for National Statistics (ONS) released a comprehensive set of 'balanced' GDP estimates for 2021 on 1 September[a] – the first estimate for the pandemic period in which information from the income, expenditure and output accounts are all 'balanced' through a supply and use framework. These data suggest both nominal and real GDP were higher than previously thought. Below, we set out the process through which GDP is revised, the changes that resulted this time and what they imply.

GDP cannot be directly observed. Instead, it is estimated from a range of survey data measuring aggregate output, expenditure and income. The process of calculating GDP estimates is effectively a three-phase one in the UK:

- First is an initial estimate, based primarily on the output data – usually around six weeks after the end of a quarter.
- A second, quarterly national accounts estimate, comes after 90 days, and incorporates data on both expenditure and income.
- Third is the full, balanced Blue Book estimate where output, expenditure and income data are balanced through a supply and use framework into a single coherent estimate. This is usually released 18–24 months after the end of the given calendar year.

During periods of acute volatility, uncertainty around these estimates is of course elevated. The pandemic period was no different – with materially larger discrepancies between various data sources, as well as specific challenges around measuring public sector output. In the latest iteration, real GDP

6 https://www.ons.gov.uk/economy/economicoutputandproductivity/output/datasets/businessinsightsandimpactontheukeconomy.

was revised up 0.6ppt and 1.1ppt in 2020 and 2021 respectively. The UK economy is now estimated to have ended 2021 0.6% larger than in Q4 2019, rather than 1.2% below (under previous estimates).

The upward revision was foreshadowed by a large statistical discrepancy in the national incomes data – which showed aggregate income was substantially stronger than aggregate output. Initially, this has been balanced over recent quarters by real expenditure data that had been somewhat softer. However, the ONS notes that data since show public sector output, household consumption and inventory accumulation were stronger than expected. The implication was an upward revision to the balanced estimate. There were also sizeable (two-way) revisions to the sectoral output figures, with telecoms and health services revised up sharply, while manufacturing was revised down.

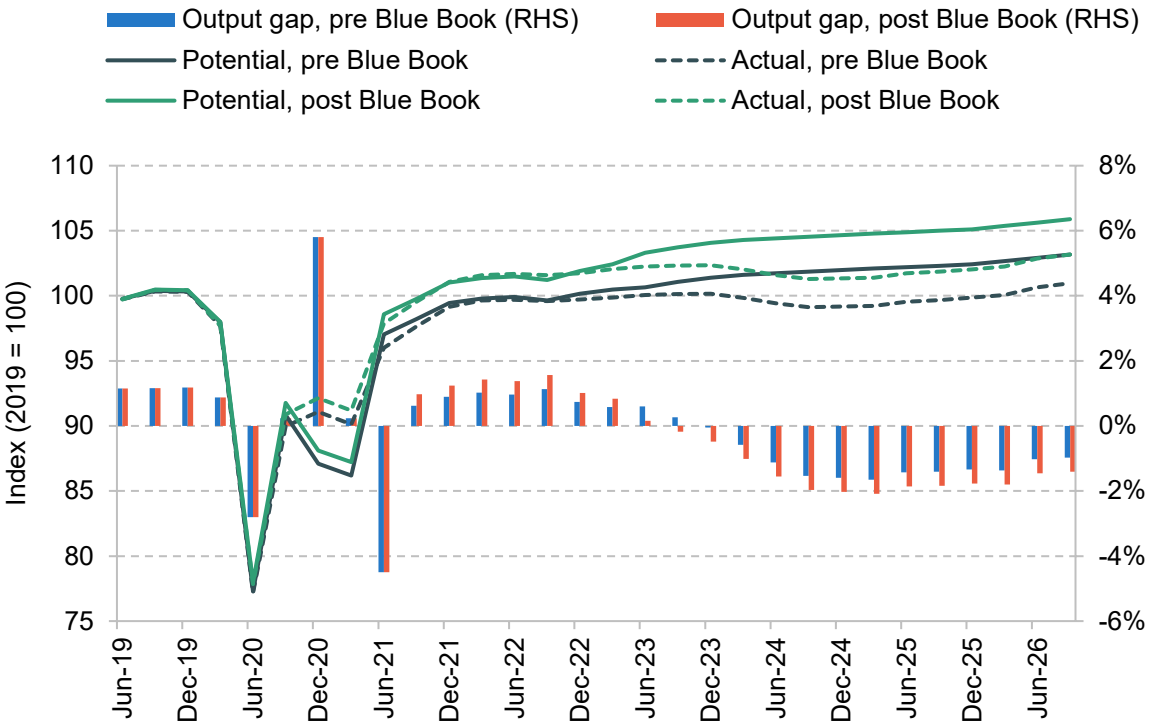
Two questions follow from such a major revision.

The first is whether we should expect further such revisions through 2022. Here we think the answer is no. The latest iteration of the quarterly national accounts for 2022 showed sequential growth to be unchanged.[b] The current pattern of statistical discrepancies suggests a material widening through 2021, but since then the gaps between the output, expenditure and income data have been more stable. Smaller revisions remain possible, but there is not an obvious large, continued misalignment that would suggest further revisions to growth rates through late 2022 and 2023. Instead, with at least some of these effects being driven by inventory accumulation through 2021, there is a risk that some growth has been 'brought forward', implying the potential for modest downward revisions in data iterations to come.

The second question is what the implications are for our understanding of the economy today. Here the upward revisions are probably good news – at least when it comes to the state of the private sector. To the degree that these benefits are sustained, they suggest that household and corporate balance sheets are in a better state than previous data may have implied. This helps to explain some of the resilience we have seen in recent quarters. For fiscal policy, the news is more of a double-edged sword. On the one hand, there are wider benefits to the macroeconomy being stronger than previously thought. On the other, the news suggests the tax 'richness' of the economy is less – meaning incremental growth is actually less good news than might have previously been the case.

For monetary policy, the key question is whether these revisions fundamentally alter our view of the 'output gap' – the difference between realised output and capacity. An upward revision of 1.8ppt to output does suggest the economy was somewhat tighter through 2022, helping to explain the strength of recent wage growth. But 1.2ppt of this 1.8ppt revision was driven by stronger labour productivity. The implication is that only 0.6ppt of the upward revision is 'excess capacity'. Much of that excess, we think, has been eroded through 2022, meaning there are relatively few implications for policy today. The implication of these changes for the outlook ahead is we think therefore relatively limited.

Figure 2.6. Estimates of UK output and potential output, pre and post Blue Book revisions



Note: Solid lines show Citi estimates of potential output pre and post Blue Book revisions, and dotted lines show Citi estimates of actual output (gross valued added) pre and post Blue Book revisions. The bars show the corresponding estimates of the output gap.

Source: ONS and Citi Research.

The US and France have both applied the same 'supply and use' framework to their national accounts already. Both still show stronger recoveries through the 2020/21 period than the UK. Other European economies have yet to follow. Only once this process is completed will we have a clear sense of how the cumulative recovery in the UK compares.

[a] https://www.ons.gov.uk/economy/grossdomesticproductgdp/articles/impactofbluebook2023changesongrossdomesticproduct/2023-09-01.

[b] https://www.ons.gov.uk/economy/grossdomesticproductgdp/bulletins/quarterlynationalaccounts/apriltojune2023.

The near-term outlook

After a period of stronger-than-expected growth, the question is always (1) whether the surprise reflects structural changes that must now be accounted for or, if not, (2) how long these effects could continue to run.

In answer to the former, we see little basis for a sweeping reappraisal.[7] Upward revisions to the back data through 2021 help to explain economic resilience through the early part of 2022. And more recent strength, including the surprise relative to our 2022–23 forecast, reflects lower-than-expected energy and import costs, alongside the expansion of fiscal support. A 5ppt GDP drop in import costs would imply a 2–2.5ppt boost in national activity. The UK first suffered this loss through the first half of 2022, but then secured a persistent boost as the shock was subsequently offset by ever-increasing fiscal support (see Figure 2.5). We think this combination helps explain the slowdown in 2022, and resilience in H1 2023. And in the latter case, these effects have run their course.

Looking forward, while growth in Q3 of 2023 is set to be (marginally) positive, we expect the outlook to deteriorate over the turn of the year. In very recent months, activity has been supported primarily by (1) stronger public sector output (and the unwind of some public sector strikes); (2) stronger consumption – and the associated support to real household incomes associated with the easing terms-of-trade shock; and (3) (in Q3) the reversal of the consequences of the 8 May coronation bank holiday. None is grounds for persistent optimism.

The most important question – and the focus of the discussion below – is where the unwind of the terms-of-trade shock and associated fiscal support leaves the UK in 'level terms'. More precisely, could this be enough to return households and firms to a position of economic self-confidence? That, we think, is a tall order.

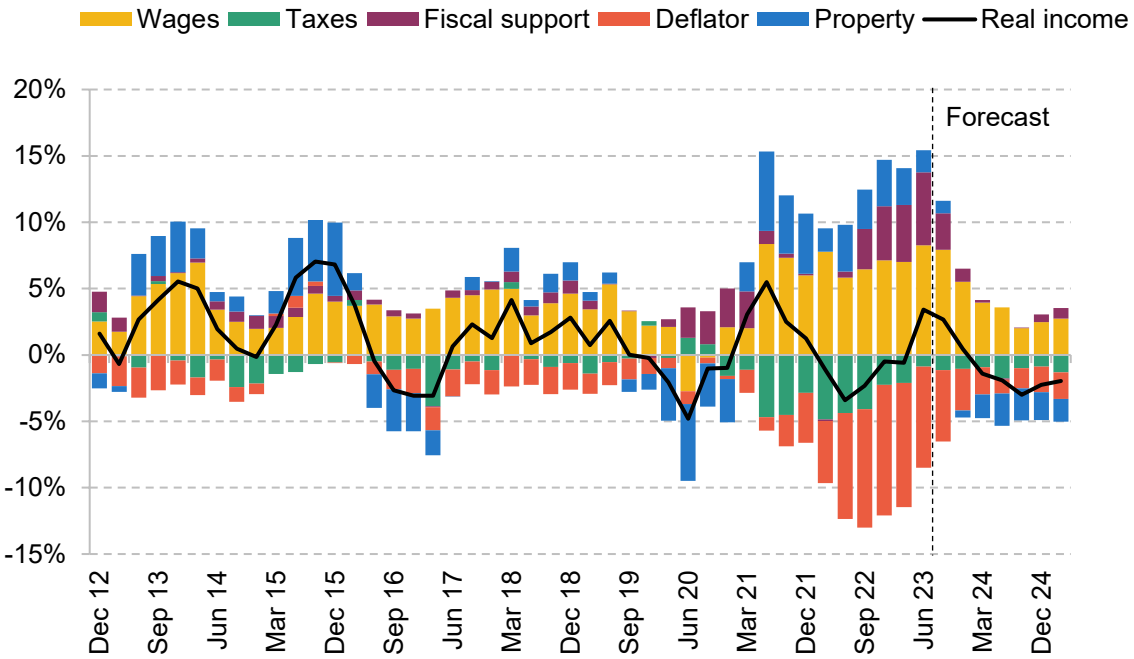
- For households, while wages are now growing faster than incomes, many of the direct benefits of easing terms of trade – particularly on the energy side – have already been realised. And households now face further headwinds from much higher interest rates, passive fiscal drag and the end of various fiscal subsidies – as we discuss below.
- For firms, the drop in electricity and gas prices looks set to deliver a £25 billion dividend in gross terms across 2023. The issue is that a large part of this dividend will be offset by a winding-down of fiscal support from just under £14.6 billion in annualised terms in the second half of financial year 2022–23 to just £1.5 billion now. That would still leave most measures of profitability below their pre-COVID levels (e.g. see Figure 2.23), suggesting some effort to further repair the damage.

This is important framing for the months ahead. With firm profitability likely to remain weak, and real household income also poor, we think the UK economy still faces an 'adjustment deficit'. That must be worked through. As we noted in the introduction, the response could be

[7] This is not uncontroversial. The Bank of England, for example, noted in both May and August that the discretionary element of the forecast had assumed stronger consumption than historical models might have implied on the back of recent experience. It would not surprise us to see the OBR following suit in November. But especially in light of the upward revisions, meaningful structural changes are in our view far from clear.

lower demand, capacity shedding and higher unemployment. Alternatively, there is a risk of a more persistent cycle of above-target wage and price increases – posing a greater challenge from a monetary policy perspective.

Figure 2.7. Real household net income growth (% year-on-year)



Note: The measure here includes all labour, mixed and property income – including (net) interest payments. 'Wages' includes self-employment income. 'Taxes' includes National Insurance contributions. These data are deflated by the private consumption component of the GDP deflator.

Source: ONS, Bank of England and Citi Research.

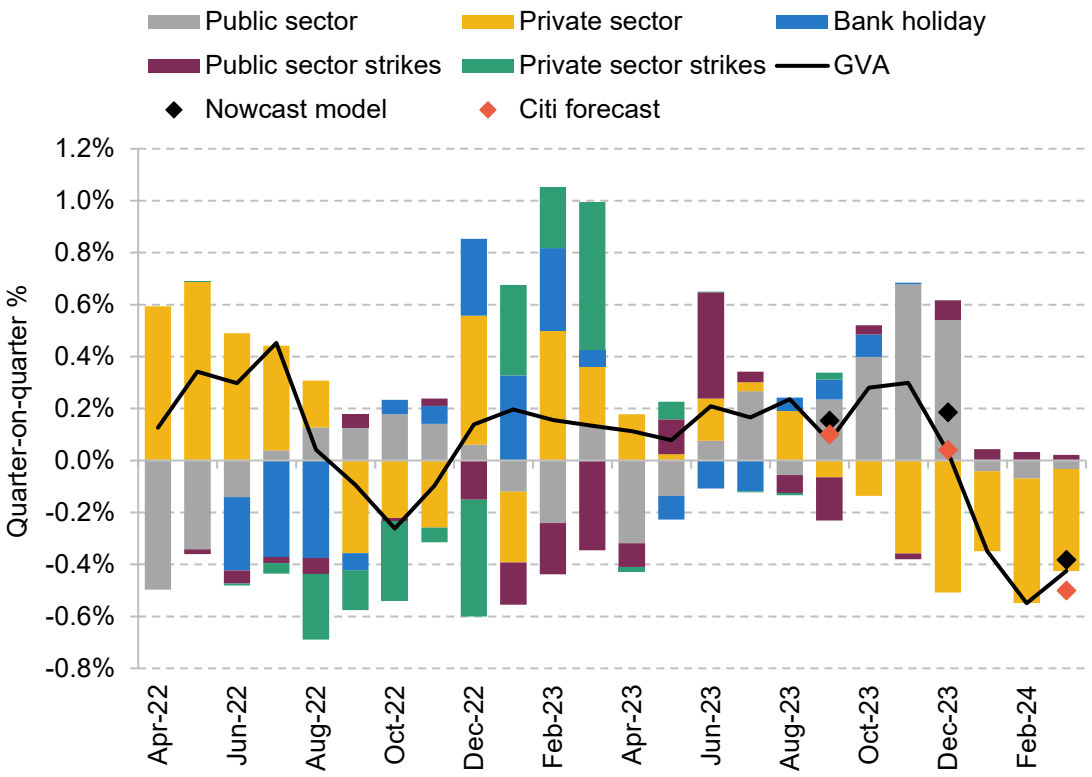
For now, the evidence is more consistent with the former. With the terms-of-trade tailwind beginning to fade, the survey data for the UK have once again begun to deteriorate. The PMI surveys for August and September, for example, have now indicated two consecutive months of renewed contraction. The CBI composite growth and conference board indicators have also taken a turn for the worse. Exceptional disturbances mean the relationship between the soft and hard data is more unstable than before the pandemic. And the soft data are also not uniformly weak.[8] The British Chambers of Commerce Survey for Q3, for example, remains robust. And the Lloyds business barometer is also above its long-term average and maintains a relatively good historical record in terms of leading activity. Forward-looking indicators across both the PMI and Lloyds surveys also still look more resilient. The historical record on the latter 'forward-looking' data is mixed, with these surveys often stronger in the aftermath of periods of high inflation. But these data highlight the risk of greater persistence in real activity, and

[8] In recent months, the MPC made reference to 'mixed' activity data.

therefore potentially wage and price setting. They also suggest that, at least in the very near term, a deep recession is not yet in play.

However, our assessment of the totality of the survey data is that the picture is probably softening overall. In the very near term, we expect GDP essentially to flatline over the second half of 2023 (with growth of 0.1% QQ in Q3 and 0.0% QQ in Q4) as base effects from the bank holiday and public sector strikes come to an end, and some final support from lower energy costs materialises. But under the surface, we expect private sector output to deduct 0.5ppt in Q4 (see Figure 2.8). Worse, we think, likely lies ahead in 2024.

Figure 2.8. Gross value added nowcast, 2022 to 2024



Note: Nowcast model is based on a 'mixed data sampling' (MIDAS) model, including a range of monthly, weekly and daily data (see Ghysels and Qian (2016) for an introduction).

Source: ONS and Citi Research.

Summing up

Recent ONS statistical revisions paint a rosier picture of the past, but do not – in our view – meaningfully alter the outlook for the (near) future. Overall, the UK post-pandemic recovery has still been subdued. Recent resilience largely reflects better terms-of-trade out-turns alongside considerable fiscal support. These supports are now fading. And unfortunately, we think firms and households still face a continued squeeze – partially as other factors, including monetary tightening, become more significant. It is to these medium-term considerations that we now turn.

2.3 The medium term: a perilous moment

We expect the UK to tip into yet another recession in 2024. As noted above, temporary supports such as the easing terms-of-trade shock and fiscal support look set to fade. And while continued – if gradual – supply improvements should support activity (see 'The problem with supply' in Section 2.4), the impact on aggregate activity of this is likely to be buried under the cumulative effect of higher interest rates. In total, a 515bp increase in Bank Rate would be expected to deduct roughly 4.0–5.5% from the headline level of activity over the subsequent 18 months compared with a scenario where rates had been left unchanged. As we will argue below, pass-through may be taking a little longer this time, but the ultimate effect is unlikely to prove less.

Recessions generally fall into two categories: (painful) corrections, and more existential adjustments. The Great Financial Crisis was an example of the latter, the recession of the 1990s the former. The recession we expect below is anchored in the less severe category. However, the downside risks are growing. Households are now facing up to significant increases in housing costs, just as the labour market begins to wobble. This adds to the risk of both an increasing precautionary response in household behaviour and a sharp deterioration in asset prices. With rates at these levels, such effects have the potential to spiral.

The anatomy of a monetary policy shock

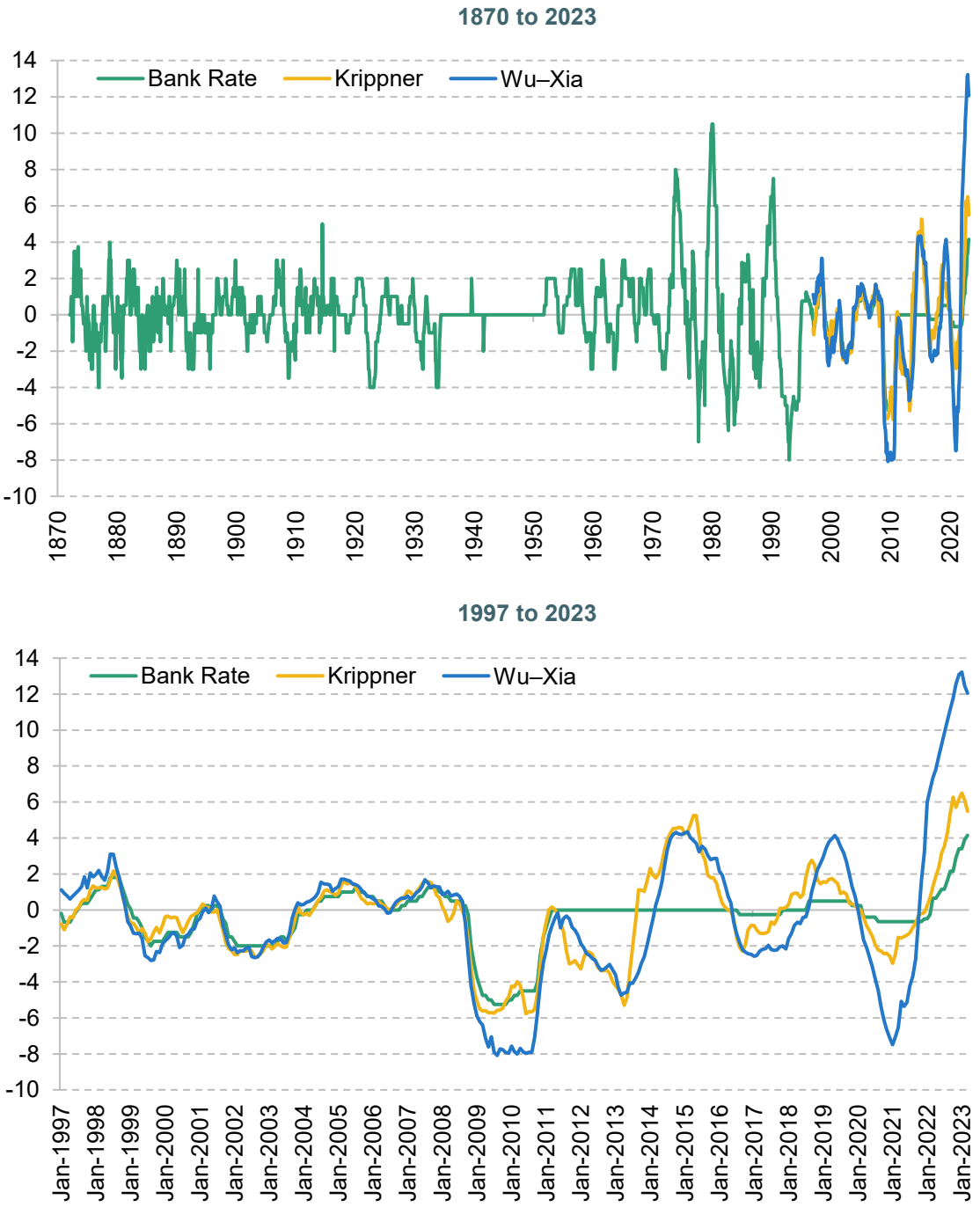
The starting point for the outlook is the tightening in monetary policy. The Bank of England has increased Bank Rate by 515bps in a little under two years. The cycle marks the most aggressive tightening since the onset of independence in 1997 and is only historically rivalled by that in the early 1980s (see Figure 2.9). While the level of rates is of course not especially high compared with the years before the Great Financial Crisis (GFC), the important point here is not the outright level, but that relative to some unobserved 'neutral rate'.[9] As we explain below, our assessment is that this level remains low, and policy is subsequently very tight. This is particularly so if we also account for the additional effect of quantitative tightening (as illustrated by the smaller increase in Bank Rate in Figure 2.9 versus estimates of the change in the total 'policy stance', however uncertain the latter may be[10]).

[9] This is the rate consistent with demand roughly growing at the rate of potential – so a sustained macroeconomic equilibrium. The neutral or 'Wicksellian' rate is sometimes denoted by R*. Bank estimates of R* have varied historically, but in 2018 the Bank estimated long-run R* to be around 1.5% (Bank of England, 2018). More recent estimates, using the same approach (see Holston, Luaubach and Williams (2017)) suggest around 1.75–2.0%. Our preferred estimate – based on Lubik and Matthes (2015) – would suggest a level of around 2–2.5%.

[10] Historically, £50 billion of quantitative easing has been thought as roughly equivalent to a 25bp move in Bank Rate. However, such rules are generally pretty poor guides to policy with the impact on yields of purchases historically highly contingent on market context. See Haldane et al. (2016) and Busetto et al. (2022).

When evaluating the likely impact, we think evidence is best broken down into three parts: recent experience, current evidence and (potential for) structural changes.

Figure 2.9. Two-year change in monetary policy stance



Note: Values denote the two-year change in the policy stance. Wu-Xia and Krippner show two estimates of the 'shadow policy rate' which account for the Effective Lower Bound constraint and the loosening impact of quantitative easing.

Source: ONS, Bank of England, Krippner (2013), Wu and Xia (2016) and Citi Research.

Lessons from recent experience

Beginning with the first, what does historical evidence imply regarding the impact of monetary policy on the economy? This is not as easy a question to answer as might be expected. For one, we know that monetary policy transmission takes time. Policy rates are also correlated with changes in wider economic conditions, which makes estimating the actual impact of higher rates more challenging.[11] The dynamics of pass-through are also contingent on the financial structure, balance sheets and pricing behaviour – meaning the precise dynamics can often vary.

That said, extensive work has been done on these questions. Some common conclusions are clear.

First, among the range of analyses that have looked at policy transmission in the UK, most point to large but protracted effects. This conclusion is robust to a range of different analytical approaches and periods.[12] In recent years, a reasonable 'rule of thumb' for a 1ppt increase in Bank Rate in the UK has a cumulative hit to activity (GDP) of between 0.6ppt and 1.2ppt, and a hit to inflation of between 0.8ppt and 1.5ppt over two to three years (Cesa-Bianchi, Thwaites and Vicondoa (2020)). Our own analysis[13] – using an 'event study' approach to identifying the effects of monetary policy changes[14] – suggests that a 1ppt increase in Bank Rate reduces output by around 0.8ppt and inflation by 1.25ppt (both within the broad range implied by the empirical literature). Together, that would suggest that the 5.15ppt increase in Bank Rate (so far) might be expected to reduce output by roughly 4–4.5ppt over two to three years compared with a scenario where rates had been held steady: a significant hit.

One factor that likely adds to the impact of the recent cycle here is that recent tightening has constituted a genuine policy 'innovation'. Many of the estimates above (including our own) rely on past monetary policy 'surprises' for identification. These are policy changes that cannot be explained on the back of either realised or expected data. The associated economic impact is therefore not just the mechanical impact of higher Bank Rate, but also the economic consequences of a genuine 'surprise' as to policymakers' behaviour. For this reason, it can be problematic to use these estimates in models based on foreign exchange (FX) based channels – as has sometimes been done (see Mann (2022)). And overall, we think such estimates are

[11] This is an issue known as confounding. Many of the different approaches taken to estimating the impact seek to derive valid instruments for monetary policy changes. In some cases, this involves regressing monetary policy changes against contemporaneous data and forecasts – to isolate 'independent' policy changes (see Romer and Romer (2004)). Others look at changes in market pricing around policy announcements (see Stock and Watson (2018)).

[12] For a review, see Cesa-Bianchi, Thwaites and Vicondoa (2020).

[13] Our approach takes the three-hour window around monetary policy events – including both MPC meetings and monetary policy speeches. The change in one-year swap price is then used to proxy monetary policy surprises. The surprises are orthogonalised versus recent data in order to avoid issues associated with systemic shifts in the data sensitivity of monetary policy (see Bauer and Swanson (2022)).

[14] This is based on the approach pioneered by Stock and Watson (2018).

marginal overestimates of the change in policy alone. However, we see this impact as (1) only marginal and (2) actually relevant in this case – with the response of monetary policy going well beyond what might have been expected on the back of the manifest data sensitivity of the last two decades. All else equal, this would suggest a larger effect.

The past is never a perfect guide to the future. But while the dynamics do vary, one of the striking elements of the historical studies on policy transmission is less their range, and more their consistency – especially when talking about the lags and ultimate effect. Studying the historical data for the UK in the 1970s, Friedman (1972) found a 23-month lead between M3 and inflation – not a long way from contemporary estimates. One important point to keep in mind is that monetary policy transmission seems to take longer in the UK to have an effect than in many other places.[15] That suggests patience is required to avoid overtightening or, as Milton Friedman described it, 'scalding yourself in the shower'. The overall impact is also relatively consistent across time periods, with most estimates of the 'investment–savings' curve coefficient (the sensitivity of aggregate demand to changes in rates) in the 0.6–1.3ppt range.

Indications from the latest data

As the MPC noted in August, monetary policy does now seem definitively 'restrictive' – rates are weighing on demand and slowing the economy. The transmission from policy to inflation comes via five steps: policy rates to financial and credit conditions; credit conditions to demand; demand to labour market slack; slack to unit costs; and unit costs to inflation. More detail on the relative channels of monetary transmission is given in Box 2.2.

Given the recency of the hiking cycle, we think the UK is only now starting to transition from stage one to stage two. The labour market has begun to loosen. But as we discuss below, that probably has little to do with monetary policy tightening as yet – with policy transmission into the labour market usually a little slower here than, for example, in the US.[16]

[15] For a comparative study of the US and the UK based on the 'narrative' approach, see Cloyne and Hürtgen (2016).

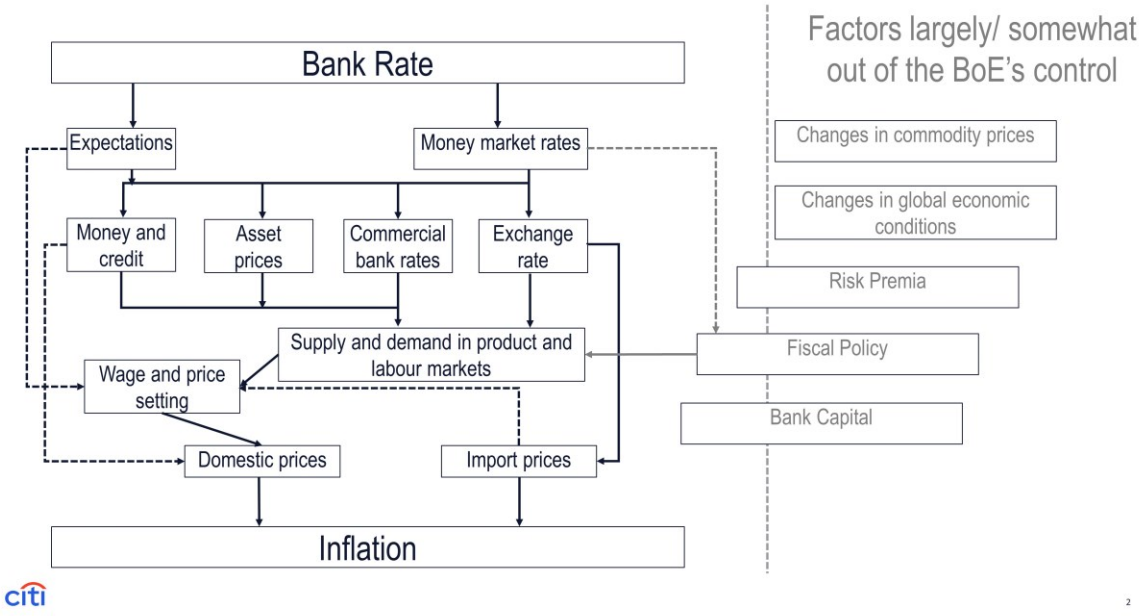
[16] Crucially, this all depends on the behaviour of the labour share in a hiking cycle. In the US, there is a small increase, but firms generally respond relatively quickly to an adverse demand shock by cutting staff in order to protect margins. The implication is relatively fast pass-through, and a steeper wage Phillips curve. In the UK, the increase in labour share is generally greater as firms first respond by cutting margins, and only then cutting staff. The implication is a flatter wage Phillips curve. This is perhaps the single most important reason in the UK why transmission can take time, with real product wages in the US strongly pro-cyclical, whereas in the UK they can, under the right circumstances, be marginally counter-cyclical – at least initially. For more discussion, see Cantore, Ferroni and León-Ledesma (2020) and Rudd (2021).

Box 2.2. Channels of policy transmission

There is a range of mechanisms through which policy affects economic activity and, ultimately, inflation. Generally, these are summarised under five broad groupings:

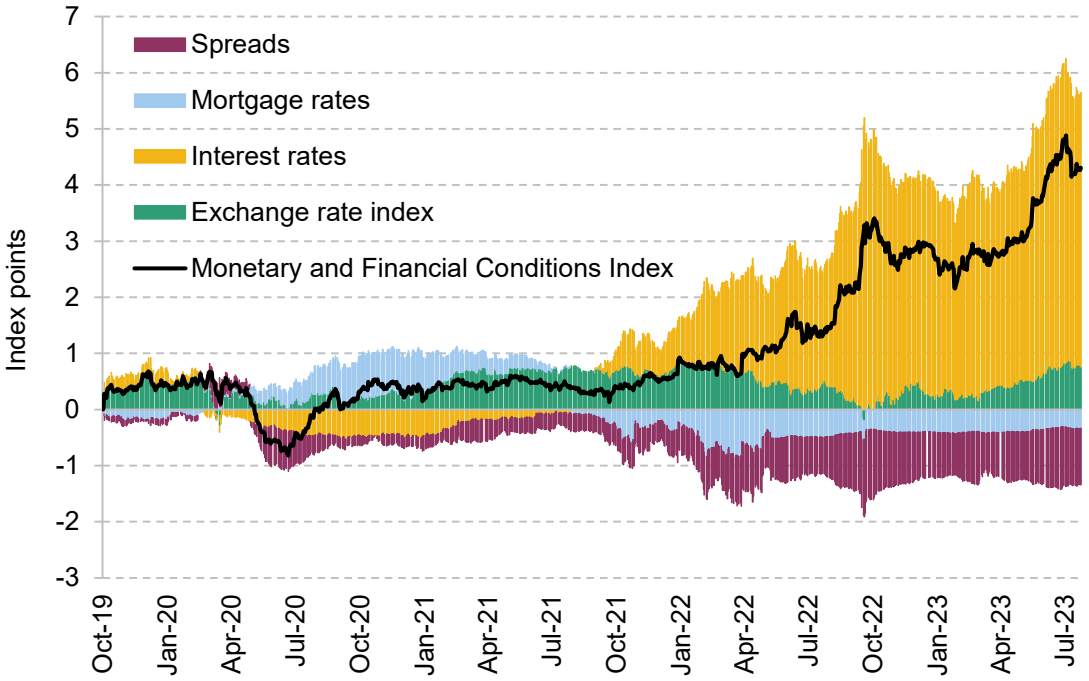
- **Conventional interest rate channel.** Here policy works by incentivising households and firms to defer consumption and investment, increasing the cost of capital and boosting the return on saving today, in order to consume tomorrow.
- **Cash-flow and credit channel.** This channel assigns particular weight to the income loss associated with policy tightening. Here policy increases debt servicing burdens, weighing on income while also driving a deterioration in credit quality. Both effects weigh on aggregate spending.
- **Asset price channel.** Higher rates generally weigh on the price of both real and financial assets. As asset prices fall, this weighs further on investment, while also driving a margin of balance sheet repair, boosting saving weighing further on demand.
- **FX channel.** An increase in interest rates, all else equal, generally supports the exchange rate, reducing the price of imported goods versus their domestically produced counterparts while also boosting the price of exports – weighing on demand overall.
- **Fiscal channel.** An increase in interest rates narrows the gap between growth and nominal interest rates, incentivising policy to run a smaller primary deficit (or indeed a larger surplus). These effects have been compounded by quantitative easing in recent years, which has shortened the effective maturity on government debt.

Figure 2.10. Schematic of monetary policy transmission



Source: European Central Bank and Citi Research.

Figure 2.11. Monetary and financial conditions, October 2019 to August 2023



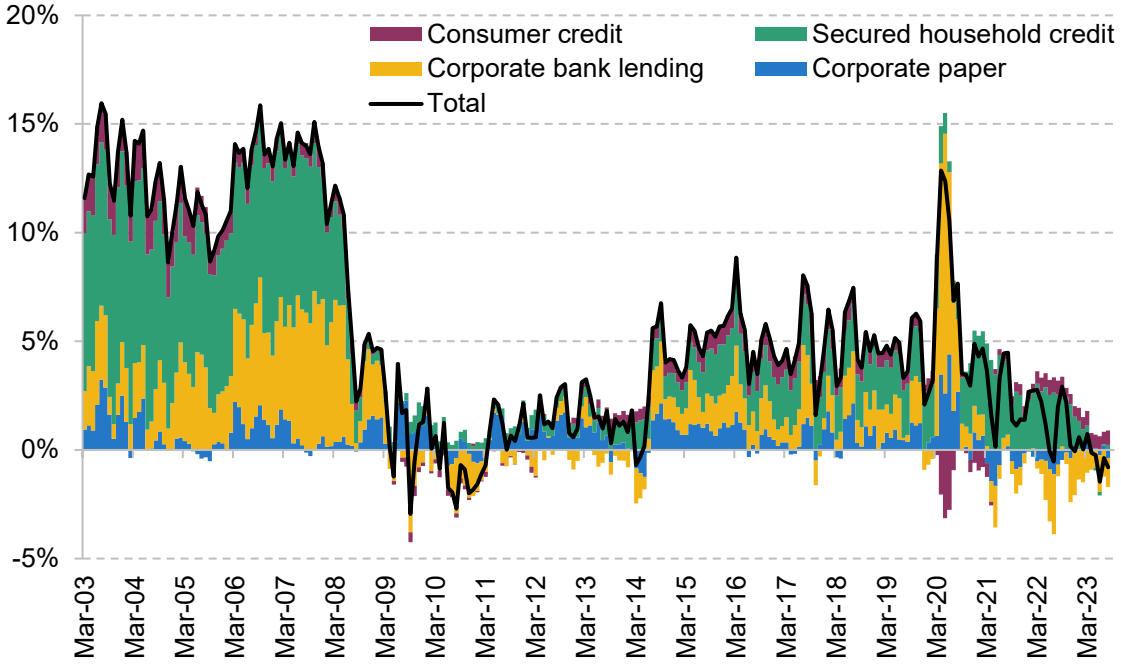
Note: In this approach, changes in various financial indicators – including the exchange rate, various swaps, and some other asset prices – are weighted by their impact on GDP. For more information, see Bank of England (2021).

Source: Citi Research, ONS, Bloomberg LLP and Bank of England.

But financial conditions are tight. And there is growing evidence this is now feeding into activity in interest-sensitive sectors. On the former, Figure 2.11 shows a composite measure of daily financial conditions in the UK since the end of 2019, weighting each component according to its historical impact on UK activity. A higher (positive) value indicates tighter financial conditions. These have clearly tightened aggressively. This is increasingly echoed in survey measures of credit conditions. The Deloitte CFO survey, for example, suggests the cost of credit is now at its highest level since Q4 2008. For households, the availability of new secured credit fell at a rate comparable to that during the GFC in the second half of 2022, according to the Bank's Credit Conditions Survey, while the cumulative deterioration in unsecured credit seems a little greater.

The clearest evidence of the effect of monetary policy can be found in Figure 2.12. This shows net credit growth on a three-month average basis for the household and corporate sectors combined. Conventionally, policy weighs on credit growth, spending power, and then demand. And in recent months, credit growth has dropped to levels only previously observed during the 2009/10 Credit Crunch. The financial sector is now considerably stronger than then, with weakness instead reflecting weak (credit) demand. With cash buffers exhausted, surveys increasingly show that higher rates and weak credit are now weighing on activity.

Figure 2.12. Net credit impulse (% of GDP, three-month moving averages), 2003–23



Note: The chart shows net new borrowing either via bank lending to corporates, corporate paper, or lending to individuals on a secured and unsecured basis. It shows three-month moving averages as a share of nominal GDP.

Source: ONS and Bank of England.

This should give policymakers confidence their actions are having (and will have) the desired effect. In theory, two factors can mediate the impact of nominal policy rates on the economy. The first is inflation expectations which, if higher, would suggest a higher nominal interest rate is required to achieve the same extent of demand destruction. The second concerns the actual real structure of the economy, which can make demand more or less sensitive to changes in debt servicing costs. We discuss this in more depth below, but three variables matter here: labour-augmenting productivity growth; sensitivity of aggregate demand to interest rates – and by extension how this sensitivity is affected by wealth inequality; and the fiscal reaction function. Overall though, if either argument were to apply here, this would be reflected first and foremost in stronger credit demand. The fact these data remain very weak suggests both real and nominal equilibrium rates remain relatively low.

Structural changes

It is worth dedicating some more time to the question of whether the impact of higher rates on spending, activity and inflation has become structurally less. While we think there are good reasons to expect pass-through to prove slower than at other times in recent history, it would probably be a mistake to conflate this with a smaller ultimate effect – with the three main determinants of R* (productivity growth, interest sensitivity, and 'time preference'), we think, broadly unchanged (on R*, see footnote 9).

In the first case, we think three factors have likely slowed the sensitivity of activity to policy.

First, paradoxically, is the expansion in macroprudential policy. Since the Great Financial Crisis, central banks and financial regulators have worked to ensure commercial banks in particular are resilient in a range of adverse scenarios – including higher interest rates. As a result, many in the financial system hold significantly more liquidity. This has combined with work that has sought to bolster creditworthiness – in particular by demanding more stringent conditions around mortgage lending.[17] In recent months, there have been financial stability issues both in the UK sovereign debt market and among US regional banks. But these measures have reduced the risk of a system-wide liquidity squeeze which can bring hiking cycles to a very sudden stop.[18]

Second is a reduction in household floating-rate liabilities. By far the largest change here is the shift in mortgage market structure. The share of outstanding floating-rate mortgages has declined from a little above 70% in 2012 to just 15% today. This shift accelerated through the pandemic, with an extension of the modal mortgage lending maturity from two to five years (see Figure 2.13). Combined, this slows the rate at which monetary policy tightening impacts household cash flows. We estimate that, at this stage, the increase in household mortgage costs is only around half what would have happened if the mortgage market structure had remained similar to that in 2008. There is a similar story here on the corporate side too, where there has been a significant shift away from Bank to non-Bank corporate finance (Hauser, 2023). The latter also tends to be refinanced only periodically, slowing transmission.

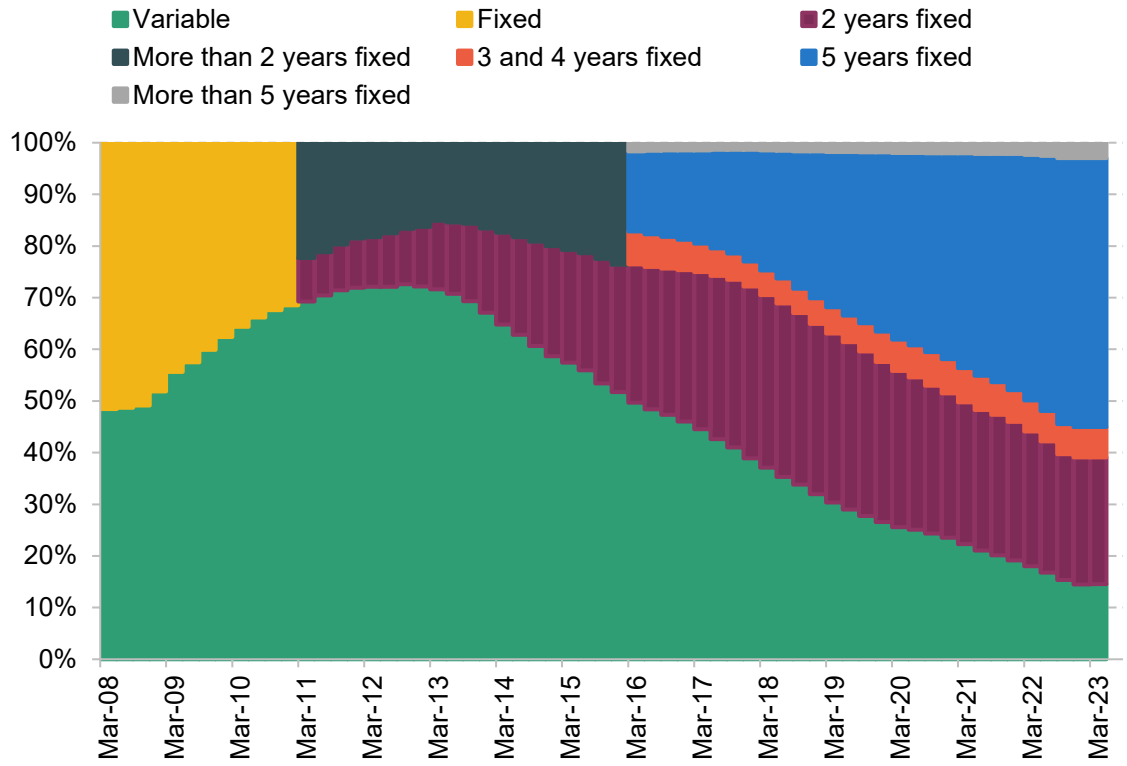
Third is a shift in the net balance of interest-bearing liabilities. The net balance here across the private sector is also stronger than in the years ahead of the GFC. The share of mortgaged owner-occupied households, for example, has fallen from 32% in 2012 to 28% now, according to the latest ONS data, as the population has aged. Households and firms, at least in aggregate, stand to *gain* more from higher interest rates than in previous cycles, even if they remain net losers overall. Alongside the shift in maturity, the implication has been to provide households and firms with a front-loaded boost in the form of net interest income. This has also slowed the rate at which higher rates begin to drag on spending power.

Given these changes, why might the impact of the hiking cycle not ultimately prove to be smaller?

[17] One example of such a regime is the Financial Conduct Authority's Responsible Lending Requirements which require lenders take appropriate due diligence over creditors' ability to pay.

[18] One way of thinking about this is in terms of equilibrium interest rates for aggregate demand (R*) and the level of rates required to ensure sufficient liquidity across the financial system (R**). In the right circumstances, such as poor asset quality, the two rates can diverge – see Akinci et al. (2021).

Figure 2.13. Structure of owner-occupied mortgage market



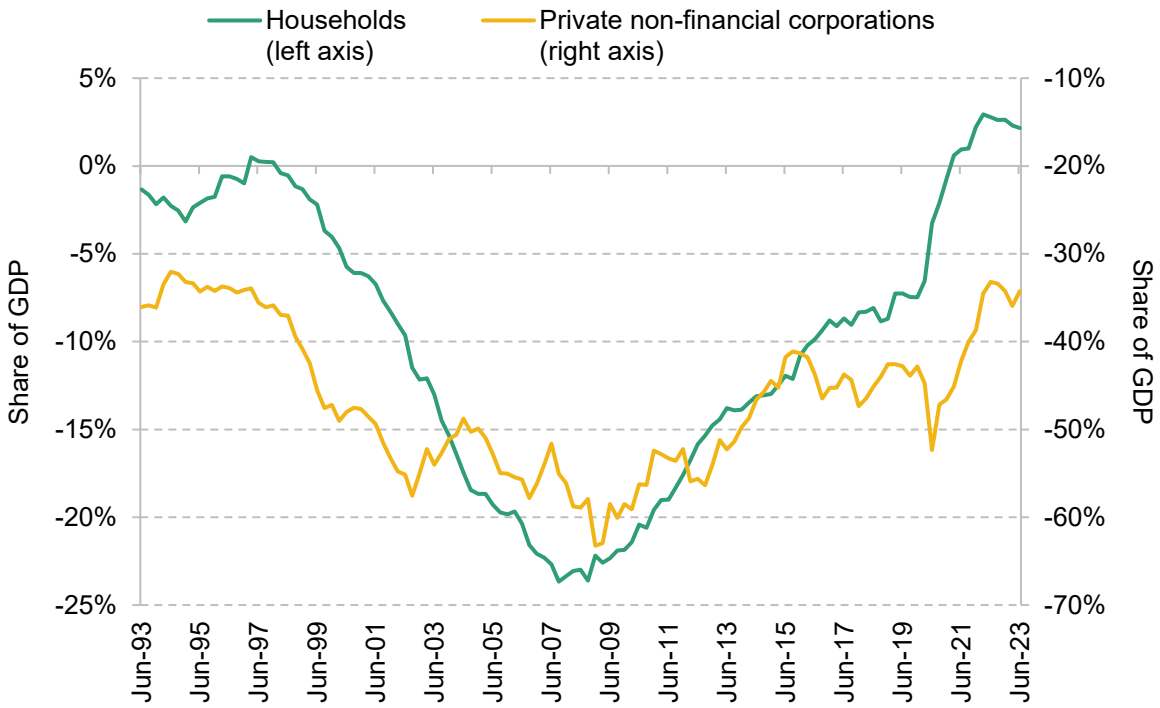
Note: Chart shows share of outstanding mortgage lending at different maturities.

Source: Bank of England, ONS and Citi Research.

First, while the net asset position is better than in the late 2000s, it is not out of the realm of experience through historical hiking cycles. Figure 2.14 shows the net position of the UK corporate and household sectors among assets of an interest-bearing character. The net balance of interest-bearing assets and liabilities is considerably stronger – particularly for the household sector – than in the run-up to the GFC. However, the difference versus the early 1990s, for example, is only marginal. Through the 1990s, higher policy rates still had a meaningful adverse effect on demand.

Second, while aggregate interest income matters, the primary reason why cash flows tend to weigh on aggregate demand is more to do with the varied distribution of cash-flow effects. We know, for example, that the effects on consumption associated with an adverse income shock tend to be greater than positive ones (Bunn et al., 2018). We also know that the impact of an adverse income shock is greater among debtors. The impact of rates has therefore tended historically to hinge more on these characteristics, than on aggregate, net interest income (Mian, Straub and Sufi, 2021).

Figure 2.14. Firm and household interest-bearing holdings and liabilities (% of GDP)



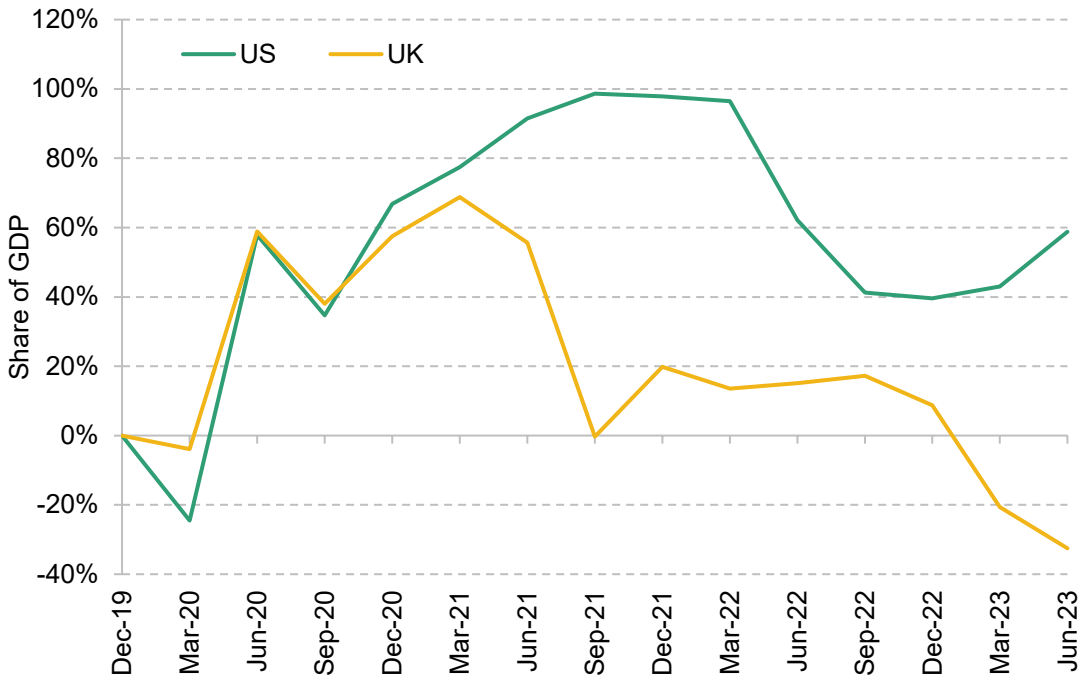
Note: Interest-bearing assets are defined as either deposits, loans or debt securities.

Source: ONS and Citi Research.

Even after the exceptional shocks of the past few years, there is little evidence to suggest these distributional characteristics have shifted. As we noted in last year's Green Budget, household saving has remained heavily regressive, with wealth inequalities widening rather than narrowing. A more intuitive way of thinking about recent developments is probably in terms of age. The largest increase in interest-bearing assets seems to have been amongst older households, with debt still carried by younger working-age groups. In that sense, the costs and benefits of higher rates are still hitting different groups and are still weighing amongst those with a larger propensity to spend. Older households are more likely to gain from higher interest rates but have a lower propensity to spend out of such gains; younger households are more likely to lose from higher rates, and are more likely to reduce their spending as a result.

Third, while households and firms are holding more interest-bearing assets than in the past, their overall net wealth has deteriorated. This is not a uniform cross-national pattern. In the US, private sector net wealth is well above pre-pandemic levels (following substantial transfers from the public to the private sector). But in the UK, it is below (primarily owing to the inflation-driven erosion of financial wealth, and weaker real asset values) – see Figure 2.15. This is true for both firms and households, with some evidence this is already acting to keep private sector saving elevated – even as COVID-related effects have faded (see Figure 2.43 later).

Figure 2.15. Changes in net worth of the non-financial private sector (excluding pensions): UK and US



Note: The chart shows the change in net worth of the private non-financial sector since the start of the pandemic (Q4 2019), measured as a share of GDP. In both the US and UK cases, pension entitlements have been excluded from the calculation on grounds of relevance. In the UK's case, corporate real assets have been calculated by taking the total nominal value of the market sector and multiplying it by the GOS share of non-financial corporates. The chart shows the cumulative percentage point change since Q4 2019 in terms of a share of GDP. UK data are taken from the ONS accumulation accounts; US data are from the Federal Reserve system.

Source: Federal Reserve, ONS and Citi Research.

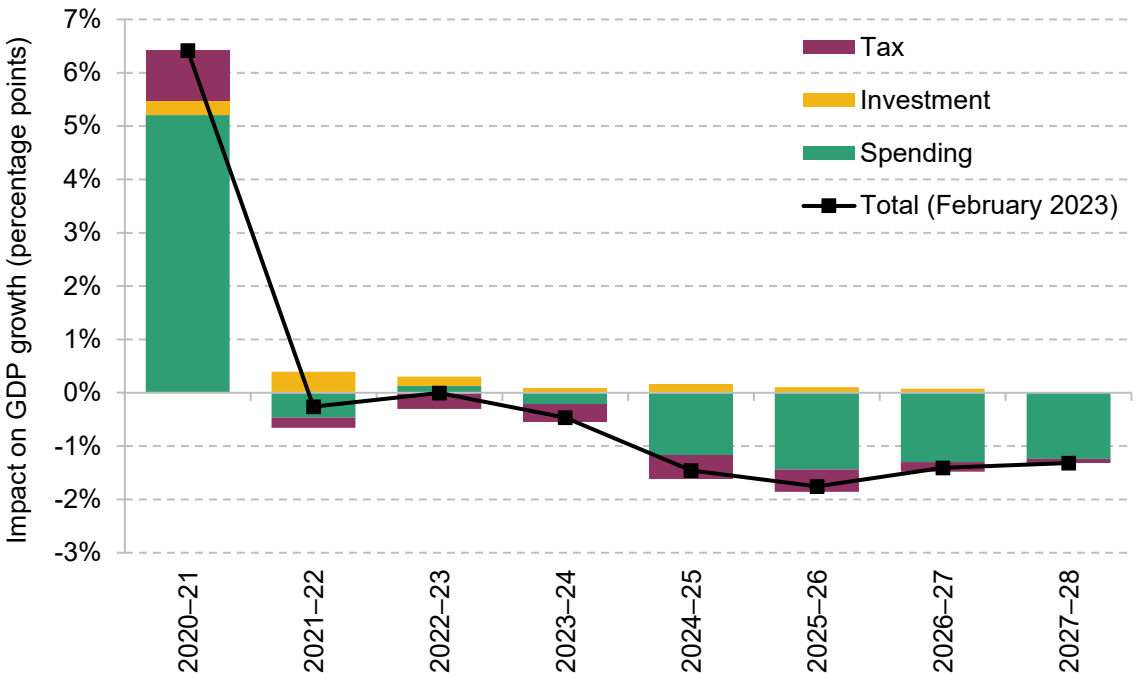
The implication of an older workforce in particular means the economy might be less exposed to the *cash-flow* effects of higher interest rates, but the impacts via asset prices could be more severe given the weaker starting point. This is a key point of departure for the outlook ahead. While these lags on asset price transmission tend to be longer, the overall impact of higher rates on demand should be no smaller, with transmission dynamics instead more unpredictable, internationally sensitive[19] and harder to reverse.

To sum up, we think policy is at something of an inflection point. While rates have been increasing for the best part of two years, we are only now entering the period at which transmission is meaningfully beginning to bite – removing a decade of exceptional monetary accommodation. From here, pass-through could turn somewhat bumpier as asset price channels

[19] Specifically, here, work that has looked closely at the international transmission of monetary policy across jurisdictions has suggested a bank lending and portfolio channel, both of which will likely impact asset prices. See Buch et al. (2019).

begin to kick in. At the same time, fiscal policy is turning less supportive (see Figure 2.16). Coordinated tightening of both monetary and fiscal policy has rarely turned out to be good news economically.

Figure 2.16. Estimated impact of discretionary fiscal decisions on annual GDP growth



Note: The chart shows the growth effect of all discretionary fiscal measures taken since the onset of the pandemic and excludes automatic stabilisers. Multipliers are assumed to be 1 for public investment, 0.6 for public spending, 0.5 for benefits and 0.3 for tax cuts. Each is assumed to fade only gradually over a five-year period.

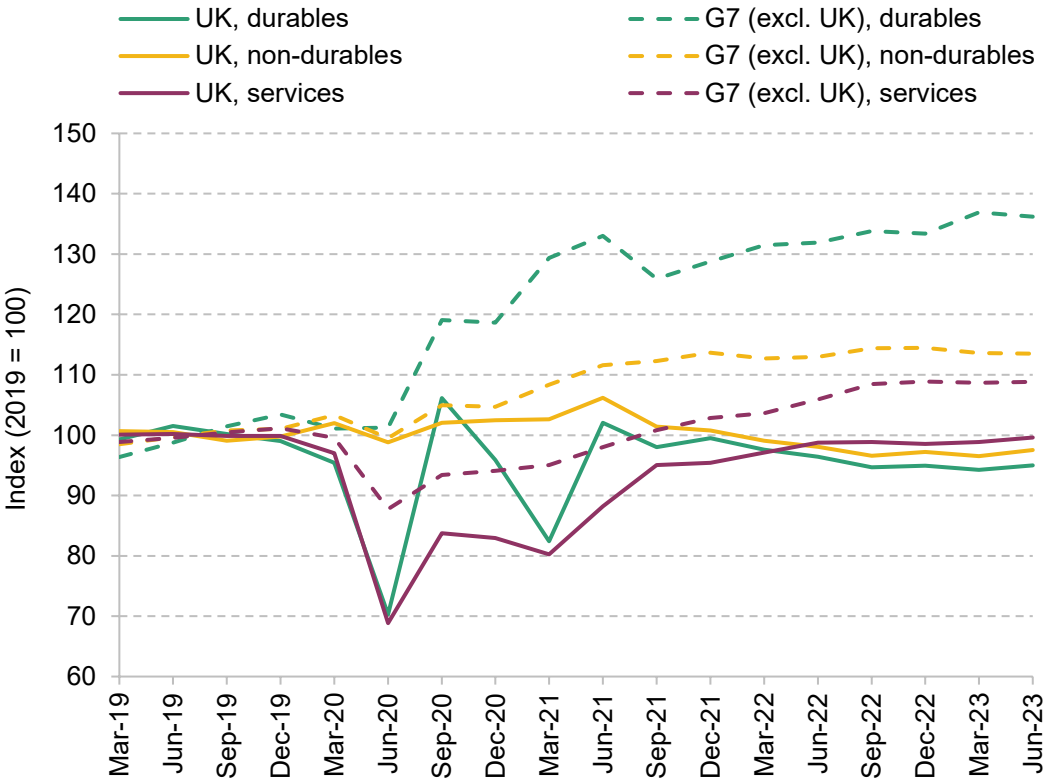
Source: OBR, ONS and Citi Research.

The outlook for households: this is going to hurt …

How are these dynamics likely to impact the household sector? For the UK, this is, as always, the single most important question – with private consumption responsible for more than 60% of total output. We expect consumption to stagnate across 2024 and 2025.

UK households have been on a wild ride in recent years. Lockdowns initially drove a compositional shift in household spending from services towards durables and essentials – alongside a boost to net saving – though to a lesser extent than in other countries (Figure 2.17). In the period since, services consumption has been making up lost ground – with the cumulative recovery here now stronger than for either goods category (again somewhat unusually compared with the experience elsewhere). But relative to comparator countries, the level remains weak. This is mirrored in subdued consumer confidence and real income figures that, in the latter case, have now been subject to a multi-year squeeze.

Figure 2.17. Compositional changes in household spending: G7



Note: The solid lines show an index of real consumption broken down by category. The dotted lines show the ex-UK G7 average, weighted by nominal GDP.

Source: ONS, national statistical offices and Citi Research.

Four factors are likely to determine the outlook: real income growth; interest rate pass-through; developments in household balance sheets; and the outlook for house prices.

Real income growth

Beginning with incomes, we think households have not yet escaped the clutches of a once-in-a-generation real income squeeze. With the labour market relatively stable, consumer confidence has increasingly become a barometer for household real income dynamics. These data have contracted for five of the six published quarters since Q3 2021. In more recent months, the picture has been looking somewhat better, with incomes supported by a significant acceleration in wage growth, a reduction in imported prices – especially energy – and an improving trend in aggregate labour market participation. Real household gross income growth – including property income – will we think total 2.7% year-on-year in Q3, after growth of 3.4% in Q2. Excluding property income, we expect the figures to fall to 3.5% and 1.8% in Q3 and Q4, although only after large reductions through 2022.

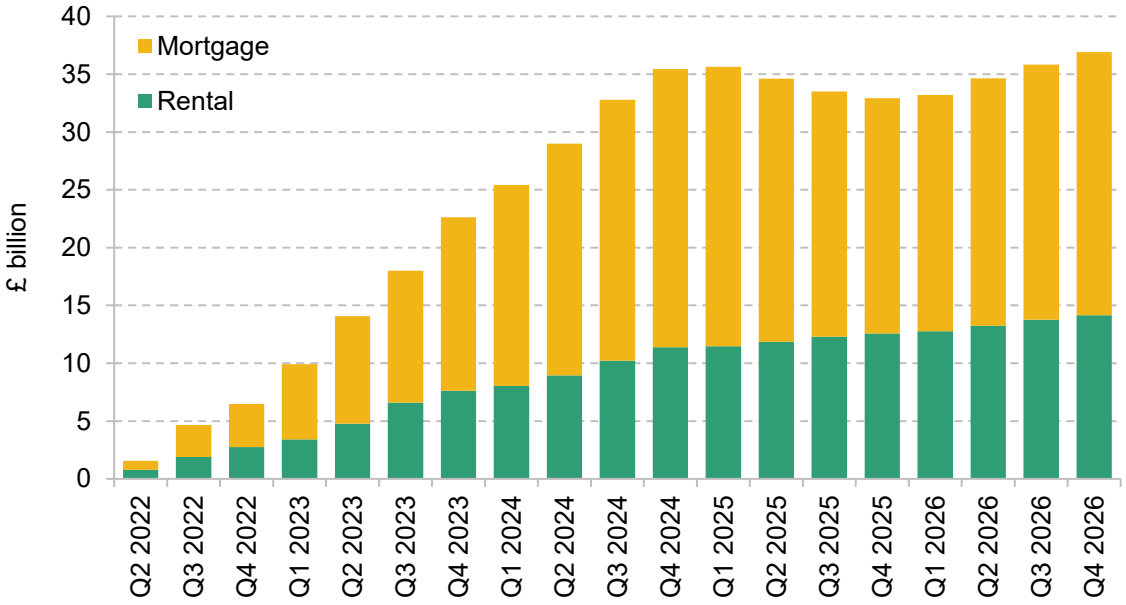
However, we think this is plausibly as good as it will get. Even as inflation comes down, households will have to contend with the further withdrawal of energy support and a growing

margin of fiscal drag, as a range of tax thresholds are frozen in cash terms (see Chapter 4). Household incomes are also being supported by bonus and backpay settlements. The former may be repeated next year, but the second are unlikely to be – meaning a further £3 billion headwind. Overall, while we expect year-on-year nominal pay growth of a little over 5% in Q2 2024, real household disposable income will, we think, be down by around 1.9%. Uncertainty around the trajectory for nominal wages remains, but the headwinds above would suggest nominal wage growth of nearly 6–7% would be required in Q2 2024, just to sustain real incomes, let alone drive further growth.

Pass-through from higher rates

A core component of these fluctuations is changes in interest income. As we noted above, households have thus far banked a dividend as (1) deposit rates have increased and (2) more have shifted from sight to time deposit products (i.e. those where money is not immediately available on demand, but locked in for a pre-set period of time). In total, net interest income for UK households has increased by around £8 billion per year since the end of 2021. But having banked the dividend, the focus is now likely to shift to the liability side of the balance sheet. We currently expect owner-occupied mortgage debt servicing to increase by £24.1 billion cumulatively between Q2 2022 and Q4 2024 (in annualised terms). This assumes the refinancing of roughly £474 billion of fixed-rate agreements, alongside the continued updating of

Figure 2.18. Cumulative change in housing costs, relative to Q1 2022



Note: For mortgagers, these data include only owner-occupiers, so as to avoid double-counting effects with rental costs. These numbers are conditioned on Bank Rate increasing to 5.25%, and then rapid cuts from Q2 2024.

Source: FCA, Bank of England, ONS and Citi Research.

£237 billion in floating-rate deals. Rental costs constitute a further £13.4 billion hit as higher financing costs for landlords are passed on. Combined, this suggests a hit to incomes of around £38 billion (or 2.3%), of which £9.3 billion has already materialised. Importantly, even as rates fall, these changes will struggle to reverse – with many households in recent months seemingly opting to re-fix at higher rates (rather than move to a floating arrangement)[20] (see Figure 2.18). Large cuts in interest rates are likely to be required to have any notable effect.

Households are taking evasive action. Early repayments have accelerated, while the number of new mortgages with a principal repayment term greater than 35 years, versus the more conventional 25 years, has increased from 5% to 11% since 2021 (Bank of England, 2023a). We expect the proportion to increase to 15% over the coming months.[21] Even so, that would suggest only marginal support overall – deducting a little over 0.6ppt from the 15% cumulative increase in mortgage debt servicing we expect over 2023–24 (i.e. around 4% of the total cumulative increase in mortgage costs).[22] This is also just one part of households' exposure to higher rates.[23]

Household balance sheets

A third, related, issue concerns the net balance sheet position of households. As we noted in last year's Green Budget, the increase in household savings since the onset of the pandemic is concentrated among high-income and older households. And from here, those suffering the largest increase in their debt servicing costs are unlikely to be those with the largest accumulation of financial assets. Any hopes that balance sheets could offer a bulwark against either higher rates or a broader softening in demand seem low.

In fact, household balance sheets increasingly appear to be in a *weaker* position than pre-pandemic. This was already partly reflected in Figure 2.15, which showed the net balance sheet deterioration for both non-financial corporates and households combined. Our best measure of aggregate household net worth has fallen through the pandemic as a share of GDP, down now around 15ppt of GDP from Q4 2019 levels (Figure 2.19). Compared with the pandemic peak, the actual scale of household net worth has fallen further – a little over 80ppt. Given the growing

[20] The latest data from the Financial Conduct Authority (FCA) show just 16% of new lending (overall) is based on variable-rate tariffs, with 84% of all new lending still on fixed tariffs. See the FCA's latest MLAR statistics at https://www.fca.org.uk/data/mortgage-lending-statistics.

[21] This in part reflects the option provided under the Mortgage Charter to move to interest-only repayments for a short period. For more information, see HM Treasury (2023).

[22] To understand why the relief is relatively marginal, assume an outstanding mortgage balance of £140,000 – roughly the national average. An increase in your lending rate from 2% to 5%, on a 25-year term, means an increase in monthly repayments of £350 – from £700 to £1,050. An extension of the repayment term to 35 years would mean only a £216 increase. However, with only 3% of mortgages renegotiated per quarter, and only 10–15% of households making use of this provision, the impact on mortgage debt servicing is relatively limited overall.

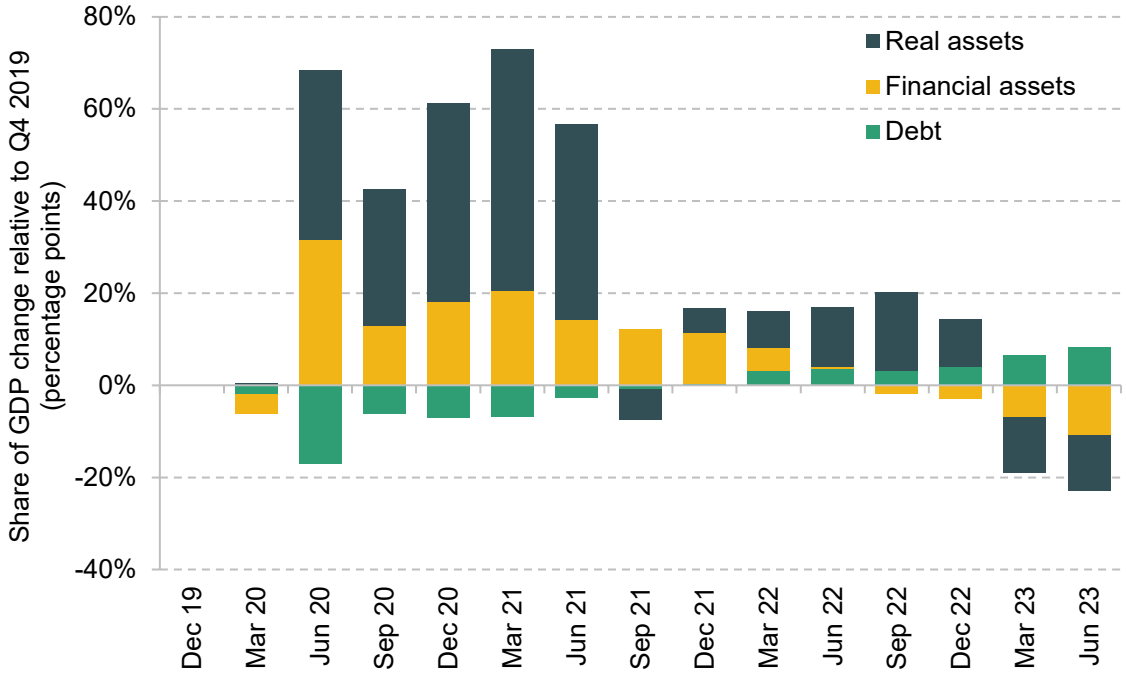
[23] These include £215 billion in outstanding credit card, auto and other unsecured credit. So far, effective rates on outstanding liabilities have increased 2.8% in the first case and 2.0% in the last case according to Bank of England data, although we think further increases are likely to come.

concentration of workers aged 50+ (who tend to have a higher net worth), the deterioration versus a demographically adjusted equilibrium is likely even greater. We think this implies a particular sensitivity to further asset price deterioration. Here we see two further reasons to be cautious with respect to the potential impact:

- **Workforce ageing.** Since the financial crisis in particular, the UK workforce has been getting older – with 32% of employment now over the age of 50, versus 27% in the months before the Great Financial Crisis. This leaves household behaviour more sensitive to changes in asset prices, as 'target savings' behaviour increases.
- **Fewer defined benefit pension schemes.** Private sector defined benefit pension provision has also been systematically falling. This further increases the extent to which households have been forced to self-insure, primarily via housing and financial assets.

In both cases, we think this leaves UK demand structurally more sensitive to changes in asset prices. A deterioration here now has the potential to cast a more powerful economic shadow.

Figure 2.19. Change in total household net worth since Q4 2019



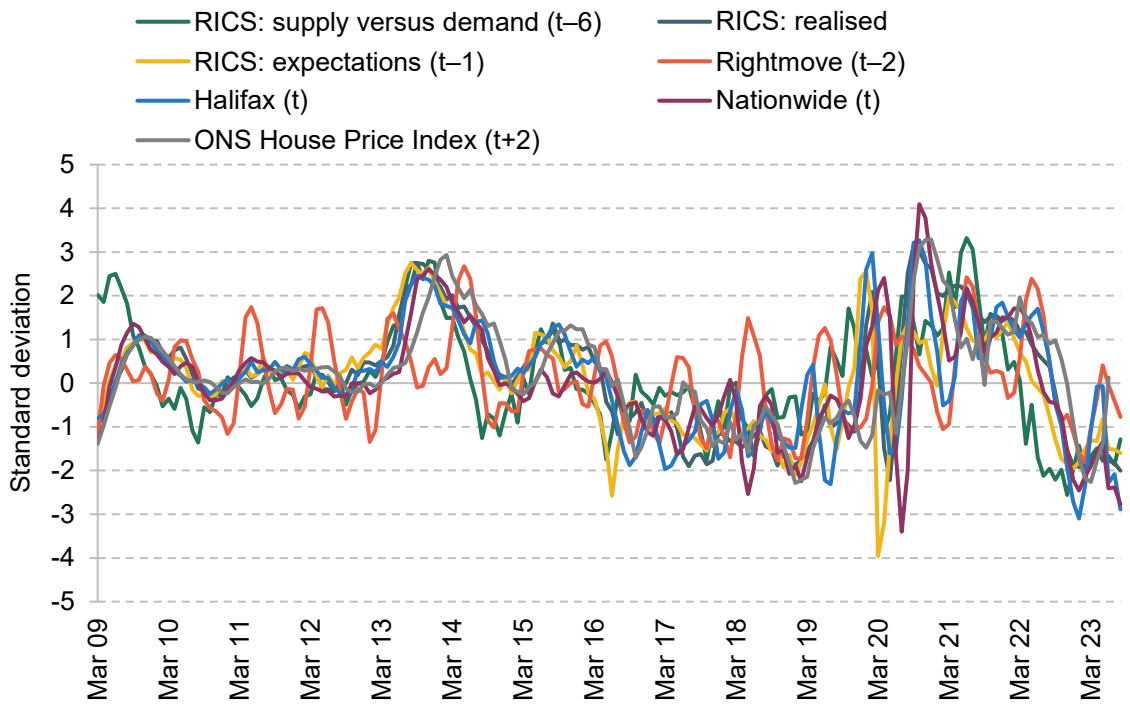
Note: This measure is derived using the ONS accumulation accounts. Measures include financial assets/liabilities, as well as housing wealth, measured as average house price multiplied by owner-occupied private ownership. Pension wealth is excluded. The chart shows the percentage point change versus Q4 2019 as a share of GDP.

Source: ONS and Citi Research.

The outlook for house prices

The outlook for house prices is therefore particularly important. Our forecasts are conditioned on a further 5.5% fall in nominal house prices. This assumes a relatively abrupt pivot towards cuts in Bank Rate next year – certainly compared with the Bank's current briefing – and only limited impact from the increase in unemployment we think is to precede it. This is about as good as it could get. If inflation requires rates stay higher for longer, house prices could easily fall by more – as we discuss below. We expect housing investment to remain weak across both 2024 and 2025 – we expect growth of –16.4% in 2024 and 3.1% in 2025 – similar to during the GFC. The latest data surrounding house prices point to an outlook that remains relatively subdued. The UK has a range of data that track asking, agreed and exchanged prices in real time. While some of these forward indicators picked up at the start of the year, much of the data have since fallen back. The two best leading indicators of the market at the 6–12-month horizon – namely, the balance of supply and demand in the RICS survey, and loan growth – are still consistent with a continued nominal fall (see Figure 2.20).

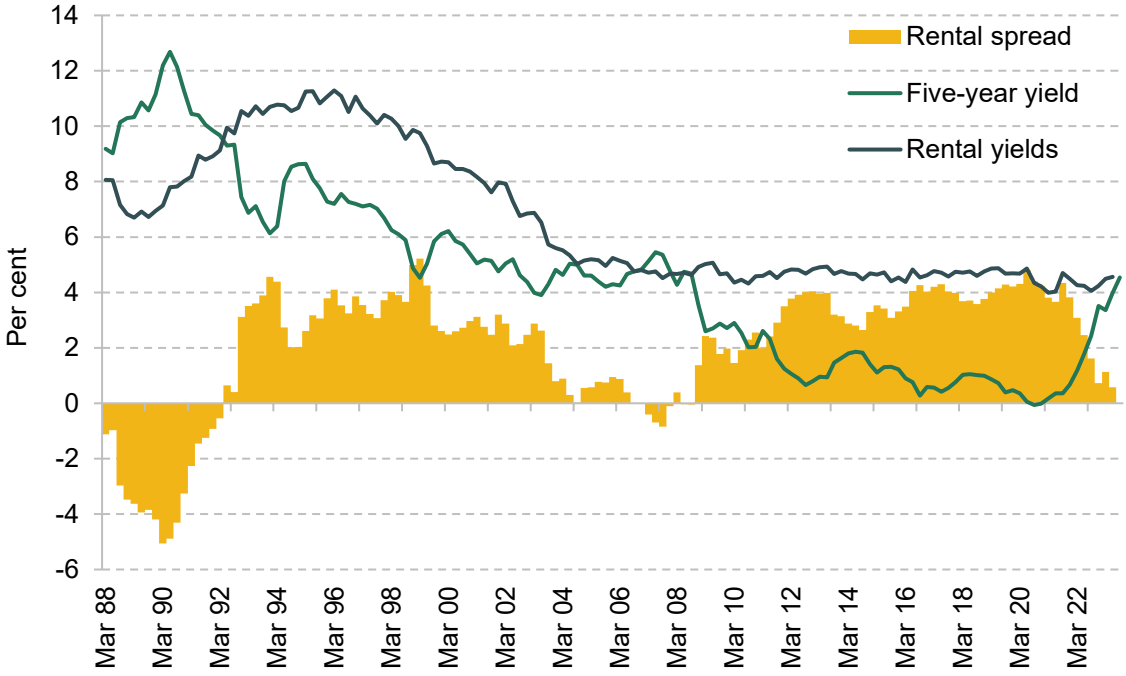
Figure 2.20. Indicators of house prices



Note: Each series is lagged by the leading/lagging relationship to Nationwide and Halifax agreed house prices.

Source: RICS, Nationwide, Rightmove, Halifax and ONS.

Figure 2.21. Rental yields and risk-free rates



Note: Rental yields are calculated by taking the actual rentals for housing index and dividing by average house prices. This is then indexed to a series of historical rental yields calculated by the Bank of England (and used in Miles and Monro (2019)).

Source: Bank of England, ONS and Citi Research.

Looking forward, we see three large downside risks:

- First is a shift in medium-term rates expectations. A 1ppt increase in real long-term interest rates is, in our model, sufficient for a 15% reduction in real house prices.[24] While house prices have eased sharply relative to their post-COVID peak, they remain in real terms (i.e. relative to the private consumption deflator) in line with those in 2019. This combination would suggest substantial reductions are still to come. In our view, these are likely to be curtailed by (1) beliefs that rates are set to fall and (2) actual policy cuts from Q2 of 2024. But a sharper reduction than we currently expect is plausible.
- Second is selling in the buy-to-let sector. This would have the effect of 'forcing the issue' as far as medium-term rate expectations and valuations are concerned. The gap between rental yields and the five-year risk-free rate (a proxy for the profitability of rental properties with buy-to-let mortgages) has narrowed substantially in recent months (Figure 2.21). Rising mortgage rates also increase the extent to which recent tax increases adversely affect landlords. In the short term, many landlords are likely to be unable to increase rents by

[24] Note that while Bank Rate has increased by 5.15ppt over the recent hiking cycle, rates are subsequently expected to fall back, and so this is not the same as an increase in long-term rates of the same magnitude. These numbers apply only over the medium to longer term too. See Miles and Monro (2019).

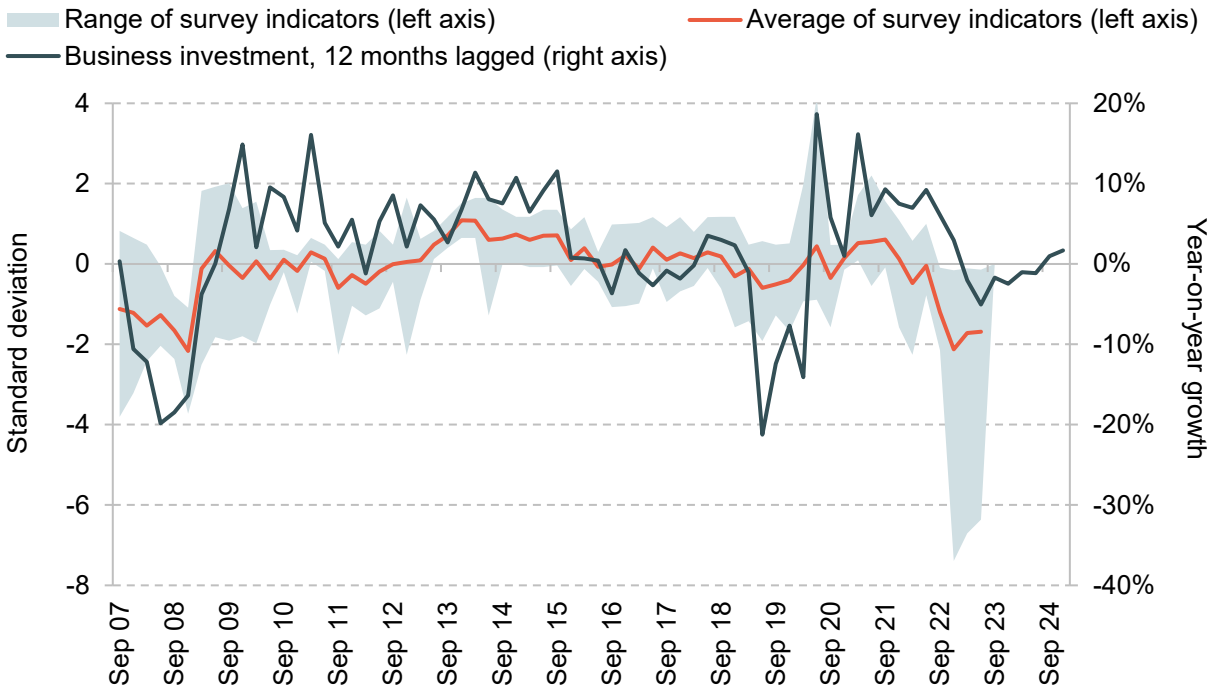
enough to cover the increase in their financing costs, and some may find themselves in a position of 'negative carry'. This may force some to sell.

- Third is a more sudden increase in unemployment. As we discuss below, UK unemployment rates have already increased by nearly a percentage point in 12 months. Further increases could begin to feed back into forced selling and a further reduction in house prices. This risks an ugly combination of precautionary household behaviour and deteriorating balance sheets.

The outlook for firms: a question of solvency

For the corporate sector, the issue is one of profitability and – for some – viability. Specifically, with profitability still highly dispersed across sectors and regions, the question in our view is whether broader weakness and higher rates now precipitate a further acceleration in rates of insolvency, or whether some of these embattled sectors can stage something of a recovery.

Figure 2.22. Indicators of business investment

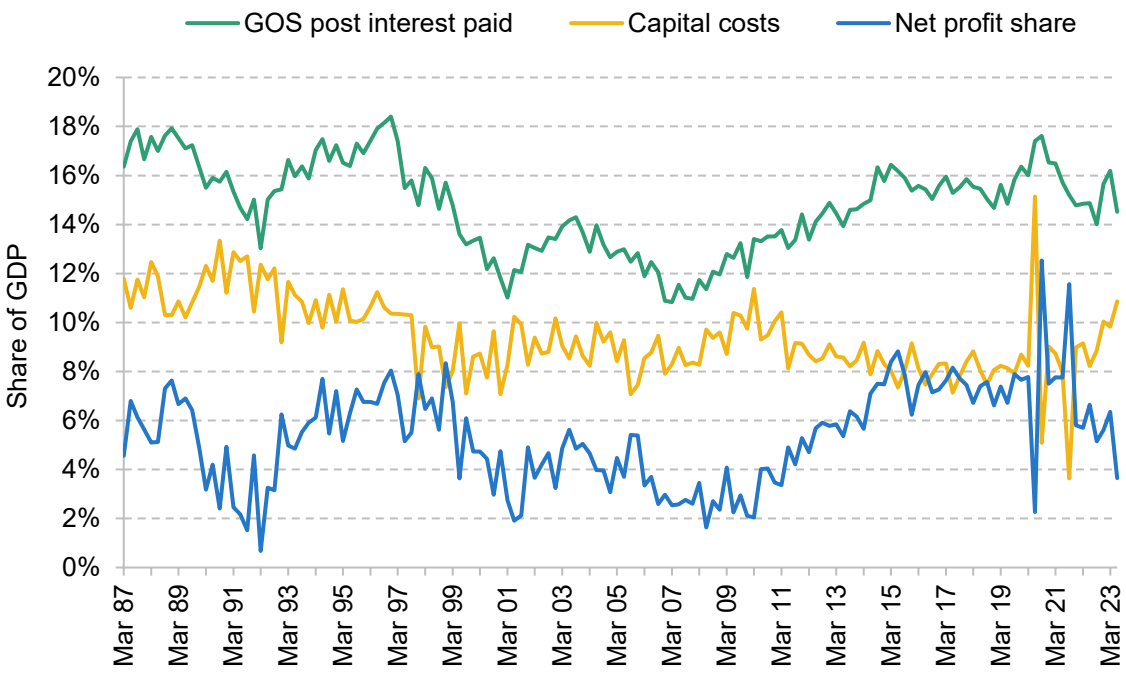


Note: Survey indicators include measures from the Bank of England, CBI, Deloitte and the ICAEW.

Source: Bank of England, CBI, Deloitte, ICAEW and ONS.

As with households, business sentiment has been volatile, but ultimately subdued. Figure 2.22 plots realised business investment alongside a range of different business sentiment and investment indicators. Notwithstanding an initial pick-up in 2021, sentiment has then proven consistently poor – deteriorating in recent quarters. Business investment has been commensurately weak – if boosted temporarily in recent quarters by stronger aircraft orders and temporary tax supports. Unfortunately, we think further weakness likely lies ahead. We currently expect business investment to fall by 2.8% in 2024, with growth of 0.1% and 2.5% in 2025 and 2026.

Figure 2.23. Adjusted PNFC gross operating surplus



Note: 'GOS post interest paid' measures gross operating surplus of non-shelf UK PNFCs, minus interest paid. The 'capital costs' series shows further deductions associated with changes in the consumption of fixed capital, GFCF deflator and 10-year yield (opportunity cost). 'Net profit share' is a measure of the residual 'bottom line'. The approach here is based on Hall and Jorgenson (1967).

Source: ONS, Hall and Jorgenson (1967), Barkai (2020), Piton, Yotzov and Manuel (2023) and Citi Research.

We think three factors explain recent poor performance.

First is weakness in corporate margins. While much has been made about 'greedflation' in the US (Weber and Wasner, 2023) and elsewhere (Ragnitz, 2022), in the UK this is more of a sectoral than aggregate issue (Bunn et al., 2022). Instead, at least looking across the economy, supply and cost shocks that have buffeted the UK's post-COVID recovery have heavily weighed on corporate profitability. Figure 2.23 shows our own adjusted profit measure for the private non-financial corporate (PNFC) sector. Here, we deduct profitability for offshore oil and gas (for which profits have been both especially large, and largely idiosyncratic) in order to focus on the wider economy. We then also net out from gross operating surplus various compulsory capital costs including depreciation, net interest costs and other net property income (Piton, Yotzov and Manuel, 2023). This provides a rough underlying sense of the corporate bottom line. Estimates of corporate profitability during the pandemic recovery have improved with recent revisions, but even so remain around 3ppt below those in the years preceding the pandemic. In other words, while oil and gas companies have enjoyed large excess profits, the same is not true of the UK private sector more generally.

Second is the increase in the cost of capital. Pass-through from policy rates into corporate lending tends to be somewhat quicker than that for households – with around 70% of SMEs' bank lending in particular financed on a floating-rate basis. As a result, while the effective rate on outstanding corporate bank lending has increased by well over 300 basis points versus 2019, for households the equivalent change is a little over 100bps. Firms have responded by deleveraging. Bank lending to corporates over the past 18 months has been consistently negative, for example. The Deloitte CFO survey now shows that a majority of finance directors believe UK corporates are still over-levered on average with rates at these levels.

Third is a shift in corporate asset valuations and associated net worth. Here, impairments are also widespread. Higher inflation has reduced the real value of outstanding corporate debt. But even so, net worth – as a share of GDP – is around 8ppt below its pre-pandemic level. Corporate real-estate valuations have fallen roughly 10% since the start of the pandemic according to the PCP index. And as the economy continues to reconfigure, other write-downs seem likely. Run-down of fixed capital, for example, grew at its fastest annual rate since the early 1990s in Q3 of 2022. This has an important impact on policy transmission, with reductions in the value of outstanding corporate assets – particularly corporate real estate – eroding collateral, feeding back into tighter credit conditions.

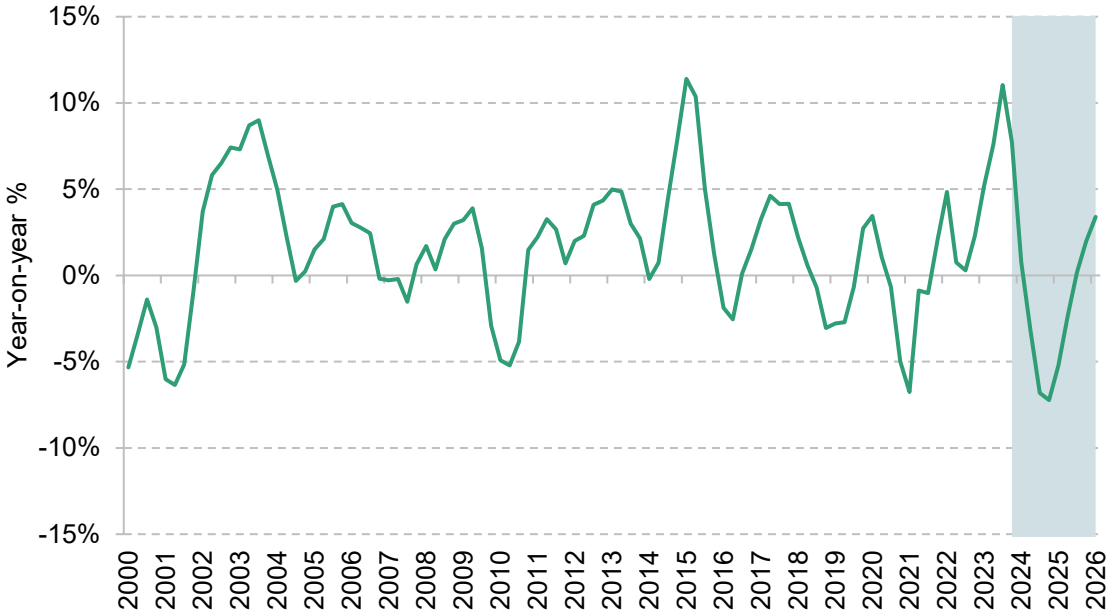
One important offset here concerns defined benefit (DB) pension liabilities – with many schemes now better funded, many firms are now heading for 'buyout'. This means the liability is taken from the corporate's balance sheet. This should free up capital for investment – with the proportion of firms still in deficit falling from 55% in 2019 to 10% now. Although, with just over 5,000 DB schemes still in existence, the macroeconomic effect will be somewhat less than the boost for the firms involved.

Things can only get better?

Could this picture improve? Here we are sceptical, at least in the near term.

While input costs are now falling, there are few signs this is delivering a robust recovery in corporate margins – at least so far. Instead, subdued demand means pass-through into output prices has been quick. With the corporate tax burden increasing, wage bills increasing, and pricing power waning, the outlook for firm profitability still appears challenging. Figure 2.24 shows the outlook for gross operating surplus, deflated by output prices across the economy as a whole. While some of the reduction in 2024 reflects the specific themes within the energy sector, overall – without a major boost to either productivity or pricing power – the UK still seems on course for a relatively sharp squeeze.

Figure 2.24. 'Real' gross operating surplus (four-quarter moving average)



Note: Measure excludes gross operating surplus of shelf companies – namely, those involved in extraction of minerals offshore. The data show onshore GOS deflated by the GDP deflator. Shaded area denotes forecasts.

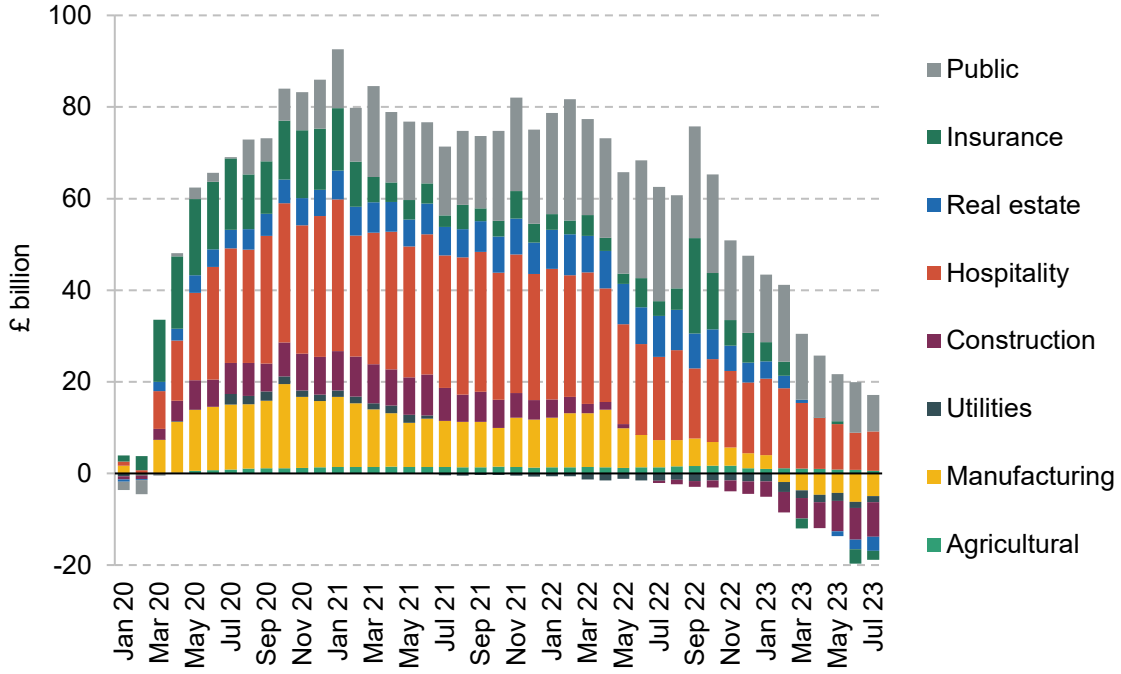
Source: ONS and Citi Research.

Here, as with households, the increase in the cost of capital is likely to increasingly bite. Dispersion is an increasingly important issue – especially when it comes to transmission into unemployment. Corporate profitability remains materially more disparate than in the years before the pandemic. With some sectors enjoying bumper profits, even as the aggregate picture remains subdued, the implication is a tail of firms whose viability is likely materially challenged. The corporate dissolution rate has already been elevated over the past 18 months or so – often as smaller firms founded through the COVID period were voluntarily unwound.[25] But we see signs this is spreading into larger and more consequential areas (see Traynor (2023)). As corporate asset prices come under further downward pressure, this can also weigh on firm collateral (Cloyne et al., 2015) – as we noted above. The process could subsequently accelerate.

Signs of stress are growing. Firms have increasingly eaten into their deposit reserves in recent months. Figure 2.25 shows the sectoral breakdown of corporate deposits relative to the 2013–19 trend. While in the early part of the pandemic, many firms enjoyed a material boost, many of these liquid assets have since been wound down – with aggregate indebtedness falling only modestly.

[25] For more discussion, see Barkema (2023).

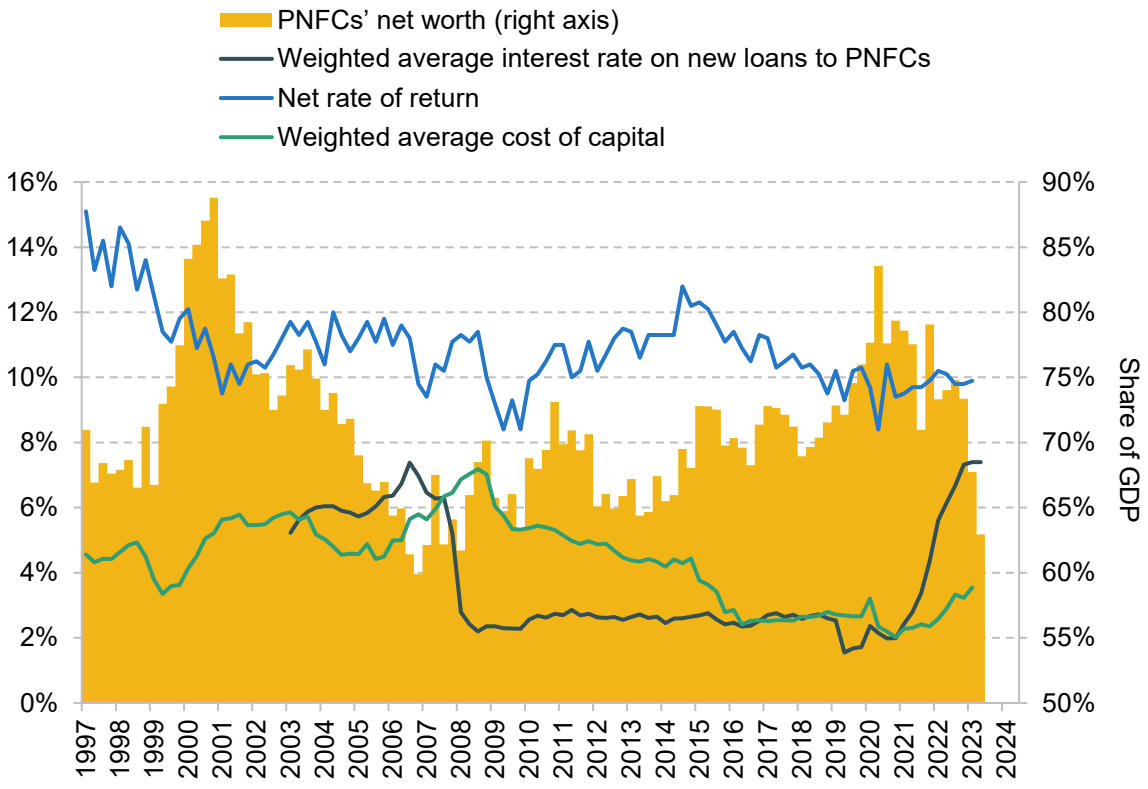
Figure 2.25. Corporate bank deposits: deviation relative to pre-COVID trend



Note: The pre-COVID trend here is measured during the 2013–19 period across each respective sector.

Source: Bank of England and Citi Research.

Figure 2.26. Net rate of return and cost of capital



Source: ONS, Bank of England, Cunliffe (2017) and Citi Research.

We see this as central to labour dynamics through 2024. As the UK economy has transitioned to a more service-orientated model, the direct impact of higher interest rates on employment has waned (Willis and Cao, 2015). Firms often substitute between labour and capital when the cost of the latter increases, rather than reducing demand for both (Wolf and Fornaro, 2021). However, when the income effects associated with higher rates begin to bite, then transmission into unemployment can often gather pace. As with asset prices for households, these processes can be difficult to reverse.

Looking further out, firms – like households – are once again emerging with balance sheets that appear weaker than before the pandemic. Historically, weakness here weighed less heavily than household equivalents as firms find it easier to restructure (Jordà et al., 2022). But we think that growing corporate indebtedness in the years leading up to the GFC played a role in the subsequent widening between the 'hurdle rate' of investment – here measured as the ex-post rate of return – and corporate funding costs (Figure 2.26). The core issue here is firm-specific intangible capital. With significant sunk costs associated with insolvency, firms are incentivised to try to keep going, even if macroeconomically it would be better to restructure. This weighs both on reconfiguration and – in a context of high debt – investment.[26] With corporate balance sheets once again somewhat weaker, we see the risk of a similar 'hangover' in the years ahead.

The outlook for trade: no external bailouts

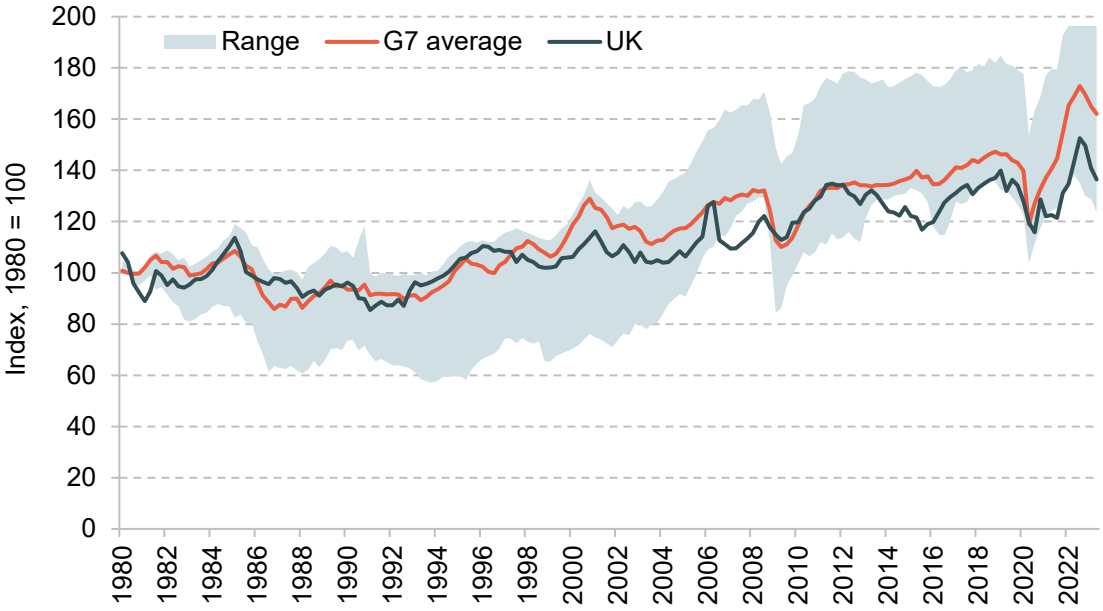
The last piece of the puzzle here is trade. After acute disruption through 2021 and 2022, the external position of the UK has stabilised as global services trade has recovered. However, in the months ahead, external demand seems unlikely to deliver any meaningful support – with the US and the Eurozone both expected to fall into recession. And under the surface, there are signs that post-Brexit frictions are continuing to weigh – especially with respect to services.

Beginning with the headline picture: after a difficult 2021 and 2022, UK trade has stabilised in recent months. Net trade, we think, will add 1.4ppt to UK GDP in 2023, although primarily from falling imports – with exports and imports both, in gross terms, likely to contract. As the recovery in the global services sector has gathered pace, this has benefited the UK's comparative advantages – protecting exports on a relative basis, even as global trade has slumped.

[26] A particular further issue here concerns the incidence of 'high growth' firms. These have been central to UK business dynamism – driving half of all employment growth and an even larger share of investment in the period before the GFC. In recent years, the number of such firms has fallen sharply from nearly 14,000 in 2018 to a little over 10,000 in 2021. To some degree, reductions are explicable by the exceptional gyrations resulting from the pandemic. But even so, it is striking to us that the larger reduction was in 2021, not 2020. This, we think, speaks to a risk that the UK economy is not only investing less now, but may be setting itself up once again for a decade characterised by subdued dynamism.

But while the near-term picture is somewhat more stable, there remains evidence of structural rot. Figure 2.27 shows the share of UK trade as a percentage of GDP relative to 1980, alongside the average for other G7 countries. Having been roughly in line with the G7 average in 2012, the UK dropped to 6.4% below on average over 2019, and 16% below today. Historically, a 1ppt increase in trade intensity has tended to add 0.3–0.5ppt to overall productivity growth over the long run.[27] Such a shortfall, relative to being at the G7 average, could therefore weigh on GDP, plausibly by between 5 and 8 percentage points in the long run – although some of these effects have likely already materialised.

Figure 2.27. Total trade (% of GDP, index): UK and G7



Note: Range here reflects G7 performance excluding the UK. These data are weighted by nominal GDP.

Source: ONS, national statistical offices and Citi.

Looking under the surface, the UK's relative challenges relate both to its sectoral structure and to the underperformance of trade with the European Union. To some extent, the UK has been disadvantaged by the services intensity of its trade, with the global recovery in goods trade still somewhat stronger – although as we noted above, the gap has closed somewhat recently (UNCTAD, 2023). The larger issue seems to be the weakness of UK services exports to the EU. During 2017, nominal UK services exports to the EU grew almost 5ppt a year faster than those to non-EU equivalents. Over the past six months, the difference in the annual growth rate has fallen to just 0.3ppt, with exports to non-EU destinations stronger in areas such as legal and

[27] Estimates here vary. Feyrer (2009) finds, using the experiment of the closure of the Suez Canal, that a 1ppt drop in trade deducts 0.16–0.25ppt from productivity. However, a more modern estimate finds a larger 0.4–0.6ppt effect (Feyrer, 2019). Other more recent studies – including Felbermayr and Gröschl (2013) – find an even larger effect (about 0.75ppt).

consulting services, air transportation and financial services. With trade frictions likely to exert more of an influence as sunk costs are run down, we expect UK services trade to continue to lag in the years ahead, with more firms potentially relocating abroad. We should note that goods exports to the EU have proven resilient. Instead, it has generally been non-EU goods exports that have suffered comparatively, potentially owing to a loss of transnational complementarities.

The external picture remains an important financial vulnerability for the UK. Recent improvements in 'terms of trade' alongside a boost to primary incomes – the net income the UK receives on other assets abroad – have supported the current account. But the underlying structural position remains difficult. And the UK remains heavily dependent on portfolio inflows to fund itself – primarily debt purchases and the extension of credit from non-UK-domiciled banks. Direct investment, by contrast, remains a primarily outflowing concern – suggesting UK corporates currently prefer investing UK revenues abroad. As we argue below, we think the UK will find it hard to hold interest rates at their current level for long from a domestic economic perspective. But we see a risk that rates could remain high in the US for quite some time (see Chapter 1). This will increase the pressure on the external side of the UK economy.

The medium-term outlook: summing up

The key points here are relatively simple we think. The UK economy is in the early stages of a significant rates-driven economic shock. The implication for households is that the lingering squeeze on aggregate incomes is likely to remain for some months yet. For firms, higher capital costs alongside normalising tax burdens and higher wage bills also constitute an acute squeeze. The worry increasingly is that, as spending power is sapped from the economy, asset prices could begin to deteriorate. Should these begin to fall sharply, the consumption response could prove both powerful and challenging to reverse – especially if interest rates globally remain somewhat higher. And a long tail of less productive firms add to the risk higher capital costs drive a further wave of insolvency. Over the past 18 months, monetary policy has justifiably been focused on the risks around more embedded inflation. And in the months ahead, there is a scenario in which firms navigate the looming squeeze through more persistent price increases. But we see the risks, while still significant, as increasingly balanced between this, and a more severe balance-sheet-driven downturn.

2.4 Does the UK have a persistent inflation problem?

Given the picture above, you might be forgiven for asking why the Bank of England is not already beginning to cut rates – let alone potentially tightening further. The issue is that inflation – in the words of Andrew Bailey – remains simply 'far too high'. The good news in recent

months is that headline inflation has already come down significantly. Energy prices have fallen. And we think there are also promising signs of disinflation in core goods and food. The issue remains services. Here we think price growth – at least in annual terms – has only recently peaked. And while increases to date primarily reflect second-round effects associated with food and energy, the issue now concerns strength in wage growth and the potential feedback into corporate margins. This has the potential to be self-sustaining.

We think there are signs that slack is now beginning to turn. Domestic inflation should, we think, follow with it. The key question for the months ahead is one of symmetry – i.e. whether lower input prices now feed through into wage and price setting relatively quickly, or whether stronger price growth proves somewhat 'sticky'. The latter would not only directly contribute to slower disinflation, but also enable stronger real wage and profit growth, increasing the risk of a shift to a more embedded inflationary regime. For now, we think the data lean more towards a relatively symmetric fall. For the MPC, which has concluded the fall is likely to be less symmetric, this would suggest it may have overestimated the momentum in inflation – forcing rate cuts sooner rather than later.[28]

Below, we begin with a brief discussion of the underlying reallocative and labour market supply challenges that have bedevilled the UK's post-COVID recovery, before turning to the outlook for unemployment, cost pressures, and lastly wages and inflation.

The problem with supply

The supply shocks that have buffeted the UK economy in recent years (see 'Why has supply been quite so weak?' above) have had qualitatively different effects from those that went before. In part this is a function of scale. But it also reflects a very different domestic policy response that, in hindsight, has weighed on reallocation and labour supply.

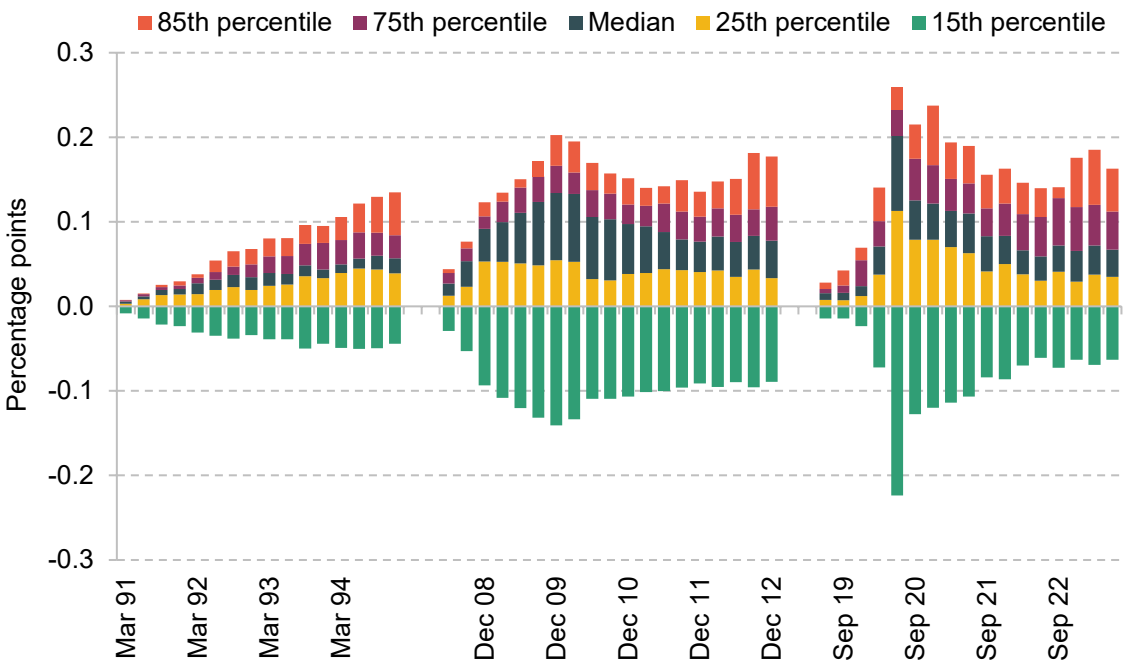
An ongoing reallocative challenge

Fundamentally, the UK has suffered two supply challenges since the onset of the pandemic.

The first is an increased rate of reallocation. As we noted in the 2021 Green Budget, the salient feature of the UK's post-COVID recovery was its asymmetry. Cumulative dispersion in output across sectors has been markedly greater post-COVID compared with the early 1990s recession – although similar to that post-GFC (see Figure 2.28). This has resulted in marked divergences in sectoral profitability, as noted above. While some of these effects have since eased, these gaps have not closed fully.

[28] Specifically, in August the MPC concluded: 'However, some key indicators, notably wage growth, suggest that some of the risks from more persistent inflationary pressures may have begun to crystallise' (Bank of England, 2023b).

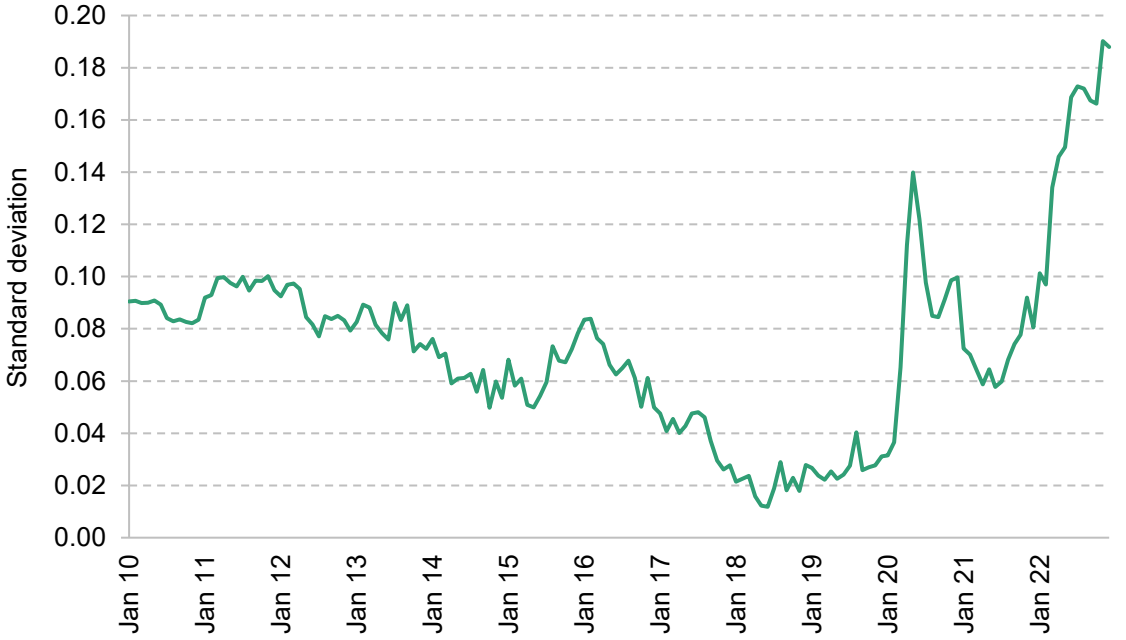
Figure 2.28. Sectoral dispersion following historical downturns



Note: Chart shows the cumulative deviation from pre-COVID levels in real output across two-digit industries. The vertical axis shows the change in the relative level of output across each sector, weighted by their scale.

Source: ONS and Citi Research.

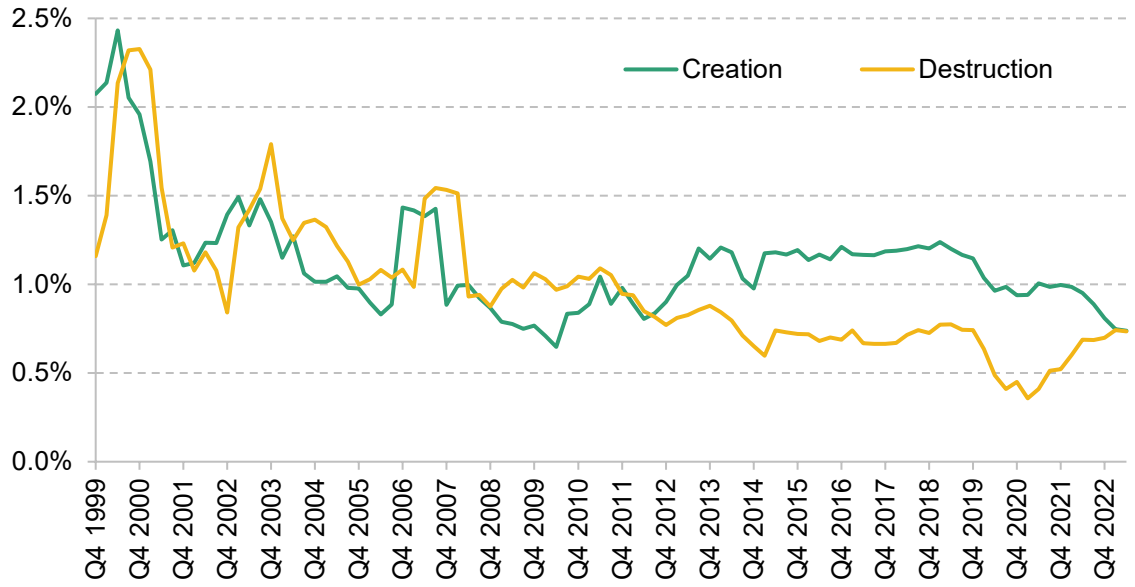
Figure 2.29. Dispersion in industrial output prices



Note: Chart shows the standard deviation in the level of relative prices across two-digit SIC sectors. Prices, in ease case, rebased to 2019.

Source: ONS and Citi.

Figure 2.30. Rates of job reallocation driven by firm creation/destruction



Note: Shows the share of total jobs being either created or destroyed as a result of firm closures or openings.

Source: ONS and Citi Research.

Ordinarily, reconfiguration is ubiquitous but tends to have limited consequences for the economy overall. But when changes are sudden, and large, the issues are rather greater. 'Capacity' is fixed in place. As demand shifts, this worsens domestic imbalances (Broadbent, 2021a). These factors have, we think, played a prominent role in the UK's post-COVID recovery. Figure 2.29, for example, shows cross-sectoral dispersion in industrial price levels. The fact such dispersion has increased quite so markedly is, we think, a sign that the UK has struggled to shift productive capacity to match demand. This in turn has added to inflation as 'in-demand' sectors are able to pass on larger and larger price increases (Bunn et al., 2022).

This is not the first time the UK has struggled in this respect. As Figure 2.28 shows in the post-GFC period, capital reallocation proved tricky (Broadbent, 2012). Sterling weakness in the years that followed was partly a reflection of the challenge shifting capacity from non-tradable to tradable parts of the economy.[29] This time, however, reallocation of both labour and capital has proven challenging, with wage dispersion also increasing sharply.

The good news is that the picture is beginning to improve. Part of the challenge in recent years is a structural reduction in business dynamism which slows reconfiguration, but should not ultimately prevent it (see Figure 2.30). More important is fiscal policy that – with the benefit of hindsight – slowed reconfiguration, weighing on supply. As this support is withdrawn, productivity should begin to improve.

[29] For discussion, see Broadbent (2011). See also Broadbent et al. (2019).

A three-pronged labour supply shock

The second supply challenge is weakness in aggregate labour supply. The UK story here is one of three shocks since 2020:

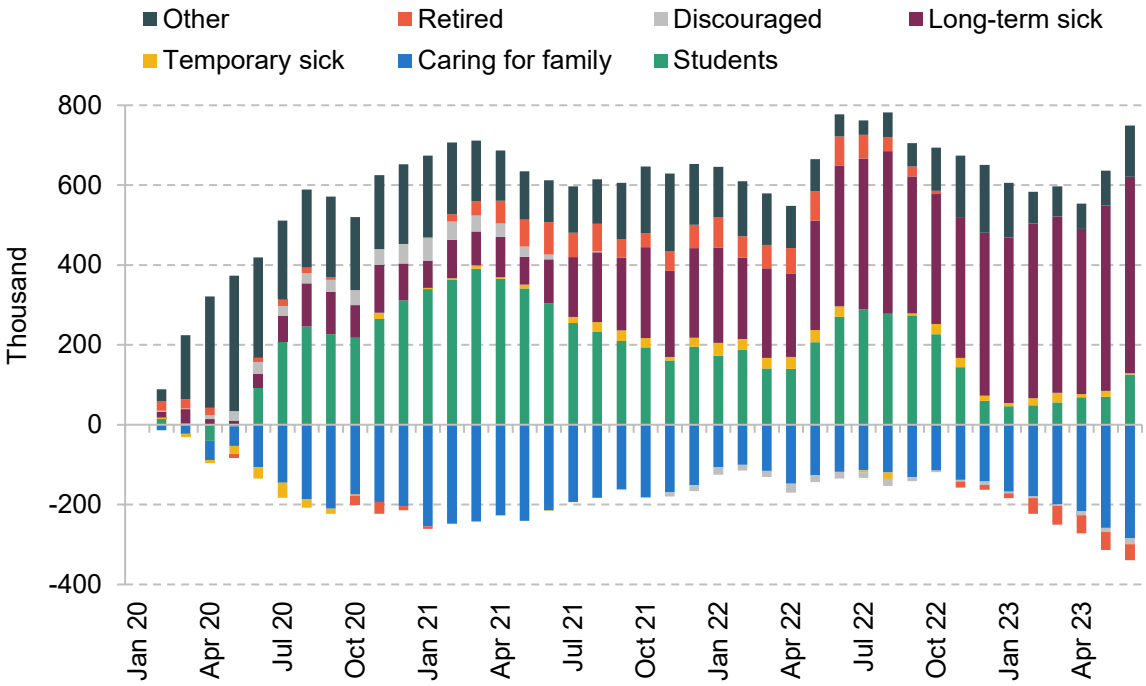
- **First is a large drop in participation.** During the early phase of the pandemic, the UK participation rate fell from 64.4% to a little over 63.1% in early 2021 – a net loss of just under 700,000 workers. At the same time, average working hours also fell by 0.8%. Combined, this meant a labour supply loss of 2.9%. The picture has since improved considerably, as we note below, but these themes still constrained activity post-lockdown.
- **The second issue has been a specific mismatch associated with furlough.** Here the UK is somewhat unusual, combining a labour market that typically has a high 'churn' rate with a COVID policy response that protected jobs. During the acute lockdown phase, the policy supported household confidence. But, in hindsight, keeping the policy in place throughout much of 2021 meant that, as the economy reopened to a different form from in 2019, furlough forced firms to pull from an ever more depleted pool of labour as furloughed workers remained in place. The result was a large hiring backlog.
- **The third shock has been a deterioration in skills matching.** The UK's recovery from COVID has been a skills-intensive one – with labour demand seemingly concentrated towards higher occupational skill levels (Wilson, 2023). However, labour market moves from lower- to higher-skilled roles have fallen to long-term lows. Challenges here had been building for some time. But these effects seem to have worsened through the pandemic. Sectoral dispersion in the vacancies-to-unemployment ratio in recent years has increased to record levels.

In all three cases, we think there are signs that the worst of these supply disruptions is behind us – certainly with respect to the first and second shocks.

Figure 2.31 shows the cumulative change in inactivity, broken down by reason. After a very sharp fall in activity in 2020, the recent data show a rebound. The number of students has dropped materially – with around 160,000 more in work than this time last year. It is a similar story for those out of work with caring responsibilities and for early retirees. Migration has also delivered some good news. Non-EU migration rates in particular have increased beyond our expectations.[30] The news here is of course not all 'good'. Long-term sickness has continued to increase. But overall, whereas in Q1 2022 economic activity was 2.1% short of our final pre-pandemic forecast, that gap has narrowed to a little under 1% now. We expect further convergence in the years ahead as retirement plans are deferred owing to weaker household balance sheets.

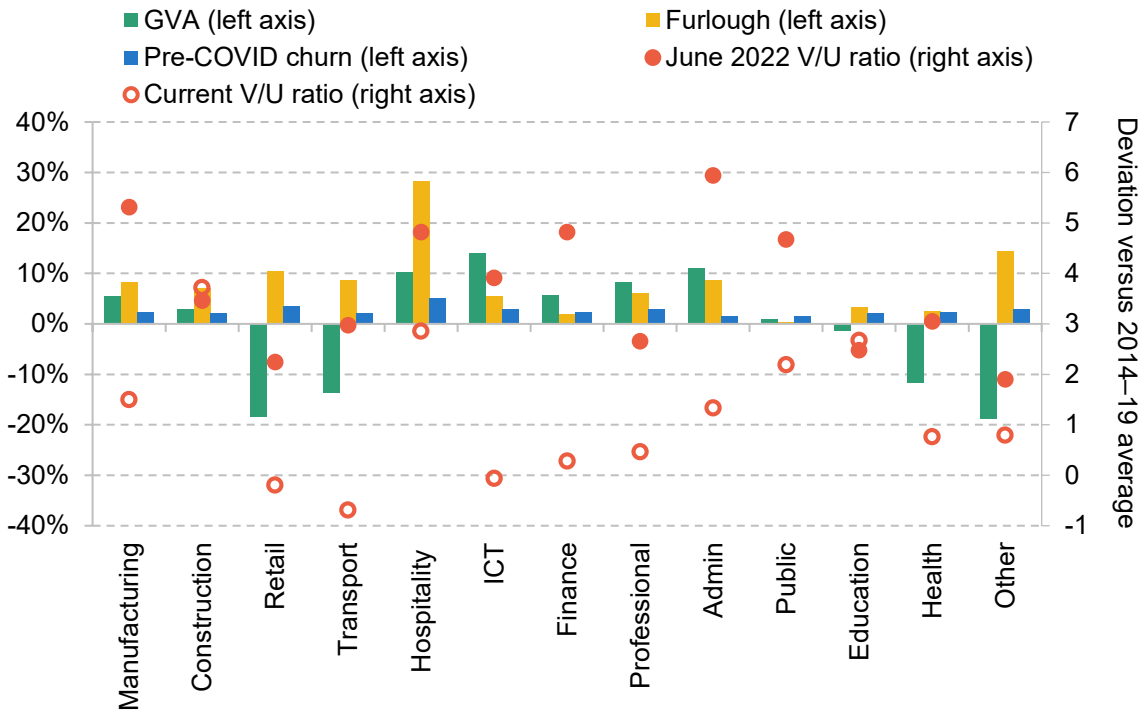
[30] For a breakdown of recent flows, see Office for National Statistics (2023).

Figure 2.31. Changes in inactivity since January 2020



Source: ONS and Citi Research.

Figure 2.32. Changes in labour market tightness by sector



Note: 'GVA' shows cumulative GVA growth between 2019 and June 2022. 'Furlough' shows the average furlough rate through 2021. 'Pre-COVID churn' shows the average rate of quarterly job movement in 2019. V/U denotes the ratio between vacancies and unemployment, a measure of labour market tightness.

Source: ONS and Citi Research.

With respect to furlough, there are also signs that the associated disruption has been worked through. Figure 2.32 breaks down cumulative labour market developments across sectors. The chart actually shows five series: cumulative output growth in a given sector (versus 2019) through to the middle of 2022; the rate of furlough through 2021; the pre-COVID 'churn rate' – the average rate at which workers moved jobs; the V/U (vacancies/unemployment) ratio in June 2022 (versus a 2014–19 average); and the V/U ratio in the latest data (July 2023).

A few points stand out here. First, the labour market has already loosened significantly. In the middle of 2022, nearly all sectors were significantly tighter than the 2014–19 average. In the period since, many sectors have fallen back to closer to the average pre-COVID range, although still only three are in line or below. While cumulative GVA growth has been the predominant driver of relative tightness, in the middle of 2022, there was also a strong independent effect from furlough – with higher furlough rates correlated with a larger subsequent increase in labour market tightening. While these effects have taken longer to ease than we expected,[31] many of them have faded in recent months – with the impact of furlough on the pattern of V/U falling from being strongly statistically significant in Q2 of 2022, to being irrelevant now. Although some second-round effects in terms of employer behaviour – in particular labour hoarding – have likely persisted.

Some degree of skills mismatch is probably here to stay. As we noted above, this has been a skills-intensive recovery. The task composition of net hiring had been heavily skewed towards the analytical and non-routine tasks, and away from typically 'lower-skilled' equivalents (see figure 2.23 of last year's Green Budget). The changing pattern of migration is also likely to complicate the picture here – with EU migrants generally playing a disproportionate role in filling higher-skilled roles – especially in the upper end of the income distribution. More forceful, active, labour market interventions may be necessary to enable faster labour market reconfiguration (Wells, 2022).

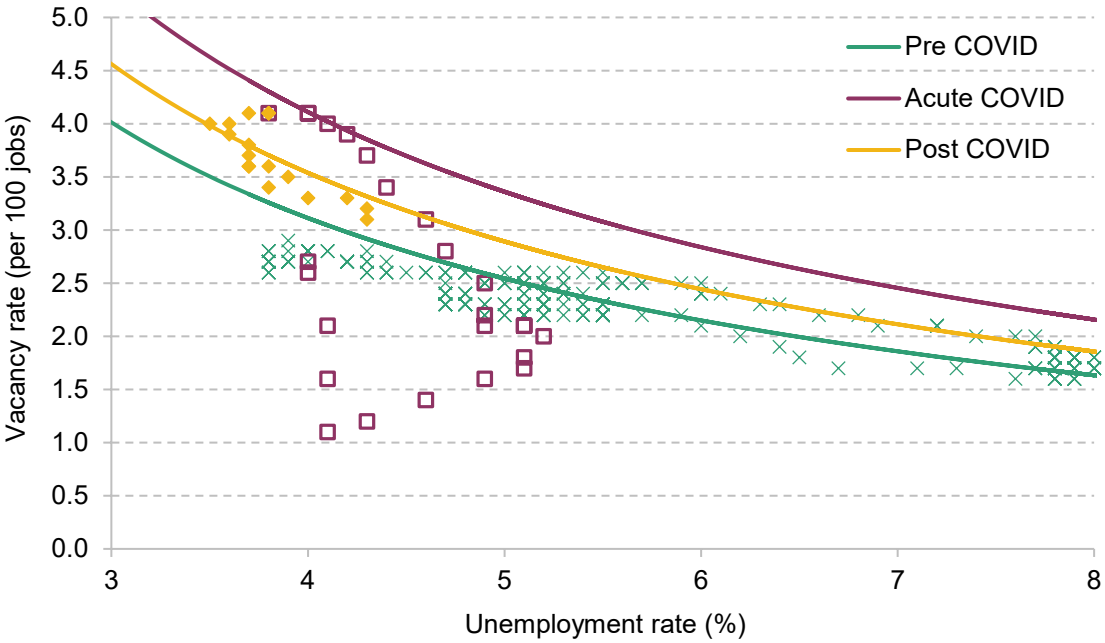
Where does this leave us? In our view, the labour market is probably not quite as efficient as it was post-GFC. But we think the aggregate picture is considerably better than it appeared this time last year. One way of structuring the evidence here is in terms of a 'search and matching' model. This consists of two elements: (1) the 'Beveridge curve' – the relationship between vacancies and unemployment; and (2) an unobserved 'job creation' curve – reflecting the structural incentive of employers to create a role (Pissarides, 2011). In the early part of the post-pandemic recovery, the Beveridge curve seemed to shift out sharply as furlough interrupted conventional labour market flows. A lower sensitivity of workers to workplace incentives also weighed on job creation. But in the period since, the realised data are consistent with a notable improvement in

[31] We had expected this process to take around 12 months, rather than two years. See Nabarro (2021).

job matching. As household balance sheets have also softened, we think that has likely driven the job creation curve higher.

These various changes are summarised in Figure 2.33, which shows the realised Beveridge curve against the structural equivalent that the data in each subperiod would suggest under our modelling. Initially, poor matching drove the Beveridge curve higher. But in the period since, as furlough-related effects have waned, the picture seems to have improved. From a supply perspective, the UK labour market therefore feels to us to be in a much better place. But this also suggests greater potential for a meaningful degree of economic slack.

Figure 2.33. UK Beveridge curve



Source: ONS and Citi Research.

Unemployment and slack: navigating the inflection point

As labour supply has improved, we think there are also now signs that demand for labour is softening. Vacancies have fallen from 1.3 million in early 2022, to just under 1.0 million now – versus around 800,000 in 2019. Much of the soft data remain consistent with a further deterioration in the months ahead. The KPMG–REC survey[32] (a well-established survey of recruiters) has shown expected employment growth falling to lows only previously recorded during the GFC and acute COVID period. The residual strength in vacancies, at least versus

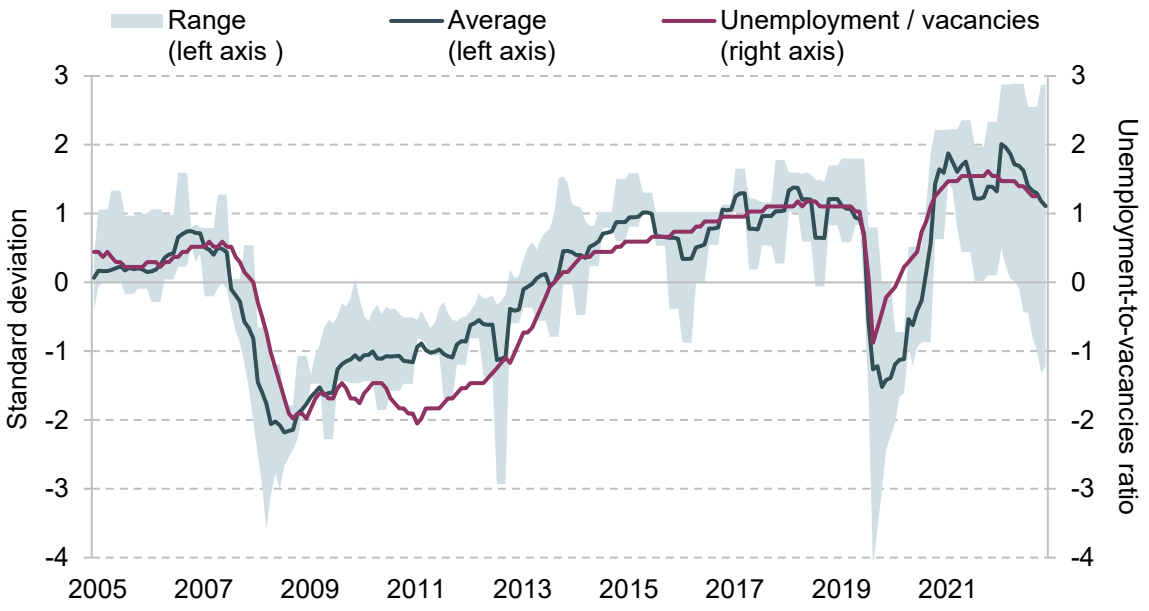
[32] The latest release is available at https://kpmg.com/uk/en/home/media/press-releases/2023/09/kpmg-and-rec-uk-report-on-jobs.html.

2019, also seems increasingly concentrated in the public sector – with 70% of the cumulative divergence versus 2019 driven by health, education and public administration.

Inferring labour market conditions from the 'level' of vacancies has historically been unreliable, given the variability in hiring costs. In our view, these have likely fallen over the pandemic.[33] A crude levels comparison is therefore likely to overstate the degree of labour market tightness. Instead, measures of intensive slack, such as capacity utilisation, have eased in recent months from record highs in Q4 2021 to levels closer to their long-term average. Job 'flows' have also already turned, with an elevated overall rate masking a shift in composition from resignations to dismissals – with the latter climbing to their highest rate since the onset of the pandemic.

There is broader evidence that labour market slack is now beginning to turn. The relevant survey data here – such as the KPMG–REC survey of candidate availability – have increased steadily in recent months. These data usually lead annual changes in unemployment by around two to three months, and already indicate the largest annual increase since early 2020. Other measures of labour market slack have told a similar story. Recruitment difficulties in the Bank of England's Decision Maker Panel Survey, for example, have fallen sharply. BCC and CBI data have also moderated since their spike in mid-2022 – if to a lesser degree. Figure 2.34 shows a simple average of these surveys plotted against the headline unemployment-to-vacancies ratio. An inflection is relatively clear, with overall supply and demand now in better balance.

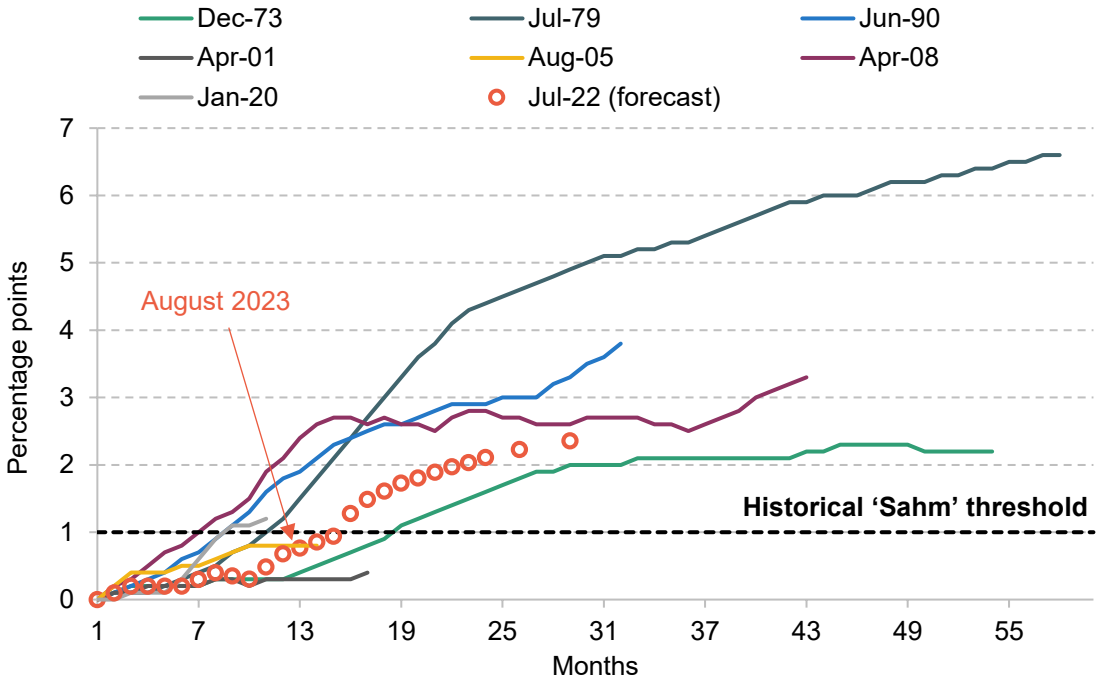
Figure 2.34. Survey indicators of labour market tightness



Source: Bank of England, CBI, KPMG–REC, ONS and Citi Research.

[33] This observation is corroborated by a drop in the implied coefficient between the vacancy rate and the job quits rate – although this likely also reflects some evidence of mismatch too. For discussion, see Nabarro (2023a).

Figure 2.35. Changes in unemployment in historical labour market cycles



Note: Lines for each cycle extend until the point at which unemployment started to meaningfully fall.

Source: ONS and Citi Research.

Aside from developments in activity, the key question for the months ahead will be labour hoarding. As we noted above, furlough – and the subsequent surge in hiring from a diminished pool of workers – has resulted in a change in corporate behaviour, with more retaining labour even when uneconomical (MacQueen, 2023). This has slowed transmission from slowing demand into labour market slack. The question now is how long these effects are likely to last. Here we think the best evidence can be derived by looking at the gap between actual hours worked versus the 'usual' – as reported by workers – with labour hoarding in the current environment likely focused on the intensive margin. On average over the past 12 months, the Labour Force Survey suggests workers are on average working 0.2 hours less per week than they would 'usually' do. This compares with working 0.1 hours more than usual on average in 2019. These gaps may not sound like a lot, but with a mean working week of 32 hours, that is a net loss of 0.6% of aggregate labour supply – equivalent to 205,000 workers. We expect these effects to fade through the coming 12 months as hiring conditions normalise further. Importantly, we see less scope here for the marriage of convenience between workers and employers after the GFC that enabled more adjustment via hours and wages, rather than headline unemployment (Coulter, 2016). That potentially increases the downside risks.

After two years where labour supply has suffered and labour demand has been buoyant, both dimensions are now beginning to shift. Labour market conditions seem to have normalised. And labour demand now seems on a more persistent downward march. A sharp increase in

unemployment is likely to be the result. We expect unemployment to increase to 5.8% by the end of 2024, up from 4.3% now. With the UK already flirting with its 'Sahm Rule' – the point at which unemployment starts feeding back into consumer confidence and demand[34] (see Figure 2.35) – a more conventional downturn seems to us increasingly likely.

Does the UK have a (persistent) inflation problem?

With the labour market now beginning to soften, the key question is whether inflation can follow, or whether the UK is on a path to a more persistent inflation problem. The risks here are significant. External cost pressures are now fading relatively quickly. But if the second-round effects of inflation on wages and (especially) domestic prices prove more persistent, this could not only slow any associated disinflation, but also create space for a more self-sustaining inflationary process between margins and wages. For now, we think the evidence thankfully weighs against this conclusion. But uncertainty remains.

The good news: fading upstream pressures

It is worth noting the scale of the good news with respect to inflation in recent months. Developments here are best broken into three:

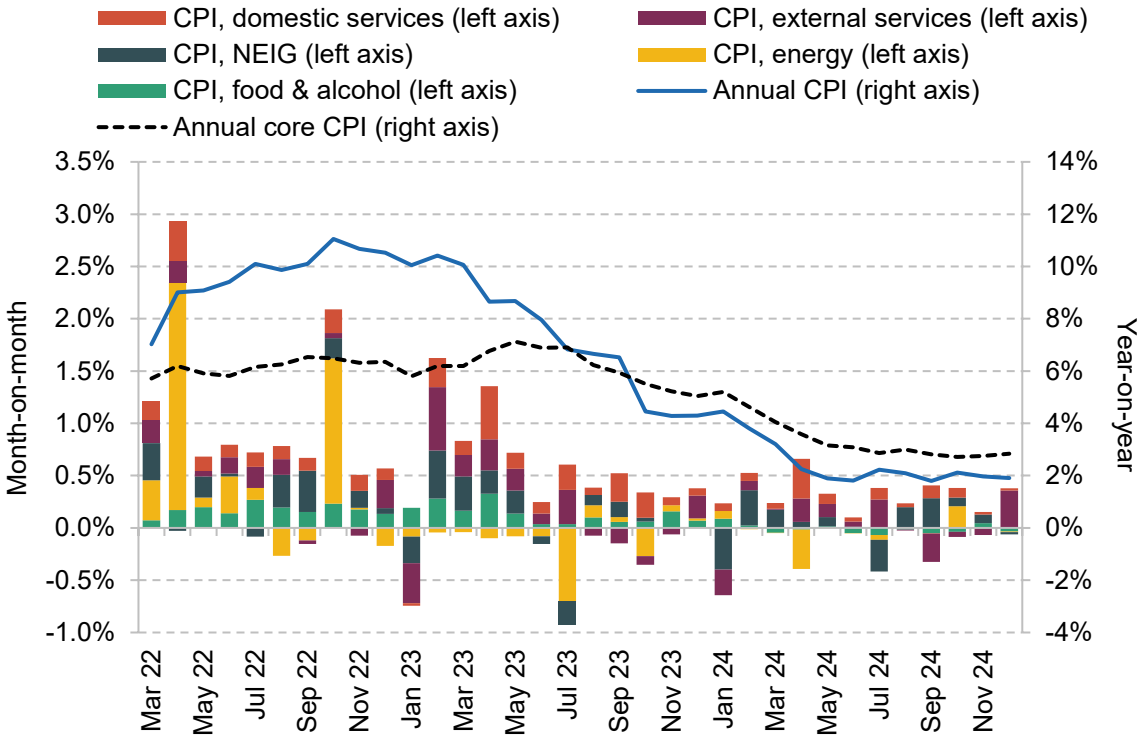
- **Energy.** Recent reductions in household energy bills look set to continue from October, with Ofgem announcing a further reduction in the dual fuel bill to fall to £1,923 from £2,074 in July and £2,500 earlier in the year. The boost is likely to be partly offset by recent increases in petrol prices, but all the same these changes imply a reduction in the contribution of energy to headline CPI inflation from 3.0ppt in January to –1.2ppt in Q4. We expect energy prices to remain at around £2,000 through 2024.
- **Food.** Sterling-denominated wholesale food prices have fallen from the end of Q3 2022. However, domestic food PPI and CPI inflation have been held up by a combination of higher industrial import prices, energy costs and more intensive hedging on the part of retailers. Now, though, output PPI inflation is falling sharply – with annual rates down from just over 13% in January to –0.4% in the latest data. Already, CPI food inflation has fallen from its peak of 19.6% in March to 14.9% in July. We expect rates here to fall to 3.6% by year-end as negative base effects begin to work through.
- **Core goods.** Here price growth has also fallen since May 2023, with broader signs that cost pressures are easing, and that discounting behaviour is returning to a more conventional pattern. The gap between PPI inflation – which had been falling for some time – and CPI inflation has widened. This primarily reflects differences in coverage, as well as a limited effort to rebuild margins. Neither, we think, suggests structural decoupling. With export

[34] For discussion, see Blanchflower and Bryson (2022).

price growth negative, import price growth near zero and PPI inflation falling sharply, further price reductions likely lie ahead.

Further reductions across these three areas we think are likely to drive CPI through the end of this year from 6.7% in August to 4.3% by December – which would mean the Prime Minister meets his goal to halve inflation (see Figure 2.36). The main risks – and indeed the determinants of the target itself – remain primarily external, with domestic price developments only really a marginal factor at this point.

Figure 2.36. Contribution to headline monthly CPI inflation



Note: NEIG = non-energy industrial goods. Forecasts beyond August 2023.

Source: ONS and Citi Research.

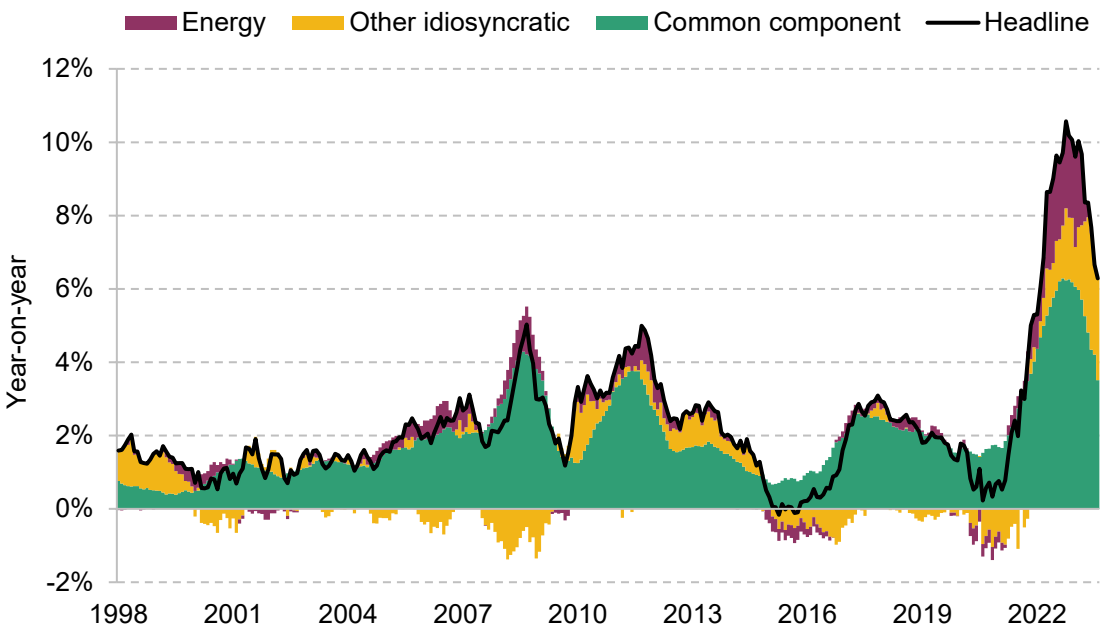
The 'bad' news: resilient domestic pressures

Increasingly the question is less on whether inflation will continue to fall, but rather how far it can go – especially as we move into 2024. The issue here is the response of services prices to weaker domestic demand and lower costs. Encouragingly, we see signs that pricing behaviour is beginning to ease.

As we noted above, the UK has been particularly badly affected by a series of large supply shocks in recent years. These have driven inflation higher than in comparable economies – even on measures of 'core' inflation. But to a large extent, much of this adjustment has reflected larger relative price changes. One way of looking at this is to take the 'common component' of

monthly price moves and compare these with headline price changes – Figure 2.37 shows the resulting measure of 'underlying' inflation for the UK, based on a dynamic factor model.[35] This is a key distinction economically. UK inflation dynamics are generally more exposed to relative price changes owing to the economy's small open nature. This is one of the reasons why a well-anchored monetary regime is so important. But central to the risk of more embedded inflation is a more uniform move in the common price level. Here these data were certainly flashing red in the second half of 2022. But in the months since, the risk seems to have receded somewhat.

Figure 2.37. Underlying inflation gauge



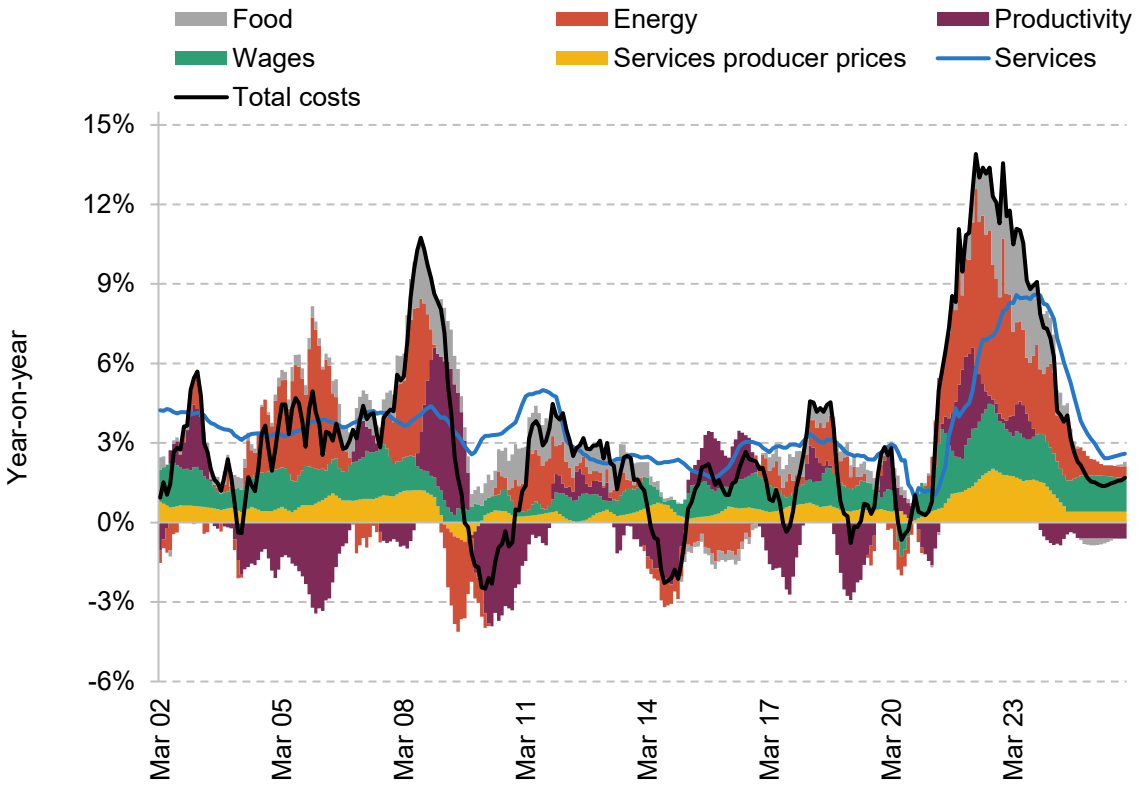
Note: The common component here is derived from a dynamic model across the CPI subcomponents.

Source: Luciani (2020), ONS and Citi Research.

With respect to services inflation specifically, while price growth here has become the predominant driver of incremental growth, increases are still more than fully explained by second-round effects from food and energy costs. Figure 2.38 shows a breakdown of service providers' cost growth, versus realised services price inflation. Here, as food and energy shocks have buffeted the UK economy, these first affect retailers, services providers' input costs and only lastly consumer services prices. Importantly, energy and food prices would have suggested a rate of services inflation almost double that which has materialised in recent months – consistent with weakness in profitability. In that sense, there are few signs of a more self-sustaining inflationary process here – at least not yet.

[35] The methodology here is similar to the ECB's PCCI measure. Methodology taken from Luciani (2020).

Figure 2.38. Realised services inflation and domestic costs



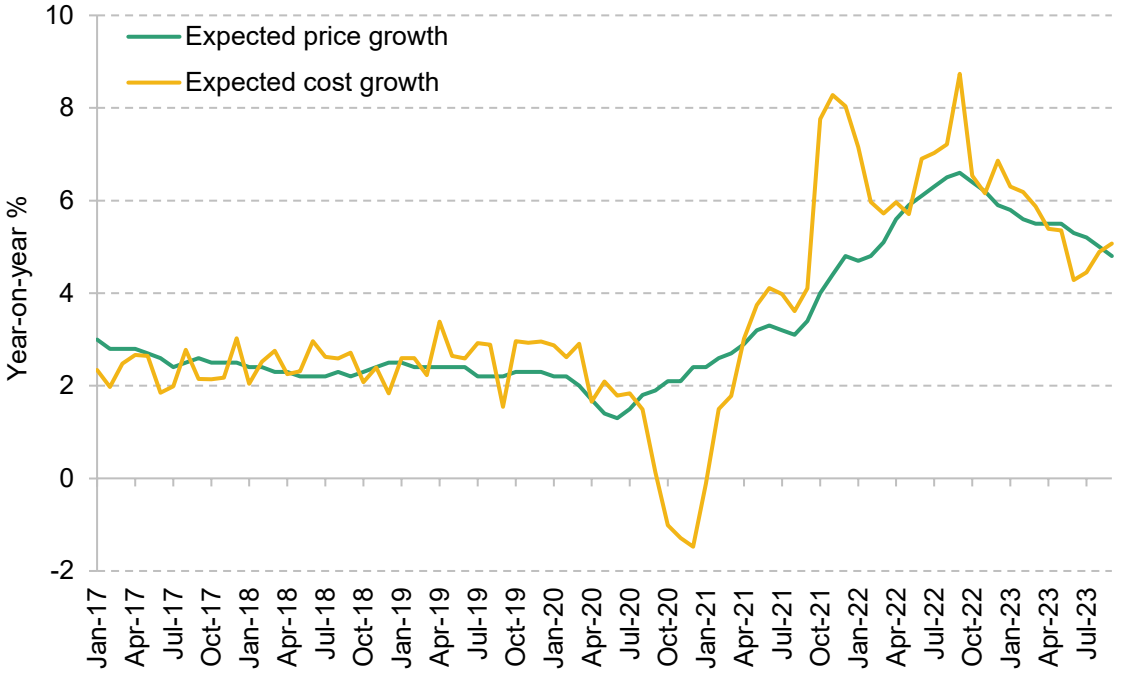
Note: Cost decomposition is derived using the supply and use tables to weight input costs across different services subsectors.

Source: Tenreyro (2020), ONS and Citi Research.

With input prices now falling, are there any signs firms are keeping prices higher to recover profit margins? For now, it does not appear so. Figure 2.39 shows a time series of firms' expected cost growth over the coming 12 months, and changes in expected prices measured by the Bank of England Decision Maker Panel Survey. At least for now, the two series are moving closely with one another. This is consistent with firms' expectations of their own margins, which also remain relatively depressed (see also Yotzov et al. (2023a)).

The outlook for corporate profit margins is, as we noted above, perhaps the single most important question for the broader economic outlook. If margins begin to recover, then a persistently tight labour market and further rounds of wage and price pressures become plausible. We see two issues as central here:

Figure 2.39. Expected cost and price growth



Note: Expected price cost growth here is derived by taking wage expectations (or wage growth six months advanced) and weighting alongside input goods PPI and services PPI inflation.

Source: Decision Maker Panel, ONS and Citi Research.

- First, is there any structural reason to expect slower pass-through of recent cost reductions (versus cost increases)? Some have argued, for example, that because of a positive inflation target, firms are structurally less willing to pass on cost reductions, versus increases (Karadi and Reiff, 2019). We find little evidence of these effects in the UK's economic experience.[36]
- Second, cyclical conditions could enable firms to keep prices higher for longer. This is a function of domestic demand, and the competitiveness of product markets. On the latter, we see few obvious reasons to think that the competitive landscape has fundamentally shifted. The CBI services survey, for example, shows domestic competition constraining roughly the same proportion of firms as pre-pandemic. On the former, we think the headwinds to consumer demand are considerable (as argued above), limiting pricing power. For example, it is striking in our view that the UK is one of the only markets globally in which Apple is not planning to increase the price of its iPhone.[37]

[36] On a purely empirical basis, there is in fact evidence that disinflationary shocks pass through more slowly (Mrabet and Page, 2023). However, this is primarily the result of the nature of the shocks. When these effects are controlled for, pass through is symmetric if non-linear (Hjortsoe and Lewis, 2020).

[37] See reporting at https://www.bloomberg.com/news/articles/2023-09-13/uk-s-apple-users-get-a-100-price-cut-on-new-iphone-15-pro-model?.

From real rigidities to a persistent shift?

How could all this be wrong? The clear and present danger here is growth in wages. These accelerated to uncomfortable levels over the second quarter of this year. And if they were to remain high, they could deliver an environment where pricing power is maintained and inflation ultimately more entrenched – if, for example, both firms and household expectations were to shift.

Here, we would urge some caution – particularly with respect to the spot wage numbers. The headline data are eye watering from a monetary policy perspective. Private sector regular pay of 8.1% is more than double what could conceivably be thought of as consistent with target inflation. Public sector settlements, backpay and bonuses are all clearly making the picture look worse and worse. For the MPC, these changes have, we think, been central to its conclusion that second-round effects have now crystallised.[38] Just looking at the UK wage Phillips curve, for example, there clearly are signs that pay growth has moved well above levels implied by the traditional relationship with unemployment. Most static wage equations would come to a similar conclusion.[39] If true, this would suggest wage growth will now drive up both costs and prices to enable a more persistent inflation issue.

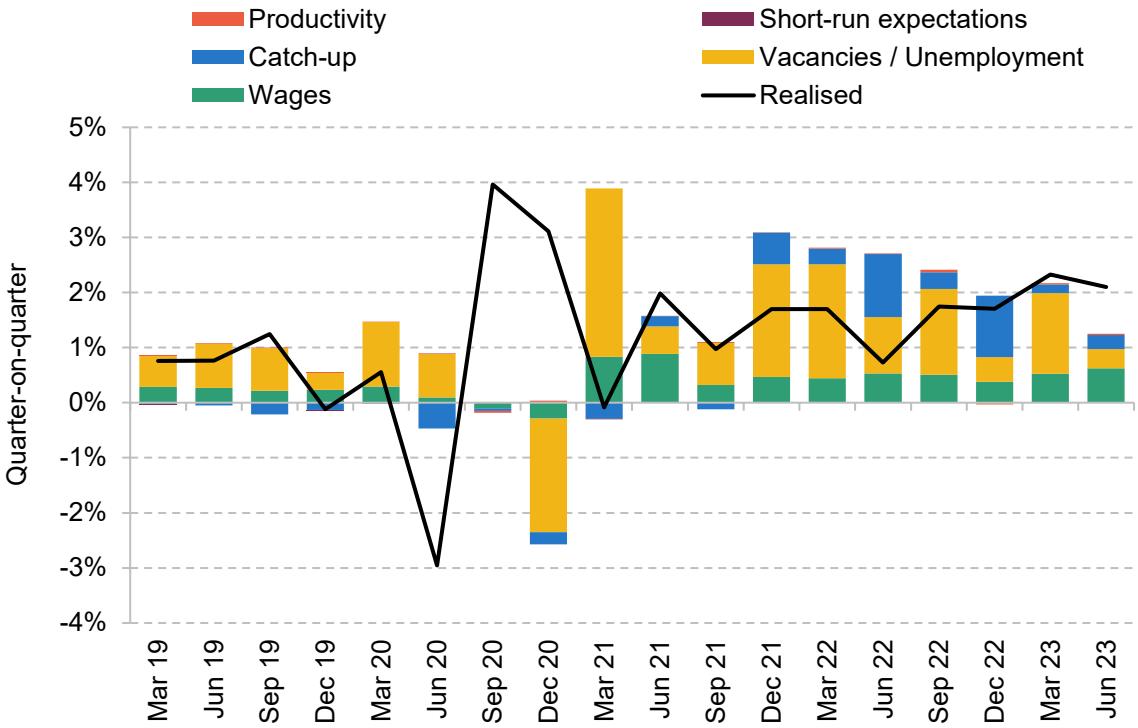
Is this the right conclusion? We would be cautious.

Figure 2.40 shows a breakdown of the drivers of UK wage growth model based on work by Bernanke and Blanchard (2023) and calibrated on data between 2000 and 2019. This explains wage growth as a lagged function of itself, inflation expectations, past inflation surprises, and labour market tightness. Three conclusions stand out. First, while pay growth is running at the hotter end of model estimates in recent quarters, the scale of the overshoot is far from decisive – with the model overall still working relatively well. Second, pay growth through 2021–22 was far below where one might have expected it to be, given the tightness of the overall labour market – consistent with continued disruption to labour market signals. Third, the contribution to labour market tightness was truly exceptional, but linear. Indeed there are few signs of a 'kinked' domestic Phillips curve in the way that has been observed, for example, in the US (Benigno and Eggertsson, 2023).

[38] See, for example, testimony to Treasury Select Committee (https://committees.parliament.uk/oralevidence/13582/pdf/).

[39] This was noted by Governor Andrew Bailey in the August press conference (https://www.youtube.com/watch?v=229iaLxMOL4).

Figure 2.40. Decomposition of wage Phillips curve



Note: Bars show the output of a model calibrated on the 2000–19 experience. Wage series here is total private sector pay.

Source: Bernanke and Blanchard (2023), ONS and Citi Research.

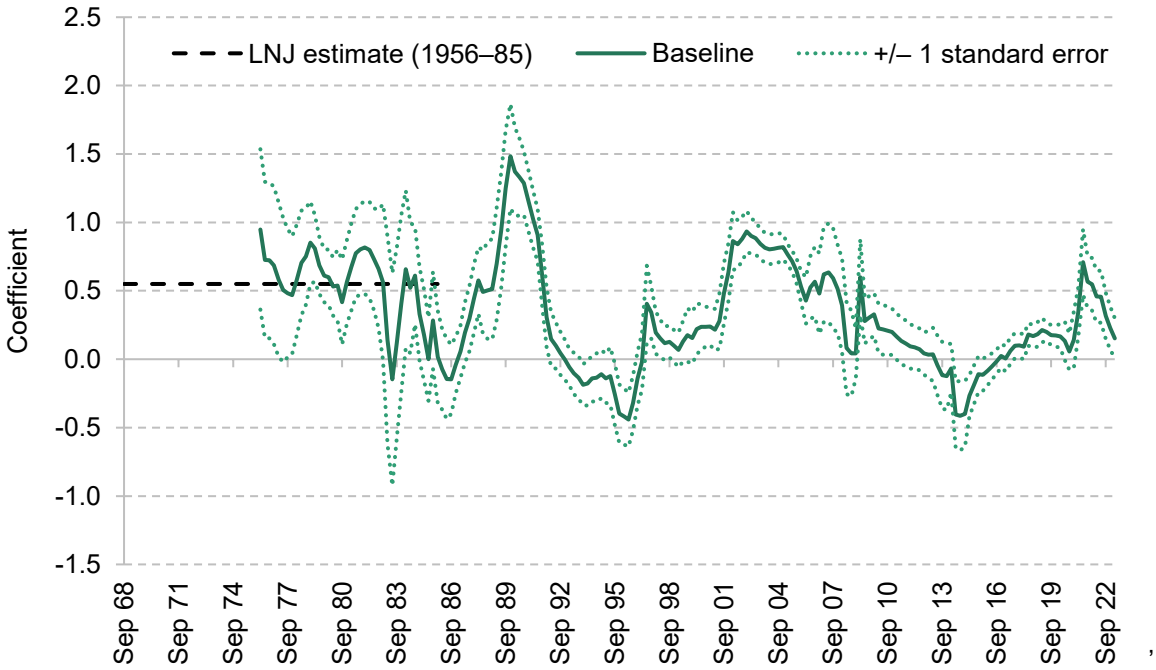
Some of the behaviour in wage growth here is a genuine puzzle. But rather than reflecting an embedded trend, we think much of the exceptional wage growth we have seen in recent months can be explained by one-off and backward-looking factors. The impact of the National Living Wage, for one, is no small thing.[40] And we think there is evidence of a broader level adjustment as past pay restraint has unwound and as efficiency wage behaviour returned. In the latter case, as households emerged from the pandemic, non-fiduciary considerations featured more prominently in individuals' labour market decisions. The implication is the 'Frisch wage elasticity' was very low, leaving firms with little incentive to increase pay. In recent months, we think much of this behaviour has begun to normalise. Alongside very high rates of labour mobility, the subsequent effects have materialised especially quickly.

With the labour market now loosening, the key uncertainty in our view concerns the feedback effect from high inflation back into wage growth – a so-called 'real rigidity'. This is a serious economic problem, lifting the level of unemployment consistent with target inflation. The key

[40] While binding wages for only a relatively small share of workers (3–5%), such a large increase has had unexpectedly severe second-round effects on wages in lower-income industries as firms have sought to preserve their relative pay position. See Nabarro (2023b).

question is how long these effects are likely to persist. Here we take some comfort from the observation that, thus far at least, UK wage setting is not behaving in a fundamentally different way from that seen in recent years. The feedback from unexpectedly high inflation into wage setting has been relatively consistent since 2000 – with an unexpected 10% inflation surprise adding 1.0–1.5% to headline wage growth over the four quarters following the shock.[41] That is about a quarter of the real rigidity implied by the historical estimates for the UK from Layard, Nickell and Jackman (1991) – see Figure 2.41.

Figure 2.41. Rolling estimate of real wage 'rigidity'



Note: Based on a rolling five-year correlation of the change in the ratio of CPI to realised wages.

Source: Layard, Nickell and Jackman (1991), Broadbent (2023) and ONS.

There are of course considerable uncertainties here. Given the scale of the real rigidity, it is possible that these effects take longer than the usual four quarters to fade. With inflation set to remain high for some months yet, a nefarious de-anchoring of price and wage setting could yet emerge. Our point here is that, as things stand, there is not definitive evidence either way. With the labour market now loosening, we see it as just as plausible that wage growth could fall back relatively quickly as that it remains persistently sticky.

It is also worth taking a step back to ask how exactly the UK could transition into a high-inflation equilibrium. A necessary condition, given the economic starting point, would be a

[41] This is consistent with historical evidence that around 30% of employers take inflation into account when setting wages in some form or another. See Millard and Tatomir (2015).

material improvement in firms' perceived pricing power. If firms were able to deliver higher prices, and in the process accept higher wages, then a joint shift in firm and household wage and price expectations could crystallise. For this reason, any additional demand stimulus over the coming months is deeply risky. But, absent this, the bar may be higher here than thought. In the 1970s, it took a decade of excess stimulus to sufficiently destabilise inflation expectations, and then material real income growth of almost 13% cumulatively through 1972–73 to overcome the inherent consumer unease associated with very rapid price growth. This time, the same reservoir of demand is just not there. To the degree real rigidities persist, it seems as plausible this increasingly feeds back into higher unemployment as into higher inflation.

Expectations, expectations, expectations

The fundamental question here for the UK economy is, having climbed a relatively steep Phillips curve, could we come down again relatively quickly, or will inflation remain elevated. Increasingly, the consensus seems to be for the latter – suggesting a more challenging outlook ahead. Our view is a little more optimistic. This is based primarily on evidence that the UK wage Phillips curve remains well anchored – at least so far. It also rests on the observation that, to the degree we have seen pricing become more sensitive to lower slack, this seems to have been driven primarily by acute shortages. Over time, these should be expected to fade.

A key factor here is the path of inflation expectations. While there is much to be concerned about with respect to the UK's recent economic performance, this is one area where we see grounds for optimism. Three elements of the way these data have developed, in particular, are reassuring.

- First, as inflation accelerated, pass-through into both short- and long-run inflation expectations has proven stable. This is different from the experience of the 1970s when, as inflation climbed, pass-through into inflation expectations began to accelerate. Increases in surveyed measures have still been material, but there is no sign that they have begun to run away.
- Second, as inflation has begun to recede, inflation expectations are thus far falling concurrently. This is true of longer-run inflation expectations – here measured using the Decision Maker Panel for firms, and our own survey alongside YouGov for households. Reductions have much further to run, but there is little sign as yet of expectations proving sticky at an elevated level.
- Third, as inflation has come down, there are also signs the distribution of expectations is beginning to normalise. Dispersion has eased somewhat. The increasingly negative skew in expectations that was evident during 2022 has also begun to reverse.

Headline CPI inflation has now been above target since July 2021 – over 24 months. Over the past 12 months, inflation has also exceeded 10% in seven of them. We expect inflation to remain

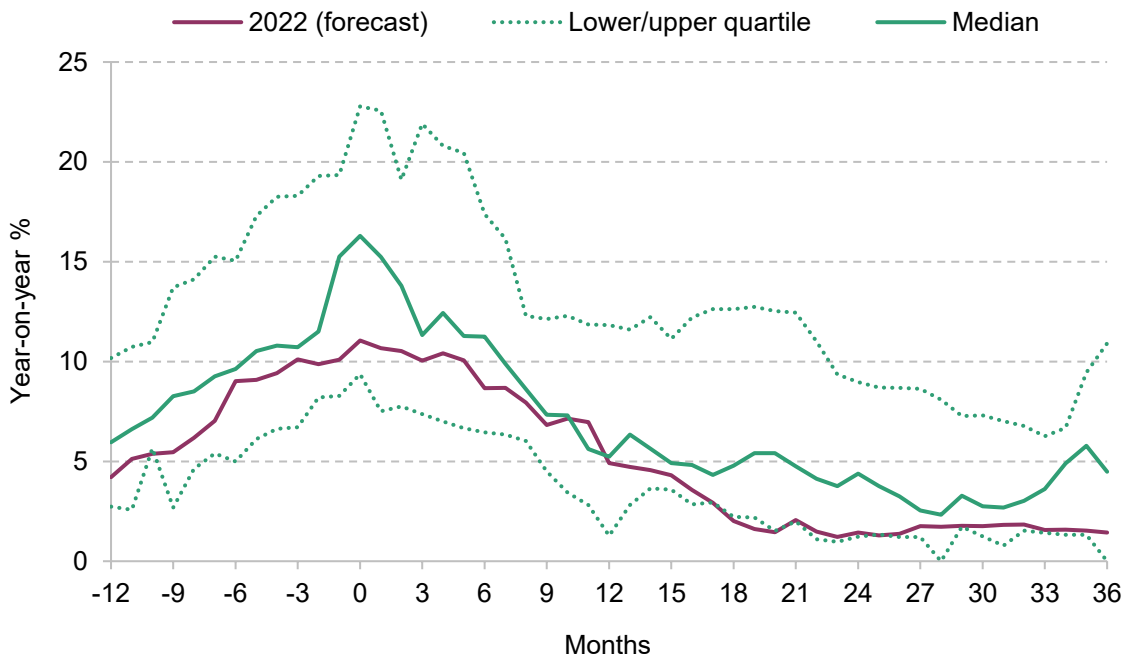
above target for a further three quarters (until Q2 of 2024). The scale and duration of the inflationary episode are testament to the severity of the supply shocks that have buffeted the UK economy (see Section 2.2). But we would note that sequential wage and services inflation are now back at target-consistent levels. One swallow does not make a summer, but we think the data are continuing to move in the right direction.

Summing up: slack and inflation

Having suffered an ugly combination of strong labour demand but impaired supply through 2021–22, both trends are beginning to reverse. Labour demand is moderating. While there are also signs that weaker matching and large real rigidities which have boosted 'NAIRU' are both now beginning to moderate, the UK labour market subsequently appears somewhat looser. Alongside fading external price pressures, we think the chances of a relatively rapid disinflationary process are increasing.

Wages remain the biggest concern. The current strength in these numbers primarily reflects wage restraint through 2021–22 as well as extreme tightness in the autumn of last year. But if wages remain stronger than we expect, and demand subsequently more robust, then the UK could still transition into a high-inflation paradigm. At the time of writing, the outlook here is genuinely unknown.

Figure 2.42. Developments in CPI inflation during historical 'high inflation' episodes



Note: Month 0 denotes the time at which inflation – in the given episode – peaked. Data taken from Thomas and Dimsdale (2016) showing historical CPI estimates. Episodes include Q2 1917, Q2 1920, Q3 1940, Q2 1948, Q1 1952, Q2 1956, Q3 1971, Q3 1975, Q2 1980, Q3 1991and Q4 2022.

Source: ONS and Citi Research.

UK inflation is always typically more exposed to global price disruption. This was true in the aftermath of the GFC. And it is especially true when comparing UK inflation dynamics with those either in the Euro Area or in the United States. This combination means that UK inflation has tended to be somewhat more volatile. But a bout of high inflation still need not mean a transition to a high-inflation regime. Figure 2.42 shows the path of CPI inflation in the 10 episodes since 1900 when inflation has exceeded 7.5%. In five of those, inflation returned to a 2% level within 18 months. In the other five, the challenge proved more persistent.

The experience of the 1970s casts a long shadow. But persistent inflation is primarily a function of policy choices. The big blunder is failing to recognise the relative real income loss associated with such a shock. In the 1970s, this consisted of a 13% cumulative increase in real household income between 1972 and 1975, even as terms of trade deteriorated sharply. For now, the UK seems some way away from such a situation. But in our view, this highlights that the main inflationary risk for the UK is probably a fiscal policy error. A fiscal policy loosening that significantly boosts demand in 2024 could make a shift to a more persistent inflation regime more likely.

2.5 Conclusion: brave new world

The UK economy has been on a steady macro-financial path over the past 50 years. Manufacturing has shrunk. Professional services have grown. Trade-based dividends have boosted living standards, while weighing on inflation. And plentiful global capital has enabled a process of debt accumulation and rapid private asset growth, underpinned by structural reductions in interest rates. The post-COVID experience is a rude awakening. The aim of this chapter has been to try to break down the implications for the economic outlook, and the plausible paths ahead. Below, we summarise the core points of the economic outlook, before summarising the policy challenge that remains.

The economic outlook: brave new world

The core contention of the economic arguments above is that the UK will struggle to live with interest rates that are this high for a sustained period. The point of departure for the economic outlook is framed by the fallout from a series of acute cost shocks since the onset of the pandemic. The good news is that the worst of these effects are now fading, with easing energy prices providing a fair tailwind to economic activity in recent months. The bad news is that from here, further benefits are likely to be offset by the unwind of fiscal support, with corporate margins and real incomes likely to remain somewhat depressed. The headwinds associated with higher interest rates are also now gathering.

This, we think, sets up two plausible economic scenarios for the months ahead. In one scenario, persistent wage growth could enable some near-term economic resilience, but could ultimately mean a more severe downturn as monetary policy swiftly tightens to bring inflation back under control. A large pre-election fiscal stimulus could lead to a similar outcome. In another, higher interest rates could increasingly weigh on demand around the turn of the year which, alongside the overhang in corporate pressures, could mean a more sudden increase in unemployment and an abrupt conventional downturn.

While both paths are plausible, we err towards the latter scenario for three reasons:

- The first is that even with the terms-of-trade shock now beginning to fade, corporate pricing power seems limited. The discussion above notes a range of evidence on corporate profitability expectations and pricing intentions. None looks especially bullish. The Decision Maker Panel Survey for 2023–24, for example, currently shows firms expect margins to remain stable, rather than recover, in the 12 months ahead. Without some kind of recovery here, it is difficult to envisage a persistent shift in price and wage behaviour. If pass-through from lower input costs looks relatively symmetric, this reduces the risk of a more persistent shift (as well as weighing on inflation in the near term).
- The second concerns nascent evidence of a turn in the UK labour market. Here, we think that the UK is probably at a meaningful inflection point with respect to its post-COVID recovery. After years characterised by weak supply and strong demand, the two sides of the macroeconomic scale are beginning to inflect. Unemployment has already increased by 0.8ppt since its trough in the middle of last year. And as policy feeds through, we expect the slowdown to begin to build momentum. The UK is already flirting with historical thresholds where, conventionally, some feedback into consumer confidence and spending should be expected.
- The third is evidence of continued stability around low inflation and wage growth expectations. This, we recognise, is a controversial judgement. And many – including the MPC – have come to a different view. However, while there are substantial real rigidities in price setting, it would be premature to conclude that the UK Phillips curve has shifted. Indeed, while risks will remain over the coming months, we expect dynamics here to remain broadly well anchored overall, with short-run expectations easing as headline inflation eases.

None of this should be taken as a sign of complacency with respect to the inflationary risks. A more disruptive inflationary scenario is very plausible. But with monetary policy set to weigh heavily over the coming months, the risks seem skewed towards persistently weak pricing power on the part of firms, and a resolution of existing margin pressures via capacity shedding, rather than persistent inflation. That, we think, suggests a further downturn.

Policy implications: playing to the edge

Monetary policy has been forced to take out substantial insurance against the risk of more embedded inflation in recent months. This has reflected the significant uncertainty associated with the scale of the shocks involved. It also reflects a fiscal response that, in providing substantial offsets, has also sustained demand and impeded reconfiguration. For the MPC, this has meant broadening inflation, alongside a tight labour market.

Such an approach – pre-emptively taking out substantial insurance, in the interests of 'risk management'[42] – has been justified on the basis of three conditions:

- **First, a clear asymmetry in the cost of policy error.** In effect, this refers to a state of the world that is materially worse than others, and therefore merits additional action in order to avoid it. In this case, this was reflected in the risk of more embedded inflation.
- **Second, a dividend in being proactive.** By acting earlier, this yields a superior set of trade-offs than a more reactive approach. This incentivises an aggressive, early response.
- **Third, a reasonable degree of reversibility.** Namely, having taken out insurance, this is relatively easy to reverse should a more benign outcome materialise.

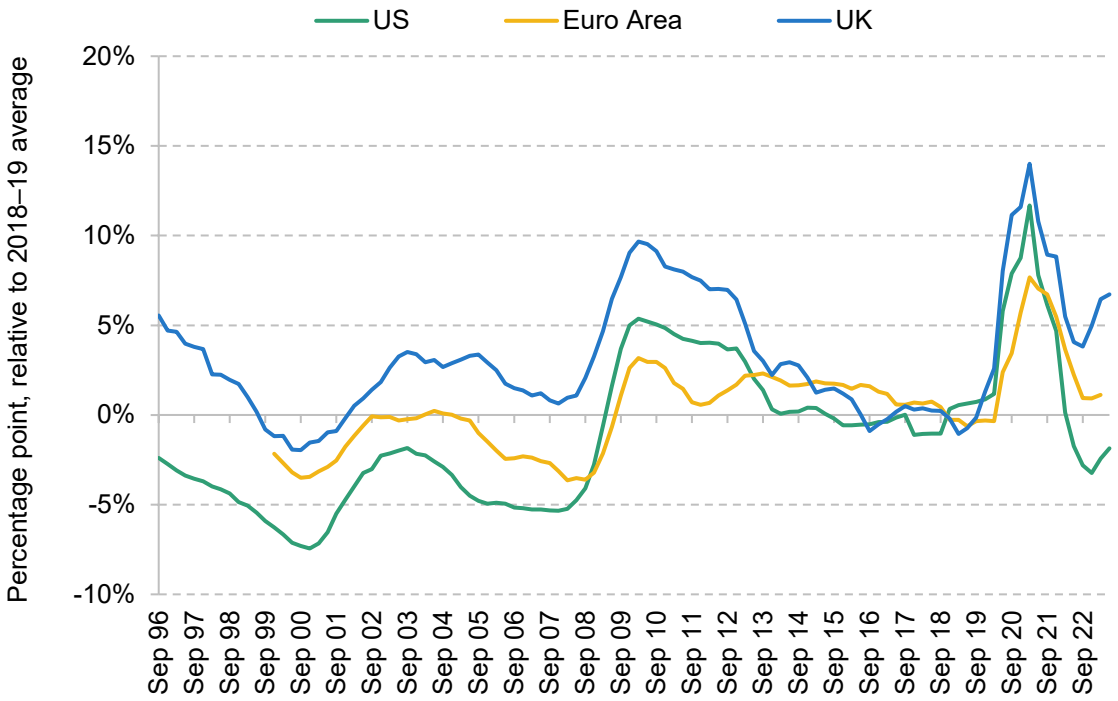
Even based on the spot data, we think there are signs that these conditions increasingly no longer apply. In particular, the *cost of doing too little* is now also not obviously greater than the cost of doing too much in our view. This relates first to evidence of a turn in the labour market. It also reflects broader signs of accelerating policy transmission into aggregate demand.

In the latter case, the downside risks are growing – primarily because of risks to asset prices. If these were to deteriorate sharply alongside an already slowing economy, the potential for an adverse feedback effect between weak asset prices, demand and employment would be material. 'Higher for longer' in global rates further adds to the risk. And such dynamics would be hard to reverse. Balance sheet impairments usually have the effect of steepening the 'investment–savings' curve as households and firms seek to repair the damage – leaving the economy less sensitive to monetary policy. And with the UK population now older and less well protected by instruments such as defined benefit pension schemes, many may seek not just to repair the damage, but indeed to secure further insurance. This could elongate the downturn.

Already, saving behaviour in the corporate and household sectors are similar to those usually observed in the early stages of a balance sheet recession (see Figure 2.43). This is consistent with materially restrictive rates, but it points to the potential for an increasing deficiency of aggregate demand as the fiscal impulse fades.

[42] For a discussion, see Evans et al. (2015).

Figure 2.43. Net non-financial private sector saving: UK, US and Euro Area



Note: Chart shows total net saving of the household and non-financial corporate sector.

Source: ONS, national statistical offices and Citi Research.

Looking into 2024, all of this gives us cause for concern. There of course remains the risk of more persistence in wage and price setting, which may yet justify persistently high rates. In recent months, the MPC seems to have now concluded these risks have already crystallised – primarily on the back of stronger-than-expected price data in Q2. To us, the evidence is not yet as conclusive. But having taken out substantial insurance, if persistent inflation fails to materialise, then policy should reverse course quickly – especially in light of the balance sheet risks noted above.

All of this leaves monetary policy with something of a conundrum. Risks around wage and price setting mean that slow growth and even higher unemployment are – at least on the surface – insufficient for a loosening of policy. Instead, only seeing the 'whites of the eyes' of disinflation will do. That, certainly, would be the lesson from the 1970s – namely, that policy should not be loosened until inflation has been definitively tamed. The issue is that, by definition, once this has been achieved, policy has been too tight for too long. And, by holding a tight stance, this could plausibly increase the risk of broad-based deleveraging, and a protracted recession. In that sense, while the lessons of the 1970s still apply to some degree, they must be put in the context of structural trade-offs that complicate the contemporary policy dilemma.

In our view, the optimal policy response requires navigating a path between securing sufficient evidence of disinflation and being ready to move relatively aggressively if inflation does in fact

appear well anchored. We think this will require something of an informed 'leap of faith'. Calibrating that is likely to prove incredibly difficult. And after the experience of recent years, the MPC will likely be justifiably reticent to loosen.

In our view, the most important factor from here will be the data surrounding pricing power and margins, and then wage growth in 2024. If both sets of data continue to moderate, we think the committee should reverse course quickly. For now, the MPC's latest communications suggest it plans to hold rates high for an extended period. We see the risks as skewed towards waiting too long to cut, adding to the downside risks around activity further out.

For now, we think that the MPC is probably done hiking. But with rates at 5.25%, the implication of the arguments above is that monetary policy challenges are, in many respects, just getting going. By Q2 of next year, even with core inflation above target, we think the case for a reversal will be deafening. We see a growing risk that this is followed by an increasingly aggressive cutting cycle in the months to follow, as the MPC is once again caught behind the curve.

The challenges here are not unique to the Bank of England. Having wielded a sledgehammer on the direction of backward-looking data, advanced economy central banks face a struggle to now adopt a more forward-looking approach. If the last 12 months were the most challenging since the MPC's inception, the near future may be harder still.

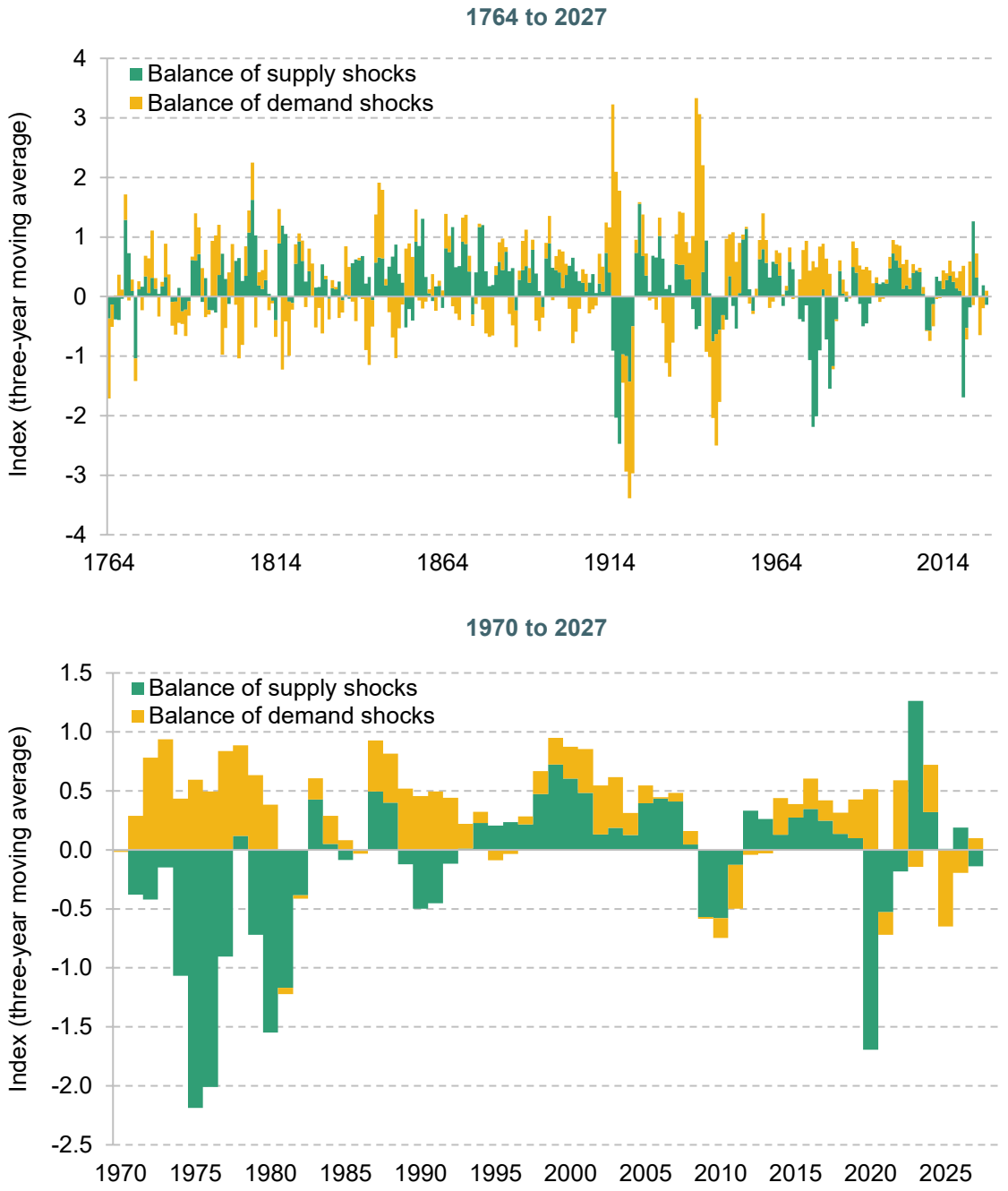
Lessons (not) learned: making the economy safe for supply shocks

These difficulties speak to a more fundamental takeaway from the UK's post-COVID economic experience – namely, that as volatility moves from the demand to the supply side of the economy, a different policy playbook may be required. As Figure 2.44 shows (and as we have noted above), the predominant driver of the UK's economic challenges in recent years emanate from the 'supply side' of the economy. This is a change – with the only comparable shock in recent decades being that of the 1970s.

Supply shocks pose different challenges from a policy perspective. The aim should be to minimise the adverse impact of the shock – most notably by driving adjustment. Then, to the degree a loss is unavoidable, managing the inflationary fallout hinges on a timely and sustainable allocation of the associated impairment across firms and households. With the ecological and geopolitical transition both implying a decade of weaker and more volatile supply, such challenges are likely to keep coming.

We think there are three points worth noting here.

Figure 2.44. Decomposition of macroeconomic volatility



Note: Supply and demand shocks are identified using an agnostic identification procedure (Uhlig, 2005). A positive demand shock is characterised as a positive shock to both output and inflation. A positive supply shock is a positive shock to output but a negative shock to inflation. A negative supply shock is characterised as a negative shock to output and a positive shock to inflation. A negative demand shock is characterised as a negative shock to both output and inflation. The bars show the net balance each year, on a three-year rolling-average basis. Figures for 2023 to 2027 are Citi forecasts.

Source: Thomas and Dimsdale (2016), Uhlig (2005), ONS and Citi Research.

First, in the context of repeated supply shocks, monetary policy alone is able to exert at best only partial control over the risk of a shift in the inflationary regime. The primary issue here is the lags. Supply shocks – by virtue of their unanticipated nature – typically leave policy on the back foot. And in the UK's 20th century economic experience, 85% of the inflationary impact of a supply disruption materialises over two years – too quickly for the impacts of monetary policy to meaningfully offset.

This, in and of itself, might not be especially problematic. But the lags do create issues when trying to manage the second-round risks associated with especially large shocks. As we have seen, in recent months the MPC has felt it necessary not just to remove monetary policy accommodation, but also to weigh against the risk of more embedded inflation. With CPI well into double digits, we think that is entirely appropriate. The issue is that the lags on rate increases are simply far too long. Some have tried to argue monetary tightening can weigh directly on inflation expectations and wage setting (Yotzov et al., 2023b). But evidence of such an effect is limited (Tenreyro, 2023). The implication is that while the economy faces an imminent inflationary risk, monetary policy can only deliver insurance two years late.

In the medium term, monetary policy will always ultimately be able to deliver price stability. The question is at what cost. The fundamental challenge here is to ensure the effect of a supply shock on incomes and demand is allocated quickly. When seen in this light, the belated nature of monetary policy imposes two costs.

- First, it adds to the risk of a more embedded shift in inflationary behaviour given the lag on monetary policy transmission into demand, increasing the risk that policy is forced to do more later.
- And second, a delay raises questions of institutional credibility – specifically the question of whether policy is actually willing to allocate the loss. Such considerations are especially notable when fiscal policy is plausibly acting against monetary policy tightening.

In both senses, we think monetary policy is subsequently forced to do more ex-ante – trading off 'optimal' policy against a desire to signal resolve. This worsens the associated trade-off. Particularly in the face of further large, imported cost shocks, monetary policy therefore feels poorly positioned to lead the response.

Second, we also think an over-reliance on monetary policy risks compounding the longer-run losses associated with supply shocks. This partly relates to the tendency for monetary policy, in the face of these kinds of pressures, to have to do more. But this also relates to the inherent nature of monetary policy tightening itself – and in particular its tendency to weigh on investment (Garga and Singh, 2021).

Ordinarily, feedback effects from monetary policy into potential can be largely (if not fully) ignored by central banks. This is especially true when (1) cycles are demand-driven or (2) monetary policy is managing only small trade-offs between second-round inflationary effects and output. In the latter case, policy tightening may generate small adverse feedback effects into potential, but these are not necessarily a first-order concern in calibrating policy overall.

The key change in recent years – and in the outlook ahead – we think are shocks involving economic reconfiguration. These differ in two notable respects:

- First, they can be persistent – meaning monetary policy is responding to the first-order inflation effect of a supply shock. In this sense, there is a much larger trade-off between growth and inflation, and an 'optimal' policy response may require a much larger tightening.[43]
- Second, reconfiguration-inducing shocks by themselves also tend to have multiple economic equilibria – with investment highly contingent on the ability to demonstrate where returns are likely to be strongest going forward.[44] This means any policy tightening runs a greater risk of a more permanent effect on economic potential.

The first of these issues in particular means there is more that policy can actually do to manage the inflationary risks. Although we note that with respect to the first point above (the issue of lags), reconfiguration-driven inflation can still emerge relatively quickly. In that sense, monetary policy still faces the same challenge of managing the risk of an imminent shift in behaviour.

The question here though is what is appropriate. Hypothetically, if monetary policymakers could have seen recent energy shocks coming, even with a 'balanced' policy rule they should have increased unemployment to near 10% to offset at least some of the inflationary effects. All we are arguing here is that while some tightening is of course required, the appropriate trade-off should account explicitly for various forms of hysteresis.

The choice of policy instrument also really matters here. While sudden fiscal tightening can have similar 'scarring' effects (Fatás and Summers, 2017), we think there is more scope for these responses to be mitigated through policy design. And aside from weighing particularly on investment, there are also signs that sudden increases in the cost of capital can weigh on rates of reallocation (Fornaro and Wolf, 2020), while rates volatility can also obscure asset valuations – slowing reallocation. Fiscal policy can adjust to mitigate these effects. And to the degree that

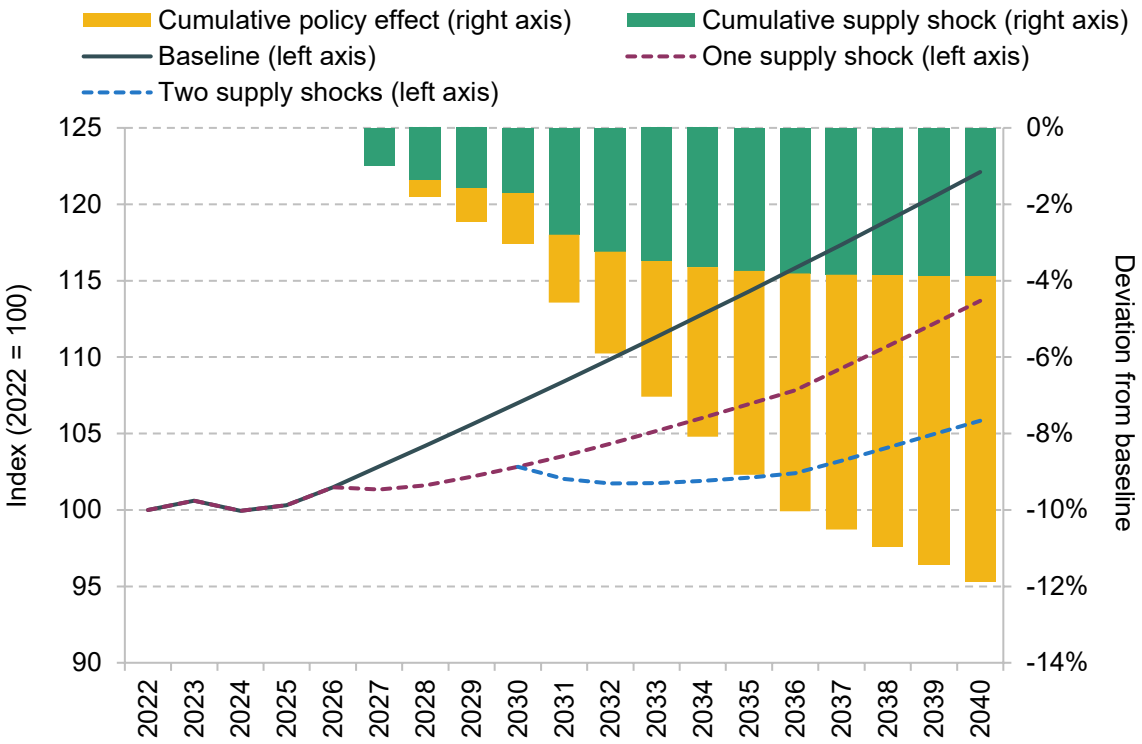
[43] One way of thinking about this point is that ordinarily in the event of an imported cost shock, such as an oil price shock, policy faces a trade-off but only between the 'second-round' effects on domestic wage and price setting (see Blanchard and Galí (2008)). This is because the primary trade-off (between growth and inflation) falls within the policy lags, meaning there is nothing monetary policy can do. In the event of a persistent supply shock, however, some of the first-order effects could fall within a period in which monetary policy is able to exert some influence.

[44] For discussion, see Vines and Willis (2021).

monetary policy imposes the greatest (real rates) tightening on sectors with lower demand and weaker price growth, well-designed fiscal policy could mean a lower 'sacrifice ratio' – at least in theory.

More work is needed in the face of supply shocks to determine the optimal trade-offs between short-term counter-cyclical management and the potential for a longer-run recovery. But we know that, even in normal times, monetary tightening tends to have lasting effects on economic activity. In that sense, interest rates are unlikely to be the best tool at our disposal. One study, focused on the longer-term impact of monetary tightening, suggests a 100bps policy surprise deducts 2–3% from activity over the subsequent 12 years[45] (Jordà, Singh and Taylor, 2023).

Figure 2.45. Illustrative real GDP profile in adverse supply scenario



Note: The chart shows the impact of two supply shocks, one in 2027 and one in 2031. Trend growth is assumed to be 1.3% from 2026. The impact of a supply shock is taken from a long-term analysis of supply shocks dating back to 1870 – assuming policy is held constant. An average supply shock is assumed to weigh on activity by 1.5% cumulatively after three to four years. The policy impact is taken from Jordà, Singh and Taylor (2023), accounting for trade linkages and focusing only on the post-1948 experience.

Source: Jordà, Singh and Taylor (2023), Uhlig (2005), ONS and Citi Research.

[45] Here we are employing the estimate from the post-1948 sample only, adjusting for some of the external spillovers. The full sample estimates are worse.

The key point is that if adverse supply shocks keep coming, and monetary policy tightens in the face of these, that could translate into more severe permanent economic scarring and an extended period of economic stagnation. Figure 2.45 shows the implication for the longer-term economic trajectory. This, we should stress, is not a forecast but rather a (basic) illustration. But assuming two further supply shocks of roughly a third of the severity of the pandemic over the coming two decades,[46] alongside a 150bps hiking cycle in each case, the associated consequences are sufficient to condemn the UK to almost two decades of stagnation. Given the low level of potential growth as it is, these are effects the UK can ill afford.

The third point here concerns the financial risks. The UK is now managing the risk of embedded inflation, in a context of weak potential growth, high debt and a large external deficit. All of these factors add to the financial vulnerability. As we noted above, we are not convinced the UK economy is now more structurally resilient to higher rates. Indeed, in our view, the main driver of structurally lower policy rates in the UK over recent decades has been the growth in wealth inequality, and associated differences in the marginal propensity to consume. With aggregate private indebtedness still highly inflated, we see no reason to think that picture has fundamentally changed.

As we noted above, macroprudential policy has done a lot to reduce the liquidity risks around indebtedness. However, issues remain. One way of quantifying the potential risk here is in terms of 'GDP at risk' models (Adrian, Boyarchenko and Giannone, 2019) – which explicitly focus on the potential risks around the tails of the output distribution. Supply shocks, and higher interest rates, compound the risk in both cases (Aikman, Bluwstein and Karmakar, 2021). This does not necessarily mean that hiking into a supply shock will precipitate a financial crisis, but over time it suggests such a path is plausibly more risk prone. The fundamental issue here is one of macroeconomic solvency. Over the past 50 years, rates have been systematically cut to boost asset prices, and avoid an excess of saving and a subsequent deficiency of demand. As we noted above, having hiked aggressively, material impairments to private balance sheets pose notable financial and economic risks.

All combined, these various downside risks are still outweighed by the consequences of more embedded inflation, and the associated loss of nominal credibility. In that sense, we are not arguing that policy should merely sit on its hands when faced with the risk of more persistent inflation. However, using monetary policy alone to manage these risks over the coming decades is likely to be suboptimal. Long lags mean monetary policy must tighten more, in order to achieve the same insurance. In the process, monetary policy also risks compounding inevitable

[46] Supply shocks here are identified using the procedure described in Uhlig (2005). The adverse shock is assumed to deduct just under 2ppt from the GDP level over three years. It also adds 5–6ppt to the CPI level over the same period. Rates are assumed to be held constant in the simulation.

output losses associated with the supply shocks that policy was tightened to address. In both cases, fiscal instruments may be able to achieve better macroeconomic trade-offs.

The implication, we think, is a shift in the fiscal–monetary policy mix. In recent years, there has been a tendency to defer all macroeconomic management to monetary policy. And post-COVID, a common refrain has been to recommend tight monetary policy alongside loose fiscal. This, we think, muddles two very different questions. First, targeted fiscal support is absolutely appropriate in the context of a supply loss to aid adjustment. But second, this should not come at the expense of stoking inflation, and worsening the trade-off faced by monetary policymakers. As the full costs of the monetary-policy-based insurance becomes clear over the coming years, we think a more fundamental discussion will be needed around managing these risks going forward.

Policy recommendations: three conclusions

All combined, the analysis points to three urgent areas for reform.

First is investment in greater macroeconomic flexibility. The UK has recovered from the last two major economic shocks via looser monetary policy, meaningful currency depreciation and constructive tailwinds to UK terms of trade. All three drivers are likely to be absent this cycle. The UK's post-pandemic experience has instead been littered with evidence of adjustment challenges. Acute reallocation has exposed concerning structural trends associated with declining business dynamism. After persistent evidence of these themes across two crises (COVID and the GFC), we see this as an area that demands a newfound policy focus: one with a greater focus on fiscal tools that enable, rather than impede, reconfiguration. This also requires the construction of macroeconomic institutions that provide a better underlying macroeconomic resilience.

Second is fiscal reform. As we have seen, fiscal policy is now playing a larger role in responding to shocks. But with long-term interest rates above 4%, and long-term growth prospects remaining depressed, the UK must now juggle these cyclical demands with the concurrent need to run a primary surplus in the long term (for the first time since 2000). This is even as structural issues around private sector solvency and public services demands continue to grind higher. This is something of a perfect storm. With the UK dependent on imported capital, proactive work is needed to steady the ship. Tighter governance is required to avoid the kind of fiscal drift evident in recent years.

And with respect to its management of shocks, we think fiscal policy also has to become more macroeconomically aware. While monetary policy has of course made errors over the past three years, fiscal policy has exerted a much greater influence over the post-pandemic recovery. This, in many senses, has been both welcome and, especially in early 2020, essential. But it has also

caused issues. The core problem, as we noted above, was dedicating too much fiscal support to blanket subsidies, and too little to encourage reconfiguration. In turn, we think this has compounded some of the inflationary challenges faced by the MPC. There are important lessons to learn for the response to future shocks.

The final issue here is the UK's broader macroeconomic policy set-up and, in particular, the relationship between monetary and fiscal policy. The supply-orientated nature of the recent shocks points, in our opinion, to a need for a shift in the responsibilities between monetary and fiscal policy to avoid a deteriorating set of trade-offs between growth, price stability and financial stability. Most importantly, this means fiscal policy taking on 'joint custodianship' for cyclical stabilisation. Monetary policy must retain the necessary executive power and institutional independence to ultimately guarantee price stability, but that is not the same as sole responsibility. Going forward, monetary policy must not remain the 'only game in town'.

References

Adrian, T., Boyarchenko, N. and Giannone, D., 2019. Vulnerable growth. *American Economic Review*, 109(4), 1263–89.

Aikman, D., Bluwstein, K. and Karmakar, S., 2021. A tail of three occasionally-binding constraints: a modelling approach to GDP-at-Risk. Bank of England Working Paper 931, http://dx.doi.org/10.2139/ssrn.3890370.

Akinci, O., Benigno, G., Del Negro, M. and Queralto, A., 2021. The financial (in)stability real interest rate, R**. Board of Governors of the Federal Reserve System, International Finance Discussion Paper 1308, https://doi.org/10.17016/IFDP.2021.1308.

Bank of England, 2018. Inflation Report – August 2018.

Bank of England, 2021. How do we monitor financial conditions? https://www.bankofengland.co.uk/bank-overground/2021/how-do-we-monitor-uk-financial-conditions.

Bank of England, 2023a. How are higher interest rates affecting new mortgage lending? https://www.bankofengland.co.uk/bank-overground/2023/how-are-higher-interest-rates-affecting-new-mortgage-lending.

Bank of England, 2023b. Monetary Policy Report – August 2023.

Barkai, S., 2020. Declining labor and capital shares. *Journal of Finance*, 75(5), 2421–63, https://doi.org/10.1111/jofi.12909.

Barkema, J., 2023. Corporate insolvencies reaching record highs: a look under the hood. Bank Underground, https://bankunderground.co.uk/2023/03/09/corporate-insolvencies-reaching-record-highs-a-look-under-the-hood/.

Bauer, M. and Swanson, E., 2022. A reassessment of monetary policy surprises and high-frequency identification. NBER Working Paper 29939, https://www.nber.org/papers/w29939.

Benigno, P. and Eggertsson, G.B., 2023. It's baaack: the surge in inflation in the 2020s and the return of the non-linear Phillips curve. NBER Working Paper 31197, https://www.nber.org/papers/w31197.

Bernanke, B. and Blanchard, O., 2023. What caused the US pandemic-era inflation? Peterson Institute for International Economics Working Paper 23-4, http://dx.doi.org/10.2139/ssrn.4505856.

Blanchard, O. and Galí, J., 2008. Labour market and monetary policy. *Journal of Money, Credit, and Banking*, 39, 35–65.

Blanchflower, D. and Bryson, A., 2022. The Sahm Rule and predicting the Great Recession across OECD countries. *National Institute Economic Review*, 1–51, https://doi.org/10.1017/nie.2021.47.

Broadbent, B., 2011. Rebalancing and the real exchange rate. https://www.bankofengland.co.uk/news/2011/september/rebalancing-the-real-exchange-rate-speech-by-ben-broadbent.

Broadbent, B., 2012. Productivity and the allocation of resources. https://www.bankofengland.co.uk/speech/2012/productivity-and-the-allocation-of-resources.

Broadbent, B., 2021a. Mismatch. https://www.bankofengland.co.uk/speech/2021/july/speech-given-by-ben-broadbent-mismatch.

Broadbent, B., 2023. The economic costs of restricting trade: the experience of the UK. https://www.bankofengland.co.uk/speech/2023/august/ben-broadbent-panellist-at-2023-economic-policy-symposium-jackson-hole-wyoming.

Broadbent, B., Di Pace, F., Drechsel, T., Harrison, R. and Tenreyro, S., 2019. The Brexit vote, productivity growth and macroeconomic adjustments in the United Kingdom. External MPC Unit Discussion Paper 51.

Broadberry, S., Chadha, J., Lennard, J. and Thomas, R., undated. Three centuries of UK business cycles: what lessons for today? https://www.economicsobservatory.com/three-centuries-of-uk-business-cycles-what-lessons-for-today.

Broadberry, S., Chadha, J., Lennard, J. and Thomas, R., 2023. Dating business cycles in the United Kingdom, 1700–2010, *Economic History Review*, 76(4), 1141–62 https://doi.org/10.1111/ehr.13238.

Buch, C., Bussiere, M., Goldberg, L. and Hills, R., 2019. The international transmission of monetary policy. *Journal of International Money and Finance*, 91, https://doi.org/10.1016/j.jimonfin.2018.08.005.

Bunn, P., Anayi, L.S., Bloom, N., Mizen, P., Thwaites, G., and Yotzov, I., 2022. Firming up price inflation. NBER Working Paper 30505, https://www.nber.org/papers/w30505.

Bunn, P., Le Roux, J., Reinold, K. and Surico, P., 2018. The consumption response to positive and negative income shocks. *Journal of Monetary Economics*, 96, https://doi.org/10.1016/j.jmoneco.2017.11.007.

Busetto, F., Chavaz, M., Froemel, M., Joyce, M., Kaminska, I. and Worlidge, J., 2022. QE at the Bank of England: a perspective on its functioning and effectiveness. https://www.bankofengland.co.uk/quarterly-bulletin/2022/2022-q1/qe-at-the-bank-of-england-a-perspective-on-its-functioning-and-effectiveness.

Cantore, C., Ferroni, F. and León-Ledesma, M., 2020. The missing link: monetary policy and the labor share. Bank of England Staff Working Paper 857, https://www.bankofengland.co.uk/working-paper/2020/the-missing-link-monetary-policy-and-the-labor-share.

Cesa-Bianchi, A., Thwaites, G. and Vicondoa, A., 2020. Monetary policy transmission in the United Kingdom: a high frequency identification approach. *European Economic Review*, 123, https://doi.org/10.1016/j.euroecorev.2020.103375.

Chari, A., Stedman, K.D. and Lundblad, C., 2021. Taper tantrums: QE, its aftermath and emerging market capital flows. *Review of Financial Studies*, 34(3), https://doi.org/10.1093/rfs/hhaa044.

Cloyne, J. and Hürtgen, P., 2016. The macroeconomic effects of monetary policy: a new measure for the United Kingdom. *American Economic Journal: Macroeconomics*, 8(4), 75–102.

Cloyne, J., Thomas, R., Tuckett, A. and Wills, S., 2015. A sectoral framework for analysing money, credit and unconventional monetary policy, Bank of England Working Paper 556, https://www.bankofengland.co.uk/working-paper/2015/a-secotral-framework-for-analysing-money-credit-and-unconventional-monetary-policy.

Coulter, S., 2016. The UK labour market and the 'great recession'. In M. Myant, S. Theodoropoulou and A. Piasna (eds), *Unemployment, Internal Devaluation and Labour Market Deregulation in Europe*, European Trade Union Institute.

Crafts, N. and Mills, T., 2020. Is the UK productivity slowdown unprecedented? *National Institute Economic Review*, 251, https://doi.org/10.1017/nie.2020.6.

Cunliffe, J., 2017. Are firms underinvesting - and if so why? Speech to the BCC, https://www.bankofengland.co.uk/speech/2017/are-firms-underinvesting-and-if-so-why.

Evans, C., Fisher, J., Krane, S. and Gourio, F., 2015. Risk management for monetary policy near the zero lower bound. https://www.brookings.edu/articles/risk-management-for-monetary-policy-near-the-zero-lower-bound/.

Fatás, A. and Summers, L.H., 2017. The permanent effects of fiscal consolidations. *Journal of International Economics*, 112, 238–50.

Felbermayr, G. and Gröschl, J., 2013. Natural disasters and the effect of trade on income: a new panel IV approach. *European Economic Review*, 58, 18–30, https://doi.org/10.1016/j.euroecorev.2012.11.008.

Feyrer, J., 2009. Distance, trade, and income: the 1967 to 1975 closing of the Suez Canal as a natural experiment. NBER Working Paper 15557.

Feyrer, J., 2019. Trade and income: exploiting time series in geography. *American Economic Journal: Applied Economics*, 11(4), 1–35, https://doi.org/10.1257/app.20170616.

Fornaro, L. and Wolf, M., 2020. The scars of supply shocks. CEPR Discussion Paper DP15423, https://ssrn.com/abstract=3737556.

Friedman, M., 1972. Have monetary policies failed? *American Economic Review (Papers and Proceedings)*, 62, 11–18.

Garga, V. and Singh, S.R., 2021. Output hysteresis and optimal monetary policy. *Journal of Monetary Economics*, 117, https://doi.org/10.1016/j.jmoneco.2020.06.005.

Ghysels, E. and Hang, Q., 2016. Estimating MIDAS regressions via OLS with polynomial parameter profiling. http://dx.doi.org/10.2139/ssrn.2837798.

Goldin, I., Koutroumpis, P., Lafond, F. and Winkler, J., 2020. Why is productivity slowing down? OMPTEC working paper, https://www.oxfordmartin.ox.ac.uk/publications/why-is-productivity-slowing-down/.

Haldane, A., Roberts-Sklar, M., Wieladek, T. and Young, C., 2016. QE: the story so far. Bank of England Working Paper, https://www.bankofengland.co.uk/working-paper/2016/qe-the-story-so-far.

Hall, R.E. and Jorgenson, D.W., 1967. Tax policy and investment behavior. *American Economic Review*, 57(3), 391–414.

Harrison, R., Thomas, R. and de Weymarn, I., 2011. The impact of permanent energy price shocks on the UK economy. Bank of England Working Paper 433, https://www.bankofengland.co.uk/working-paper/2011/the-impact-of-permanent-energy-price-shocks-on-the-uk-economy.

Hauser, A., 2023. A journey of 1000 miles begins with a single step: filling gaps in the central bank liquidity toolkit. https://www.bis.org/review/r230928f.htm.

Hjortsoe, I. and Lewis, J., 2020. Non-linearities, asymmetries and dollar currency pricing in exchange rate pass-through: evidence from the sectoral level. Bank of England Staff Working Paper 868, https://www.bankofengland.co.uk/working-paper/2020/non-linearities-asymmetries-and-dollar-currency-pricing-in-exchange-rate-pass-through.

HM Treasury, 2023. Mortgage Charter. https://www.gov.uk/government/publications/mortgage-charter/mortgage-charter.

Holston, K., Laubach, T. and Williams, J.C., 2017. Measuring the natural rate of interest: international trends and determinants. *Journal of International Economics*, 108(1), https://doi.org/10.1016/j.jinteco.2017.01.004.

Jordà, O., Kornejew, M., Schularick, M. and Taylor, A., 2022. Zombies at large? Corporate debt overhang and the macroeconomy. *Review of Financial Studies*, 35(10), 4561–86, https://doi.org/10.1093/rfs/hhac018.

Jordà, O., Singh, S.R. and Taylor, A.M., 2023. The long-run effects of monetary policy. Federal Reserve Bank of San Francisco Working Paper 2020-01, https://www.frbsf.org/economic-research/publications/working-papers/2020/01/.

Karadi, P. and Reiff, A., 2019. Menu costs, aggregate fluctuations, and large shocks. *American Economic Journal: Macroeconomics*, 11(3), 111–46.

Krippner, L., 2013. Measuring the stance of monetary policy in zero lower bound environments. *Economics Letters*, 118(1), 135–8.

Layard, R., Nickell, S. and Jackman, R., 1991. *Unemployment: Macroeconomic Performance and the Labour Market*. Oxford University Press.

Lubik, T.A. and Matthes, C., 2015. Calculating the natural rate of interest: a comparison of two alternative approaches. Federal Reserve Bank of Richmond Economic Brief 15-10, https://www.richmondfed.org/publications/research/economic_brief/2015/eb_15-10.

Luciani, M., 2020. Common and idiosyncratic inflation. FEDS Working Paper 2020-04, https://doi.org/10.17016/FEDS.2020.024.

MacQueen, R., 2023. Unemployment: the dog that didn't bark yet. NIESR Occasional Paper.

Mann, C., 2022. UK monetary policy in the context of global spillovers. https://www.bankofengland.co.uk/speech/2022/june/catherine-l-mann-speech-at-a-market-news-international-connect-event.

Mian, A., Straub, L. and Sufi, A., 2021. Indebted demand. *Quarterly Journal of Economics*, 136(4), https://doi.org/10.1093/qje/qjab007.

Miles, D. and Monro, V., 2019. UK house prices and three decades of decline in the risk. Bank of England Staff Working Paper 837, https://www.bankofengland.co.uk/working-paper/2019/uk-house-prices-and-three-decades-of-decline-in-the-risk-free-real-interest-rate.

Millard, S. and Tatomir, S., 2015. Firms' adjustment during 2010-13: evidence from the Wage Dynamics Survey. Bank of England Working Paper 568, https://www.bankofengland.co.uk/working-paper/2015/firms-adjustment-during-2010-13-evidence-from-the-wage-dynamics-survey.

Mrabet, H. and Page, J., 2023. How do firms pass energy and food costs through the supply chain. Bank Underground, https://bankunderground.co.uk/2023/08/24/how-do-firms-pass-energy-and-food-costs-through-the-supply-chain/.

Nabarro, B., 2021. United Kingdom economics: back to the future? An imperfect labour market post-pandemic – expanded. https://www.citivelocity.com/t/r/eppublic/27hne.

Nabarro, B., 2023a. What is hawkish is not forward looking, and what is forward looking is not hawkish, https://www.citivelocity.com/t/r/eppublic/2n67A.

Nabarro, B., 2023b. UK economics and rates: BoE: terminal strategy. https://www.citivelocity.com/t/r/eppublic/2p3OS.

Office for National Statistics, 2023. Long-term international migration, provisional: year ending December 2022, https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/internationalmigration/bulletins/longterminternationalmigrationprovisional/yearendingdecember2022.

Pissarides, C.A. 2011. Equilibrium in the labor market with search frictions. *American Economic Review*, 101(4), 1092–105.

Piton, S., Yotzov, I. and Manuel, E., 2023. Profits in a time of inflation: some insights from recent and past energy shocks in the UK. Bank Underground, https://bankunderground.co.uk/2023/08/30/profits-in-a-time-of-inflation-some-insights-from-recent-and-past-energy-shocks-in-the-uk/.

Ragnitz, J., 2022. Gewinninflation und Inflationsgewinner. Ifo Institut. https://www.ifo.de/en/publications/2022/article-journal/gewinninflation-und-inflationsgewinner.

Romer, C.D. and Romer, D.H. 2004. A new measure of monetary shocks: derivation and implications. *American Economic Review*, 94(4), 1055–84.

Rudd, J., 2021. Why do we think that inflation expectations matter for inflation? (And should we?). https://www.federalreserve.gov/econres/feds/files/2021062pap.pdf.

Schneider, P., 2018. The UK's productivity puzzle is in the top tail of the distribution. Bank Underground, https://bankunderground.co.uk/2018/03/29/the-uks-productivity-puzzle-is-in-the-top-tail-of-the-distribution.

Stock, J.H. and Watson, M.W., 2018. Identification and estimation of dynamic causal effects in macroeconomics using external instruments. *Economic Journal*, 128(610), 917–48.

Tenreyro, S., 2020. Monetary policy during pandemics: inflation before, during and after Covid-19. https://www.bankofengland.co.uk/-/media/boe/files/speech/2020/monetary-policy-during-pandemics.pdf.

Tenreyro, S., 2023. Macroeconomic stabilisation in a volatile environment. Contribution to ECB Forum on Central Banking 2023, Sintra, Portugal.

Thomas, R. and Dimsdale, T., 2016. A millennium of macroeconomic data.

Traynor, R., 2023. Red flag alert report - Q2 - rising debt and inflation drives a surge in companies entering financial distress. Begbies Traynor, https://www.begbies-traynorgroup.com/news/business-health-statistics/red-flag-alert-report-q2-rising-debt-and-inflation-drives-a-surge-in-companies-entering-financial-distress.

Uhlig, H., 2005. What are the effects of monetary policy on output? Results from an agnostic identification procedure. *Journal of Monetary Economics*, 52(2), 381–419.

UNCTAD, 2023. Global trade update (June 2023). https://unctad.org/publication/global-trade-update-june-2023.

Vines, D. and Willis, S., 2021. The rebuilding macroeconomic theory project part II: multiple equilibria, toy models, and policy models in a new macroeconomic paradigm. *Oxford Review of Economic Policy*, 36(3), https://doi.org/10.1093/oxrep/graa066.

Weber, I. and Wasner, E., 2023. Sellers' inflation, profits and conflict: why can large firms hike prices in an emergency? *Review of Keynesian Economics*, 11, 183–213, https://doi.org/10.4337/roke.2023.02.05.

Wells, B., 2022. Full employment and the 'office of hope'. NIESR, https://www.niesr.ac.uk/wp-content/uploads/2022/07/JC638-NIESR-Outlook-Summer-2022-UK-Box-A.pdf.

Willis, J. and Cao, G., 2015. Has the U.S. economy become less interest rate sensitive? *Federal Reserve Bank of Kansas City Economic Review*, 100(2).

Wilson, T., 2023. Labour market statistics, September 2023. Institute for Employment Studies, https://www.employment-studies.co.uk/resource/labour-market-statistics-september-2023.

Wolf, M. and Fornaro, L., 2021. Monetary policy in the age of automation. CEPR Discussion Paper DP16416, https://ssrn.com/abstract=3928695.

Wu, J.C. and Xia, F.D., 2016. Measuring the macroeconomic impact of monetary policy at the zero lower bound. *Journal of Money, Credit and Banking*, 48, 253–91, https://doi.org/10.1111/jmcb.12300.

Yotzov, I., Bloom, N., Bunn, P., Mizen, P. and Thwaites, G., 2023a. Profit margins and firm price growth: evidence from the Decision Maker Panel. Bank Underground, https://bankunderground.co.uk/2023/09/07/profit-margins-and-firm-price-growth-evidence-from-the-decision-maker-panel/.

Yotzov, I., Bloom, N., Bunn, P., Mizen, P., Ozturk, O. and Thwaites, G., 2023b. Firm inflation perceptions and expectations: evidence from the Decision Maker Panel. Bank Underground, https://bankunderground.co.uk/2023/07/07/firm-inflation-perceptions-and-expectations-evidence-from-the-decision-maker-panel/.

3. Outlook for the public finances

Carl Emmerson, Martin Mikloš and Isabel Stockton (IFS)

Key findings

1. The government's fiscal mandate **requires debt to fall as a share of national income between years 4 and 5 of the forecast period**. While the idea of getting debt on a falling path over time has its merits, **this specific target is much more poorly designed than most, such that focusing on 'headroom' against this target often gives a misleading impression of the health of the public finances**.

2. No fiscal target is completely game-proof, or applicable to every single conceivable situation. **But because it narrowly targets the change between year 4 and year 5 of the forecast, the fiscal mandate is overly sensitive to assumptions about growth, inflation and interest rates five years hence.** It is also too easy to 'game' by pencilling in policy changes over a five-year period that the government has no intention of actually delivering. And we should remember that of the 14 Chancellors who have served over the 44 years since 1979, only three (Nigel Lawson, Gordon Brown and George Osborne) actually remained in post for more than five years.

3. The supplementary target, which requires borrowing to be forecast to be lower than 3% of national income, is very loose by UK historical standards. **On virtually every occasion in the 43 years since 1980 (outside of the global financial crisis and the COVID-19 pandemic), the Chancellor at the time could have increased planned borrowing without breaching this target.**

4. The welfare cap, which currently places a limit on a measure of social security spending in 2024–25, is likely to remain on course to be missed – with a big factor being the increase in the number of individuals qualifying for incapacity and disability benefits. Rather than attempting to cut around £4 billion from spending in the coming financial year to bring it back to the limit specified by the welfare cap, **this oddly**

designed fiscal target should join many other badly designed targets in the dustbin of history.

5. At more than 40% of national income, revenues are set to reach historically high levels. In part, these are financing higher spending on debt interest, which we forecast to remain above 4% of national income this year, a level which, before last year, had not been seen since the late 1940s. **Overall public spending was forecast in the Budget to be 46% of national income this year, which would be only just below the pre-pandemic peak seen in 1975–76.** Even by 2027–28, spending was forecast to be 43% of national income, which would be 3% of national income above what was spent in 2007–08, prior to the financial crisis and after a decade of New Labour governments. Of this increase, 1.2% of national income is explained by debt interest spending remaining elevated.

6. Under the March 2023 forecast, borrowing would be 1.7% of national income in 2027–28. If this materialised, it would be the lowest level since 2001–02. But despite this, debt was still only forecast to fall very slightly, highlighting **the difficulty of preventing debt from rising as a share of national income when growth is weak and borrowing costs are high**.

7. **In the first five months of the financial year, tax revenues have run £13 billion, or 3%, ahead of the forecast, reflecting stronger nominal growth in the economy.** As a result, borrowing is running £11 billion, or 14%, below forecast. Under Citi's baseline scenario, some of this persists for the next seven months, leaving borrowing at £112 billion for the year, £20 billion below the Office for Budget Responsibility (OBR)'s March forecast for 2023–24 as a whole.

8. In March 2022, the OBR forecast that debt interest spending in 2026–27 would be £47 billion, but by March 2023 it had revised this up to £89 billion. **Taking current market expectations for Bank Rate alone could push debt interest spending up by a further £20 billion to £108 billion.** But market expectations are volatile. And whereas markets (at the time of writing) expect Bank Rate to be around 4% in 2026–27, Citi's forecast is for Bank Rate to fall to 2% by that year. In that case, debt interest spending would be £12 billion *lower* in 2026–27 than forecast in March. **That is a more than £30 billion swing in forecast borrowing depending on a decision over how best to forecast interest rates.**

9. **The impacts of higher inflation on the public finances are nuanced and partially offsetting.** If inflation proves more persistent, it will result in higher tax revenues as well as higher spending on debt interest and working-age benefits. Spending plans for

public services would be less generous than intended and the Chancellor would either need to top them up, or accept a reduction in scope or quality of services. **Under a range of plausible inflation scenarios, we can confidently say that borrowing will be comfortably below the 3% cap imposed by the supplementary mandate, but will also be comfortably above what was forecast in Rishi Sunak's final Budget as Chancellor in March 2022.**

10. In a weak-growth environment, **stabilising debt by 2028–29 is likely to rest on pencilling in another year of extremely tight spending plans, which will be very difficult to deliver when the time comes**. Larger realised losses from the Bank of England's quantitative tightening in a high-interest-rate environment could further add to debt (although not borrowing) and hence complicate meeting the letter of the fiscal mandate. Though, as outlined above, whether or not the government has debt falling in one particular year is not a good guide to the health of the public finances.

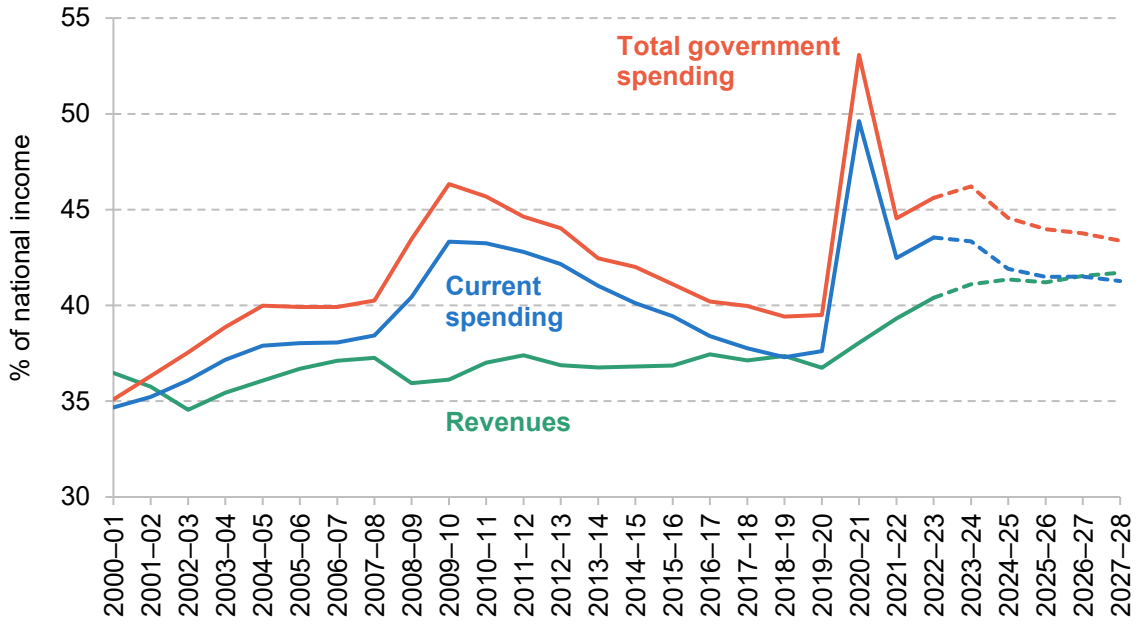
11. The case for tax cuts is weak. If anything, given the government's appetite for public spending, there is actually a reasonable argument for a net tax rise to be set out for implementation over the medium term. In the current environment of high inflation and rising interest rates, a fiscal loosening would be extremely difficult to justify – especially given the high and volatile costs of servicing debt. **The Chancellor should certainly avoid 'paying for' (certain) near-term tax cuts by pencilling in an (uncertain and difficult-to-implement) extension of the freeze to the personal tax allowance (in 2028–29) or by either tightening, or extending, the squeeze on public service spending beyond March 2025.**

3.1 Where are we and how did we get here?

The March 2023 Budget saw the Office for Budget Responsibility (OBR) forecast borrowing of £132 billion in 2023–24, or 5.1% of national income. This relatively high level of borrowing – largely unchanged as a share of national income from 2021–22 and 2022–23 – was forecast to push public sector net debt up to 92.4% of national income. Government spending, and therefore borrowing, had not fully recovered from the impact of the COVID-19 pandemic and associated government intervention when the cost of living shock came along. As shown in Figure 3.1, total government spending had climbed to 53% of national income in 2020–21, well above the UK's previous record level (46% in 1975–76), before declining to 44½% the following year – still well above its pre-pandemic level. Even by 2027–28, under the OBR's most recent forecast presented in March, spending would be 43% of national income, which would be 3% of national

income above what was spent in 2007–08, prior to the financial crisis and after a decade of New Labour governments.

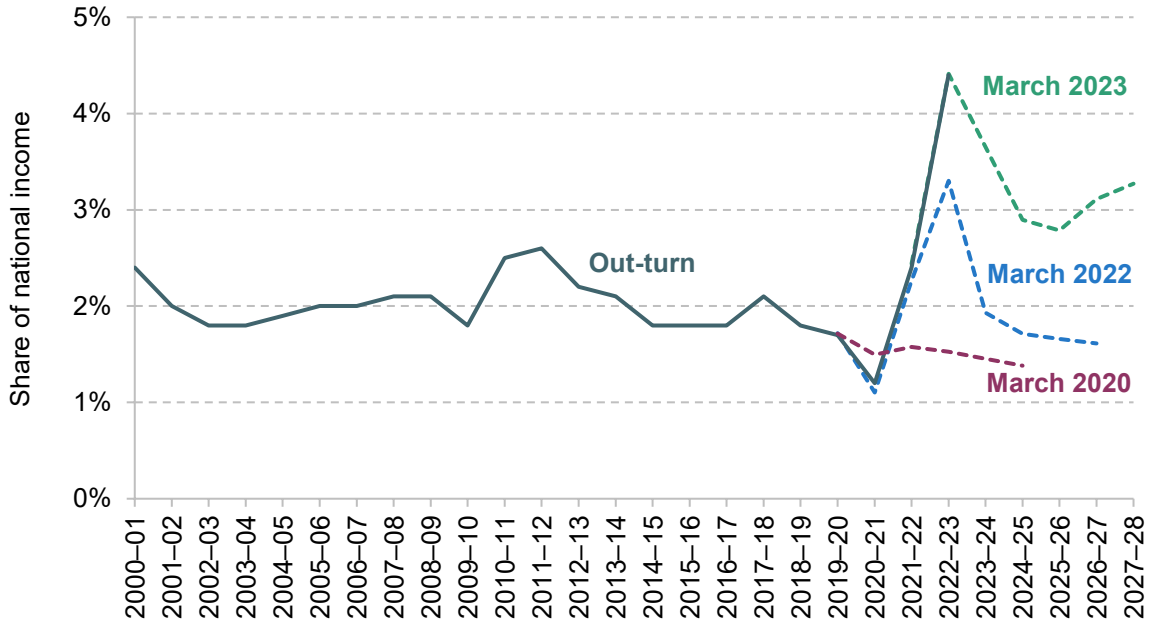
Figure 3.1. Government spending and revenues: out-turn and official March 2023 forecast



Note: Current expenditure including depreciation shown.

Source: OBR's public finances databank (obr.uk/data/).

Figure 3.2. Debt interest spending: out-turn and successive official March forecasts



Note: Central government debt interest net of income from the Asset Purchase Facility shown.

Source: OBR's public finances databank (obr.uk/data/).

Meanwhile, government revenues have been continually rising as a share of national income since 2019–20 to just above 39% in 2021–22. Following Russia's invasion of Ukraine and the subsequent spikes in prices of energy and food among other goods, the size of the state increased again in 2022–23 to almost 46% of national income (and close to that pre-COVID record share). Revenues, having exceeded day-to-day government spending for a brief period in 2018–19, are now not expected to do so until 2026–27 – meaning the government will not run a current budget surplus until that point.

A significant component of the increased government spending over the last year is due to rising inflation and interest rates pushing up the cost of financing much-elevated public sector net debt. Spending on debt interest averaged 2% of national income over the first two decades of the 21st century, but this climbed to 4.4% of national income in 2022–23 – a figure that had not been exceeded since 1948–49. Contrary to the forecast produced in March 2022, as shown in Figure 3.2, the OBR now expects spending on debt interest to remain elevated at around or above 3% of GDP over the medium term, i.e. around a full 1% of national income, or £26 billion a year in today's terms, higher than we had been used to since 2000. In 2007–08, on the eve of the financial crisis and with debt at just 35.8% of national income, debt interest spending stood at 2.1% of national income, 1.2% of GDP less than currently forecast for 20 years later. In other words, financing much higher debt can explain a non-trivial part, but by no means all, of the increase in spending since then.

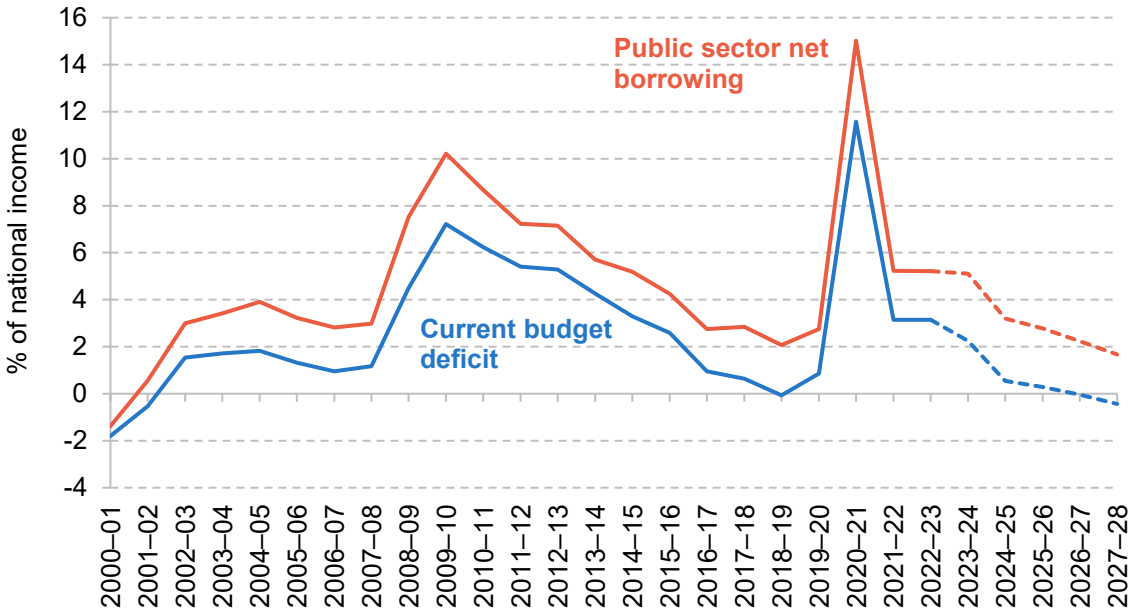
Public sector borrowing is forecast to drop from 5.1% of national income this year to 3.2% of national income in 2024–25 as the big support packages to help households and businesses with their energy bills expire. The OBR estimates that (gross of the 'windfall tax') these added £58 billion to borrowing in 2022–23 and a further £20 billion in 2023–24, with hardly any cost in subsequent years. After 2024–25 borrowing is forecast to fall only gradually, as shown in Figure 3.3. As a result, underlying public sector debt,[1] as shown in Figure 3.4, is forecast to increase by almost 7 percentage points of national income since 2022–23 and peak at just below 95% of GDP in 2026–27 – a level not seen since 1962–63 (although it was often above 100% of national income before that; see Figure 3A.1 in Appendix 3A).

At the time of the March Budget, the government was aiming to reach its target for debt to fall by the end of the forecast horizon, which at that point was 2027–28, through a combination of spending cuts and tax increases. While current spending is forecast to fall by around 2.3% of national income over the forecast period, government revenues are forecast to increase to around 41.7% of national income – which would be a record level since 1969–70. Within this, tax

[1] 'Underlying' debt excludes the contribution of Bank of England operations such as the Term Funding Scheme set up to support lending during and after the pandemic. It does *not* exclude the government debt *held* by the Bank of England under the quantitative easing programme.

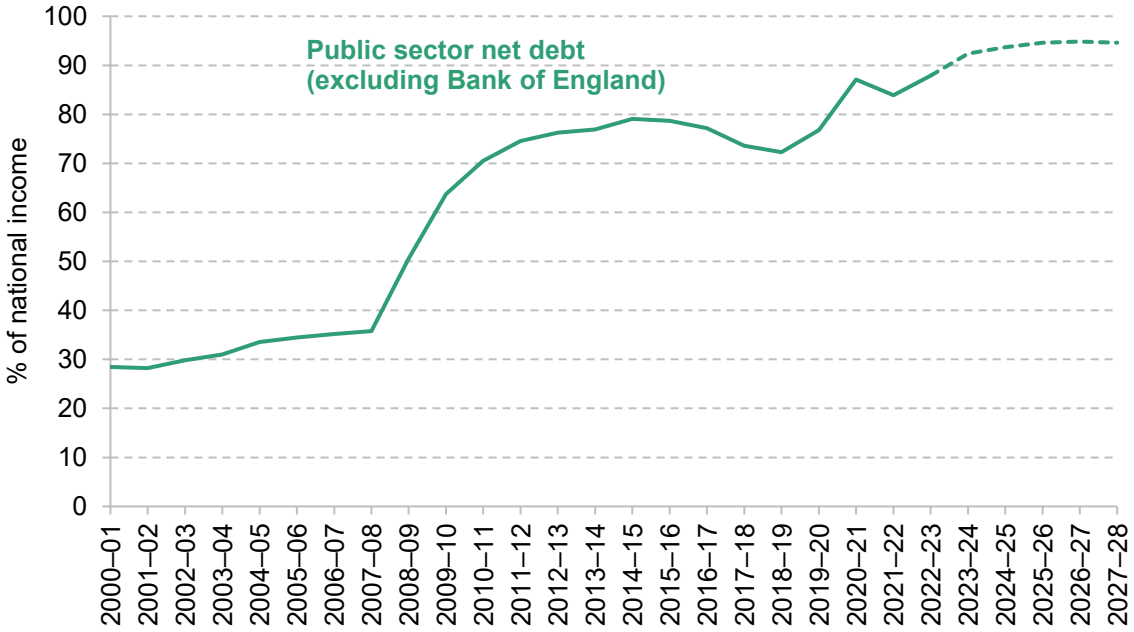
revenues, having risen by the biggest amount in any parliament on record, are forecast to reach a level that has never previously been maintained in the UK (Emmerson, Johnson and Zaranko, 2023).

Figure 3.3. Public sector net borrowing and current budget deficit: out-turn and official March 2023 forecast



Source: OBR's public finances databank (obr.uk/data/).

Figure 3.4. Public sector net debt: out-turn and official March 2023 forecast



Source: OBR's public finances databank (obr.uk/data/).

This chapter proceeds as follows. Next, in Section 3.2, we set out the Chancellor's three fiscal targets and the extent to which he was meeting them at the time of the March Budget. Section 3.3 describes how the outlook for some of the key fiscal determinants – growth, interest rates and inflation – has changed since the Budget. In Section 3.4, we describe the impact these changes in the economic outlook could be expected to have on the public finances, specifically the outlook for the paths of public sector net borrowing and public sector net debt. Finally, in Section 3.5, we discuss what, given this changing outlook and the uncertainties around it, the Chancellor should – and should not – do in his forthcoming Autumn Statement.

3.2 What is the Chancellor aiming for?

The government currently has three formal fiscal targets in place (HM Treasury, 2023).[2] Two relate to the forecasts for the end of the five-year forecast horizon: the fiscal mandate, which requires debt to be falling as a share of national income in the final year of the forecast, and a supplementary target that requires borrowing to be below 3% of national income in the same year. Compliance with these targets is assessed by the OBR twice a year in in its Economic and Fiscal Outlooks which are published alongside fiscal events. The third target – the welfare cap – requires spending on a certain measure of welfare spending to be under a specific cap in 2024–25. An oddity of this target is that the government has requested that the OBR only formally assesses compliance with it in the first fiscal event of each parliament. This section discusses each target in turn.

The fiscal mandate

This target generally receives most attention out of the three, perhaps because it is currently more binding. It states that debt needs to be falling as a share of national income by the end of the forecast horizon. This is operationalised as a falling ratio of debt to national income between years 4 and 5 of the forecast period.

In general, having debt falling over the medium term is a sensible fiscal policy aim, whether codified as an explicit fiscal rule or not. If we want to reduce vulnerability to risks such as rising interest rates and, *in extremis*, a loss of confidence in the UK government as a borrower, we should avoid debt being on an ever-increasing trajectory. In addition, to preserve 'fiscal space' to respond to emergencies, such as the pandemic, when we will want to increase debt sharply, we ought to reduce debt, at least on average, outside of these periods of crisis. At the same time, it

[2] Sensibly, the government has in place an escape clause allowing it to suspend the rules in the event of a significant adverse shock. In addition – and also sensibly – the Charter for Budget Responsibility states that 'alongside the fiscal mandate and supplementary targets, the Treasury will also consider wider data, analysis and evidence on the affordability of public debt and the strength of the public sector balance sheet, with the aim of supporting the achievement of the fiscal objectives'.

can be sensible to introduce adjustments gradually rather than all at once, and targeting the medium term is one way to operationalise this.

While the underlying idea to aim for a falling ratio of debt to national income has its merits, the specific fiscal target is more arbitrary and gameable than most. It can be arbitrary whether debt happens to be on course to fall in the fifth year of the forecast specifically; whether debt is forecast to rise up to, or beyond, that specific point does not affect whether the rule is being met. And – relatedly – it can be gameable because (for example) tax cuts or spending increases that are supposedly put in place for three years will not make the target harder to meet even if, every year, these 'temporary' giveaways are subsequently perpetually extended for 'just one more year'. The same issue applies to spending cuts or tax rises that are pencilled in for the final forecast year, but continually 'postponed'.

Targeting the change in debt – or any other element of fiscal plans – in five years' time means targeting a year that, at least based on past experience, will typically be beyond the current spending review period. It is also worth bearing in mind that Chancellors are usually not in office for that long: over the 44 years since 1979, there have been 14 Chancellors, giving an average tenure of just over three years, with only three Chancellors (Nigel Lawson, Gordon Brown and George Osborne) over that period staying in post for more than five years. This could increase the temptation to set unrealistically low spending plans in order to have forecast borrowing and debt in line with the target. There is no single 'correct' way to resolve this trade-off; however, by targeting the last year of the forecast, the government has chosen to prioritise flexibility over accountability to the maximum possible extent.

The extent to which debt is forecast to fall (or increase) between years 4 and 5 of the forecast horizon is also extremely sensitive to the predicted growth in the cash size of the economy five years out. That is because, mathematically, for debt to be forecast to fall as a share of national income, it requires the growth in national income to exceed growth in debt. More often than not, successive official forecasts do not contain a significant revision to the prediction of growth in the cash size of the economy five years out. But, on occasion, the revisions have been substantial. For example, over the 41 official forecasts there have been since April 2003, on eight occasions there was an upwards revision to the forecast change in debt in the final year of the forecast horizon of more than the current 'headroom' – and on half of those occasions the upwards revision was £28 billion or more.

Moreover, revisions to the change in the debt-to-GDP ratio between years 4 and 5 do not necessarily give an accurate or comprehensive reflection of how the fiscal outlook has actually changed. In other words, a revision might increase headroom against the target even though the broader fiscal outlook has not improved, or vice versa. Table 3.1 uses some stylised examples to highlight this. These are not fully fledged economic or fiscal scenarios, but merely highlight the

sensitivity of this particular fiscal rule to illustrative changes in underlying assumptions or example policy decisions.

Under last March's OBR forecast, the target is met by a wafer-thin margin of £6 billion in current terms. The sensitivity of the target to forecast growth in the cash economy is highlighted by rows 2 and 3, which show the impact of economy-wide inflation (as measured by the GDP deflator) being revised up or down by 1 percentage point (and assuming no change to the forecast real rate of growth, or any other determinant of the fiscal forecast). An upward revision could be expected to increase the Chancellor's headroom to around £20 billion. But a downward revision could be expected to lead to the target being missed by £9 billion. In normal circumstances, a revision of forecast economy-wide inflation five years out of 1 percentage point (ppt) would be large. But in recent times – with large increases in the price of imported energy and food – revisions on a similar scale have occurred, and in a world of more volatile supply (see Chapter 2) such changes could become more common. For example, between March and November 2022, forecast economy-wide inflation five years out was revised down by 0.8ppt (alongside a large, more widely publicised, upward revision in the near term).

Table 3.1. Illustrative changes and their effect on meeting the debt rule

	Fiscal rule
1) March 2023 forecast	Met by £6 billion
2) Economy-wide inflation up by 1ppt in 2027–28	Met by £20 billion
3) Economy-wide inflation down by 1ppt in 2027–28	Missed by £9 billion
4) £20 billion fiscal loosening each year until 2026–27	Met by £6 billion
5) £20 billion fiscal loosening in 2027–28	Missed by £9 billion
6) Gilt rates 1ppt higher throughout	Met by £6 billion
7) Gilt rates 1ppt higher, but only in 2027–28	Missed by £19 billion

Note: Amounts in 2023–24 terms. Fiscal loosening assumed to be announced in 2023–24 with a gradually fading stimulus effect.

Because it only targets the change between two specific years, the target is particularly problematic when thinking about changes to the profile of the fiscal outlook over time. This is illustrated by the other examples in Table 3.1. If we add a fiscal loosening of £20 billion each year until 2026–27 – but not in the final year of the forecast – then, as shown in row 4, with typical assumptions about the temporary stimulus effects of such a loosening, which in turn give a short-lived boost to revenues, the target would still be met because debt would still be falling in the last year, when the stimulus has been withdrawn. This would be despite debt being at a higher level in both year 4 and year 5 of the forecast as a result of the earlier fiscal loosening.

However, things look quite different if we assume that a loosening of the same annual size is announced for just the final year of the forecast. Again, we include a temporary boost to the economy and hence to revenues, although a smaller one since the economy would have had time to adjust in advance.[3] Then, as shown in row 5, the target would be missed by a substantial margin. This is true even though the loosening would be in place for a much shorter time, and its cumulative size therefore much smaller and the level of debt correspondingly lower throughout, than in the scenario shown in row 4.

A similar issue arises with changes to the profile of economic determinants of the fiscal outlook. For example, if we assume interest rates on government bonds are 1ppt higher throughout the forecast, then, as shown in row 6, the target would still be met – debt relative to national income is higher throughout the forecast period, but it would still be on course to fall, albeit fractionally, in the final year. If, on the other hand, interest rates are 1ppt higher in the final forecast year *only* – a less significant deterioration in the outlook – then, as shown in row 7, the target is missed because debt as a share of national income follows the same trajectory during the first four years, and then increases in the final year as the assumed increase in interest rates kicks in.

No fiscal target – ones that have been in place in the past, and ones that have been proposed, including those proposed by authors of this chapter – is completely game-proof, or applicable to every single conceivable situation. Codified fiscal targets cannot substitute for appropriate scrutiny that takes a holistic view of the sustainability of fiscal policy. However, this particular target, with its strong reliance on the profile of uncertain future deflator growth and erratic response to changes in assumptions, is much more poorly designed than most.

The supplementary target

This target places a limit on borrowing of 3% of national income in the final year of the forecast. Borrowing is a salient summary measure of the tightness of fiscal policy and, as mentioned above, it is often sensible to target the medium term with a fiscal rule. This allows Chancellors to 'look through' any temporary economic disturbance, respond to crises, and implement gradual rather than sudden adjustments, all without jettisoning their fiscal target.

There are, of course, trade-offs. A target for overall borrowing means that both investment spending and day-to-day spending are treated the same, whereas a stronger economic case for borrowing on an enduring basis might be made when it is being used to finance investment spending (assuming that spending is done well) than when it is being used to cover day-to-day spending (see Chapter 6).

[3] Preannouncing a fiscal loosening for the last year of the forecast could therefore perhaps be considered an odd course of action.

In any case, in the current fiscal situation, the supplementary target on borrowing is not the binding constraint. As stated above, the Chancellor is currently meeting his target to have debt falling as a share of national income by just £6 billion in today's terms (as the relevant measure of debt is forecast to fall from 94.8% of national income in 2026–27 to 94.6% of national income in 2027–28, i.e. a margin of 0.2% of national income, or £6 billion in today's terms). In contrast, in 2027–28, public sector net borrowing is forecast to be running at 1.7% of national income, which gives 1.3% of national income – or £34 billion in today's terms – of headroom against the 3% ceiling. If borrowing did follow the path forecast in the March 2023 Budget then, at 1.7% of national income in 2027–28, it would be the lowest level of borrowing since the 0.6% of national income borrowed in 2001–02. The primary balance – i.e. borrowing excluding spending on debt interest – would be in surplus by 1.1% of national income, which similarly would be the biggest surplus since 2001–02 (when it was 1.2% of national income).

A requirement to have forecast borrowing below 3% of national income by the final year of the fiscal forecast is also really not very stringent by UK historical standards. Over the 77 years from 1946–47 to 2022–23, public sector net borrowing averaged 2.8% of national income. So the target could be met despite aiming for an above-average level of borrowing. More relevantly – given that the target applies to forecast borrowing in five years' time – if we take the 70 official forecasts produced over the period March 1980 to March 2023 (inclusive) where the forecast extended at least three years forwards, only on five occasions was borrowing forecast to exceed 3% of national income at the end of the forecast horizon. One was March 1993. The other four (April 2009, November 2009, March 2010 and November 2020) were during the global financial crisis and the COVID-19 pandemic and therefore are all situations in which we might expect the fiscal targets to be suspended anyway. This suggests that on virtually every occasion in the 43 years, the Chancellor at the time could have increased planned borrowing without breaching this target.

The welfare spending cap

The welfare cap, as its name suggests, places a limit on a measure of social security spending. Placing a cap on spending on a particular government function, as opposed to the overall tightness of fiscal policy or debt interest (which no government likes to spend money on), is somewhat unusual territory for fiscal rules. But even taking the goal of the cap as given, the way it is operationalised is rather odd for three reasons: first, the cap is, by default, only set once a parliament; second, the cap only formally relates to spending in a single year; and third, compliance is only formally assessed once a parliament.

Box 3.1. The welfare cap

The way the welfare cap works is as follows (for more details, see Keep (2023)). In the first fiscal event of a parliament, the Treasury sets a cap on welfare spending for a particular year – along with a margin by which it requires the cap to be met. Changes to welfare spending due to changes in inflation, or due to technical reclassifications, automatically lead to the cap being adjusted. This means that, for example, higher inflation in September 2023 than that forecast by the OBR would not make the cap harder to meet as any deviation would change the level of the cap as well as forecast welfare spending.

The welfare cap applies to about half of UK-wide benefit spending as it excludes spending on the state pension and some of the most cyclical parts of spending (i.e. jobseeker's allowance (JSA), housing benefit for those on JSA, and the equivalent components of universal credit).

The March 2020 Budget – the first of this parliament, and Rishi Sunak's first as Chancellor – set the cap for 2024–25. Alongside that, Mr Sunak set a 'pathway' for spending towards that cap. A margin was set at 0.5% of spending for the current year (then 2019–20), rising by 0.5% a year so that it reached 3.0% of spending in 2024–25.

While the OBR naturally monitors how its forecasts for spending compares with the cap (and the pathway to the cap), and the margin, it has been asked only to assess formal compliance with the cap in the first fiscal event of a parliament. After the pandemic hit, the OBR's forecasts produced in Autumn 2020, Spring 2021 and Autumn 2021 suggested that the cap was on course to be breached. But as these were not the first fiscal event of a parliament, this does not count as a formal breach; that would have required the Secretary of State for Work and Pensions either to set out measures to reduce welfare spending back within the cap or to explain why the breach was justified.

Then, in the Autumn Statement of 2021, Mr Sunak decided to reset the level of the welfare cap to the forecast level of spending (plus a margin that in 2024–25 was now set at 2% rather than 3% of spending), with this change being approved by the House of Commons in February 2022. As a result, the OBR forecasts from Spring 2022 and Autumn 2022 suggested that the cap was no longer on course to be breached.

The huge increases in incapacity and disability benefit claims since have pushed up forecast welfare spending (see Chapter 4) and these do count against the cap and have been sufficient for forecast spending to rise above the cap. The March 2023 Budget forecast that welfare spending in 2024–25 would be £4.1 billion, or 3.0%, above the welfare cap and margin. This is set out in Table 3.2.

Table 3.2. Latest OBR forecasts for welfare spending and the welfare cap in 2024–25

	£ billion	%
Welfare cap	135.4	
Margin	2.7	2.0% of cap
Welfare cap + margin	138.1	
OBR March 2023 forecast	142.2	
Difference between forecast and cap + margin	4.1	3.0% of forecast spending

Source: Table 5.2 of Office for Budget Responsibility (2023).

The cap currently sets a limit for spending in 2024–25. Further details of the operation of the cap can be found in Box 3.1. A key issue is that, at the time of the March Budget, spending in 2024–25 was forecast to exceed the level of the cap by £4.1 billion, or 3.0% of relevant spending. In other words, cuts of £4.1 billion would need to have been announced if the government had wanted to be on course to meet the rule when it is next formally assessed, which will be the first fiscal event of the next parliament. Of course, the OBR's forecasts will change – though it remains to be seen whether they move in the direction of making the welfare cap easier or harder to comply with.

Should the government still wish to comply with the welfare cap, it is getting late to make welfare cuts to bring that about. A more sensible approach to policy in this area would be to get rid of the welfare cap, and instead for the government to keep the welfare system under review in the light of changing circumstances and where appropriate implement reforms to improve its operation. The existing welfare cap does not help bring that about: the levers available to reduce welfare spending by £4.1 billion in 2024–25 are already limited and could be non-existent by the first fiscal event of the next parliament – not least because that could conceivably be in Spring 2025!

3.3 How has the economic environment changed since the Budget?

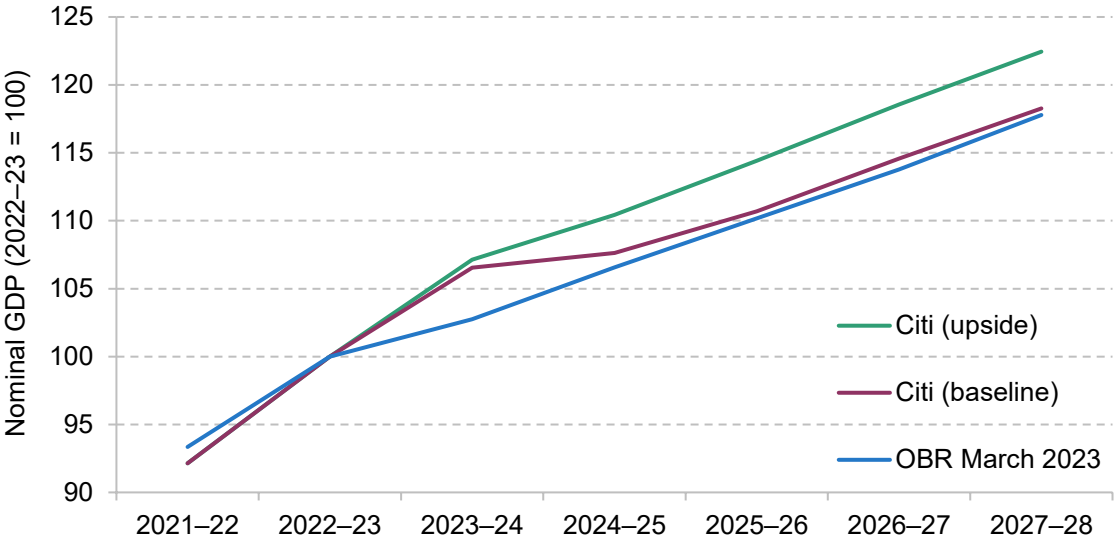
We now turn to how some of the key determinants of the public finances – the outlook for growth, interest rates and inflation – might have changed since the March Budget. One big change to the economic data relates to the data for 2020 and 2021. In September 2023, the Office for National Statistics published upwards revisions to the GDP data for these years. In particular, these now suggest that the real size of the economy at the end of 2021 was 0.6% above the pre-pandemic (2019Q4) level, rather than 1.2% below. But these revisions do not

substantively change estimates of the nominal size of the economy, and do not change estimates of public sector revenues or spending in those years at all. They will only change the outlook for the health of the public finances if they affect forecasts for growth, or the efficiency of the public sector (and therefore desired public service spending), going forwards.

The growth outlook

One of the key determinants of the fiscal outlook is the cash size of the economy. Since taxes are typically levied on cash quantities (such as incomes, profits and spending), higher growth in cash terms can be expected to translate into higher cash revenues for the government. This is true whether higher cash-terms growth reflects faster growth in output or is driven by higher inflation. This is particularly true when tax thresholds – such as income tax thresholds – are being frozen in cash terms (see Chapter 4).

Figure 3.5. Forecasts for growth in the cash size of the economy



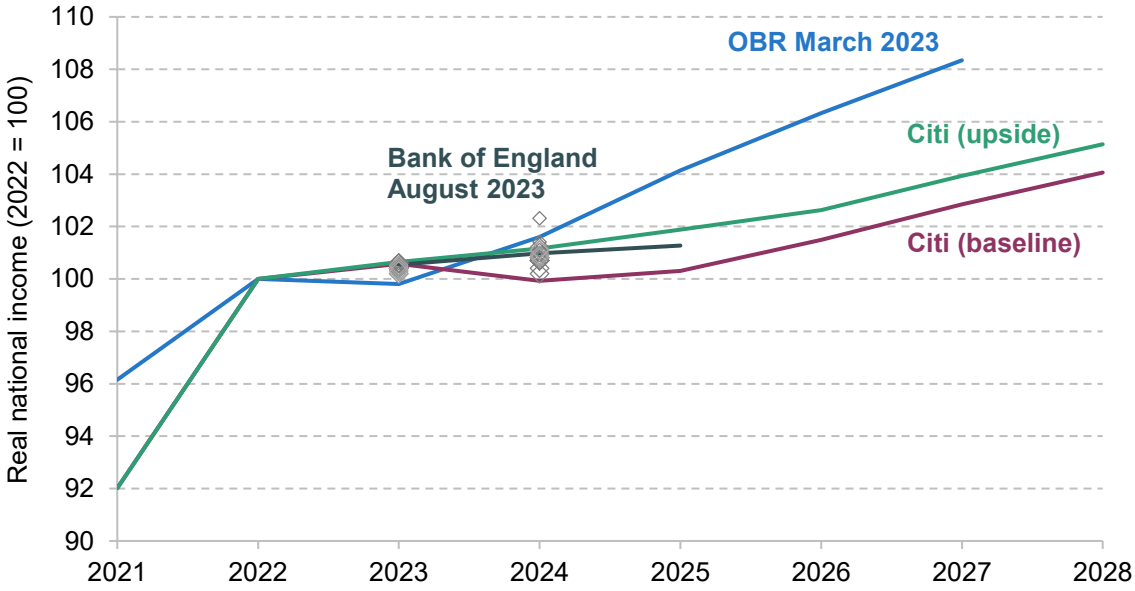
Source: OBR's Economic and Fiscal Outlook (March 2023) and authors' calculations.

Under Citi's main scenario, considerably faster nominal growth this year is followed by a shallow recession, leaving the nominal size of the economy almost unchanged from the OBR's March forecast over the medium term (shown in Figure 3.5), though the real size would be smaller. For this Green Budget, Citi have also produced an 'upside' scenario, where additional nominal growth is more persistent. It is important to note that this scenario is not universally a better world to be in: higher nominal growth only partly reflects additional output, and is largely driven by more persistent inflation. This scenario is also associated with interest rates staying higher for longer. We refer to it as an 'upside' scenario on the basis that it is associated with a larger cash economy and slightly lower borrowing (see Section 3.4). For a discussion of the real growth outlook under these scenarios and how they compare with other forecasters, we refer the interested reader to Box 3.2.

Box 3.2. Real growth under different scenarios

Whilst the cash size of the economy matters most for revenues, real growth is a more important determinant of how the output of the country is changing, and therefore the private and public consumption that we can enjoy. Under Citi's main scenario, the economy contracts in real terms next year (Figure 3.6). More importantly, however, the recovery in real growth after this is very poor in this scenario: real growth is just 1.0% on average between 2025 and 2028. In contrast, average growth in the four last years of the OBR's March forecast is 2.1% – well above the 1.8% average in the 20 years before the pandemic. Over the next few years, the OBR is also more optimistic than most other independent forecasters surveyed by the Treasury (as indicated by the diamonds), as well as, notably, the Bank of England.

Figure 3.6. Real growth forecasts



Note: Grey diamonds represent independent forecasters polled by HM Treasury (omitting Citi).

Source: HM Treasury's 'Forecasts for the UK economy: August 2023', Bank of England's Monetary Policy Report (August 2023), OBR's Economic and Fiscal Outlook (March 2023) and authors' calculations.

Citi's alternative, 'upside' scenario assumes substantially higher nominal growth. However, this is not driven by a much better real growth performance – while a real-terms contraction is avoided in the near term, in the medium term growth remains worse than that forecast by the OBR in the March 2023 Budget. Instead, the 'upside' news for the public finances comes mainly in the form of more persistent inflation, which helps boost revenues (see the section 'Which kind of inflation?' below) while reducing the real-terms generosity of any public service spending plans that remain fixed in cash terms.

Interest rates

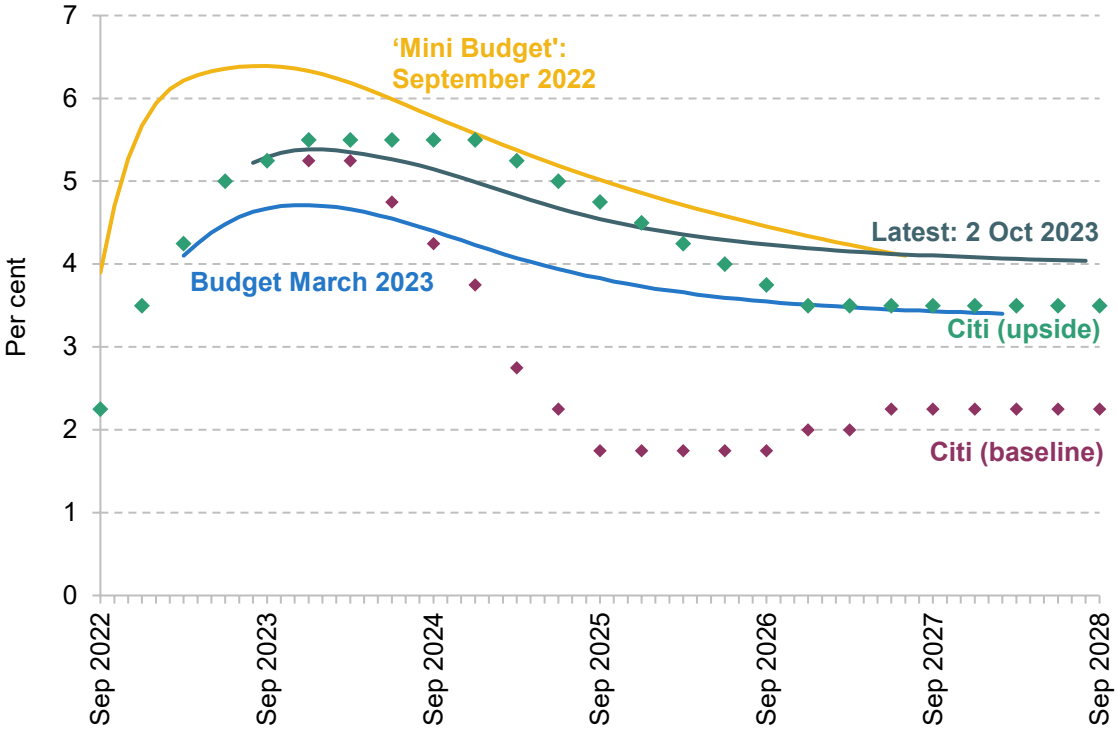
The 2010s saw a long period of falling debt interest spending. This was even more remarkable since it came alongside a doubling of debt as a share of national income (see Figures 3.2 and 3.4). In the first year of the COVID pandemic, this pattern looked set to continue, with another large increase in debt accompanied by historically low and falling debt interest spending. Yet in the following two years, debt interest spending has increased substantially, reaching a share of national income last seen in the immediate post-war period, when public sector debt stood at upwards of 200% of national income.

Whereas at the time of the March 2022 Budget, the OBR expected this spike to be wholly temporary, it revised this expectation this past March, forecasting higher debt interest spending even after this year's spike has passed.

The OBR bases its debt interest forecast on market expectations for interest rates. One important such expectation is the one for Bank Rate, a measure of a risk-free rate in the economy, since commercial banks can receive this interest rate on deposits with the central bank. Figure 3.7 shows market expectations for Bank Rate at three points in time. Just after the 'mini Budget' in September 2022, markets expected Bank Rate to climb all the way to 6.4%, and to remain above 4% five years out. Subsequently, expectations fell from this high, but remained high and volatile. At the time of the March 2023 Budget, the OBR incorporated market expectations for Bank Rate into its forecasts which implied Bank Rate peaking at around 4.7% and then falling gradually to around 3.5%. Since then, market expectations have risen again and, at the start of October, markets expected Bank Rate to peak at around 5.4%.

Under Citi's baseline forecast, Bank Rate would peak at its current level of 5.25% and then come down much more quickly than the market expects, falling to around 2% from the middle of 2025 onwards. In other words, interest rates would be higher in the short term, but much lower in the medium term, than under the OBR's March forecast. This would mean a reduction in debt interest spending of £17 billion in 2025–26 and 2026–27, relative to the OBR's March forecast. Even under the Citi 'upside' scenario, where inflation is more persistent, Bank Rate would follow recent market expectations over the next three years, and then fall lower than recent market expectations from 2026 onwards (settling at 3.5% – i.e. very close to the market expectations that were used in the March 2023 Budget). The differences between those paths for interest rates are large, and would have a big impact on debt interest spending. The impact of this on overall borrowing levels will depend on other factors – including on whether a higher path for Bank Rate is associated with higher inflation. We discuss these impacts in Section 3.4.

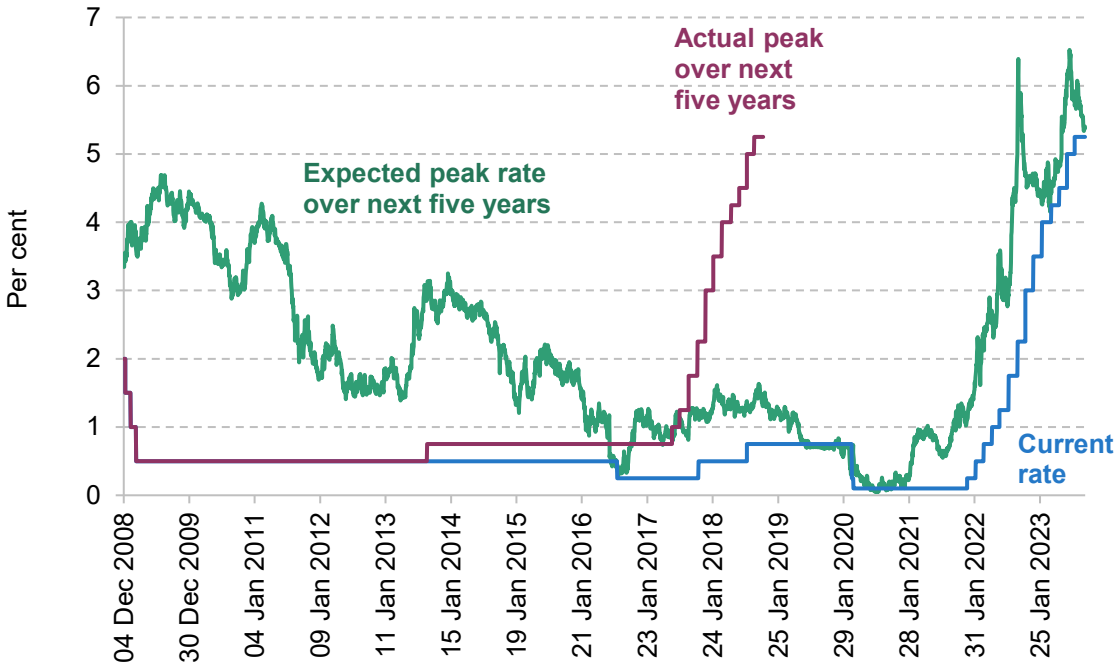
Figure 3.7. Forecasts and market expectations for Bank Rate



Source: https://www.bankofengland.co.uk/statistics/yield-curves.

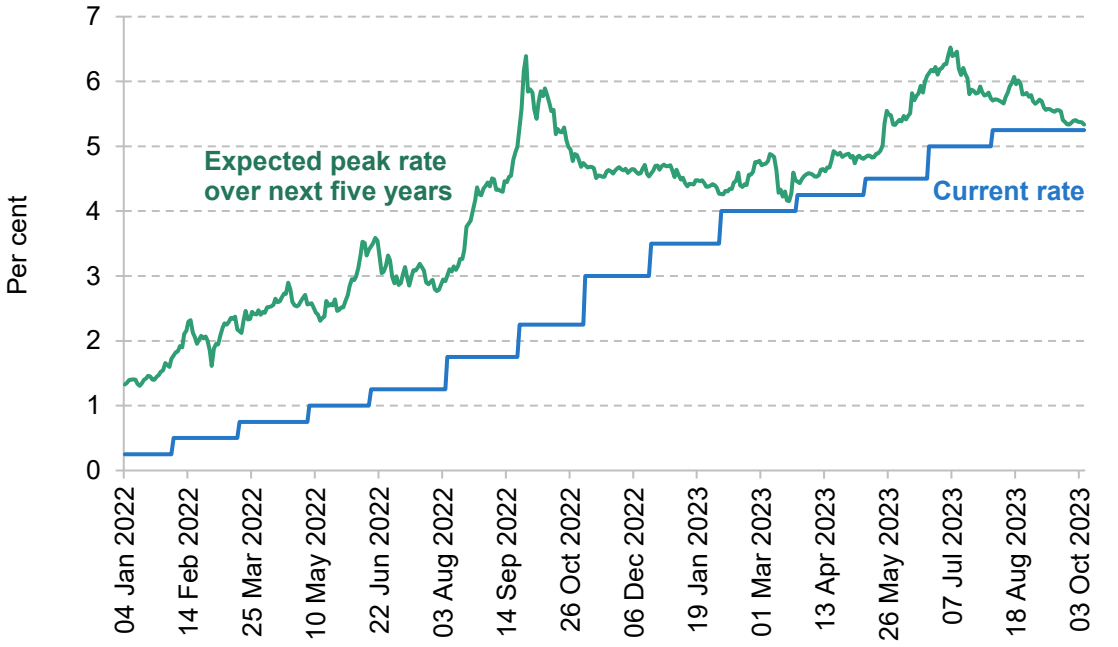
Figure 3.8 puts these movements in Bank Rate expectations into a longer-term context, highlighting two things. First, expectations for Bank Rate are much higher than we had become used to during the 2010s and early 2020s, and this rise happened with little anticipation – expectations started to climb only shortly before actual Bank Rate did. Second, they have also become much more volatile, with large movements in a short space of time. Before 2022, the expected peak almost never moved more than a percentage point within a month – this was true on just seven occasions, or one in every 470 days, and all before 2014. Since 2022, this has been true a quarter of the time. This can be seen more clearly in Figure 3.9, which zooms in on the period since January 2022. As we go on to set out in the next section (Table 3.3), conditioning on recent market expectations for Bank Rate, as the OBR is set to do in its forecast at the Autumn Statement, would push up forecast debt interest spending substantially. Equally, volatile expectations mean that this methodology is now, more than in previous years, extremely sensitive to the timing of when the forecast is closed, as the conditioning expectations average over just two weeks.

Figure 3.8. Bank Rate and expectations in a longer-term context



Source: www.bankofengland.co.uk/boeapps/database/.

Figure 3.9. Bank Rate and expectations since January 2022



Source: www.bankofengland.co.uk/boeapps/database/.

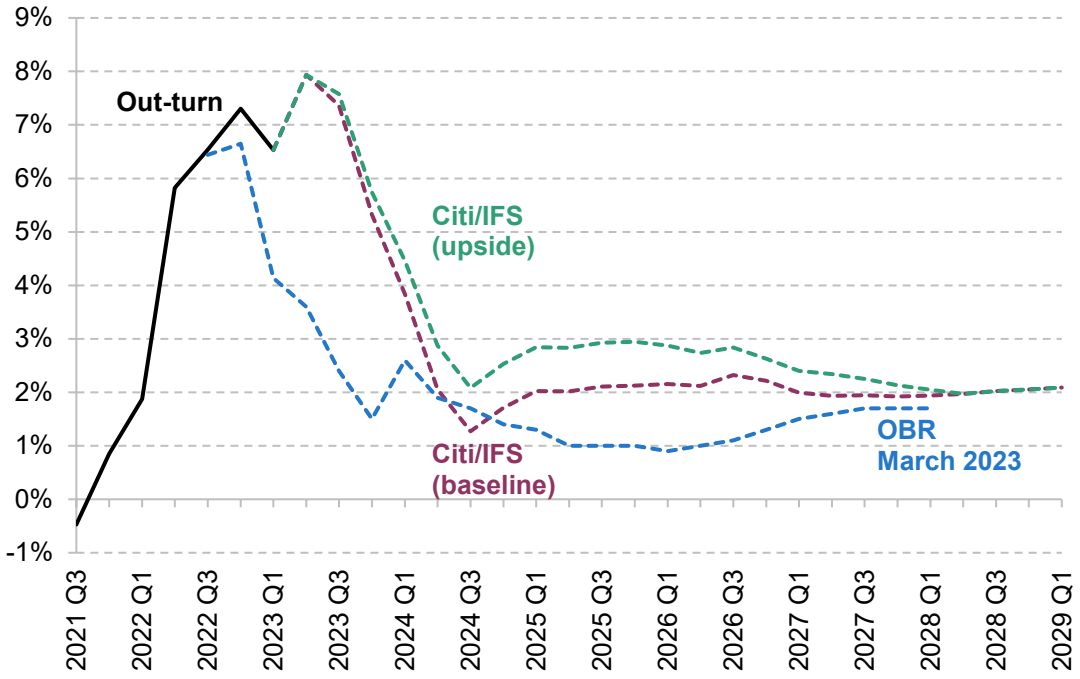
Which kind of inflation?

Inflation affects the public finances in a number of ways, with different types of inflation having different impacts. A bigger economy – even if it is only bigger in cash terms, rather than actually producing more goods and services – can help the public finances in the short term, first and foremost by increasing tax revenues. This is especially true in an environment where personal tax thresholds are frozen in cash terms (see Chapter 4).

The most recent out-turn data have shown the cash size of the economy growing faster than under the OBR's March forecast, with a corresponding boost to tax revenues. Tax revenues in the first five months of the current financial year are running £13 billion, or 3.3%, ahead of forecast. As a result, borrowing is running £11 billion, or 14%, below forecast. A simple extrapolation suggests that, if the strength in revenues persisted for the remaining seven months of the financial year, revenues would be £32 billion higher than forecast.

Under Citi's main forecast, this improvement in revenues dissipates over time, with the cash size of the economy from 2025 onwards almost exactly the same as it would be under the OBR's March forecast. Lower real-terms growth (Figure 3.6) is offset by higher economy-wide inflation (Figure 3.10), especially in 2025 and 2026, when the OBR's March forecast predicts extremely low inflation.

Figure 3.10. Economy-wide inflation: out-turn and forecasts



Note: GDP deflator growth shown.

Source: Office for National Statistics (series YBGB) and OBR's Economic and Fiscal Outlook (March 2023).

The ‘upside’ scenario instead assumes that the economy is permanently bigger in cash terms. Correspondingly, revenues would be permanently higher than under the OBR’s March forecast in the ‘upside’ scenario – by some £45 billion – but there is little difference in the baseline scenario.

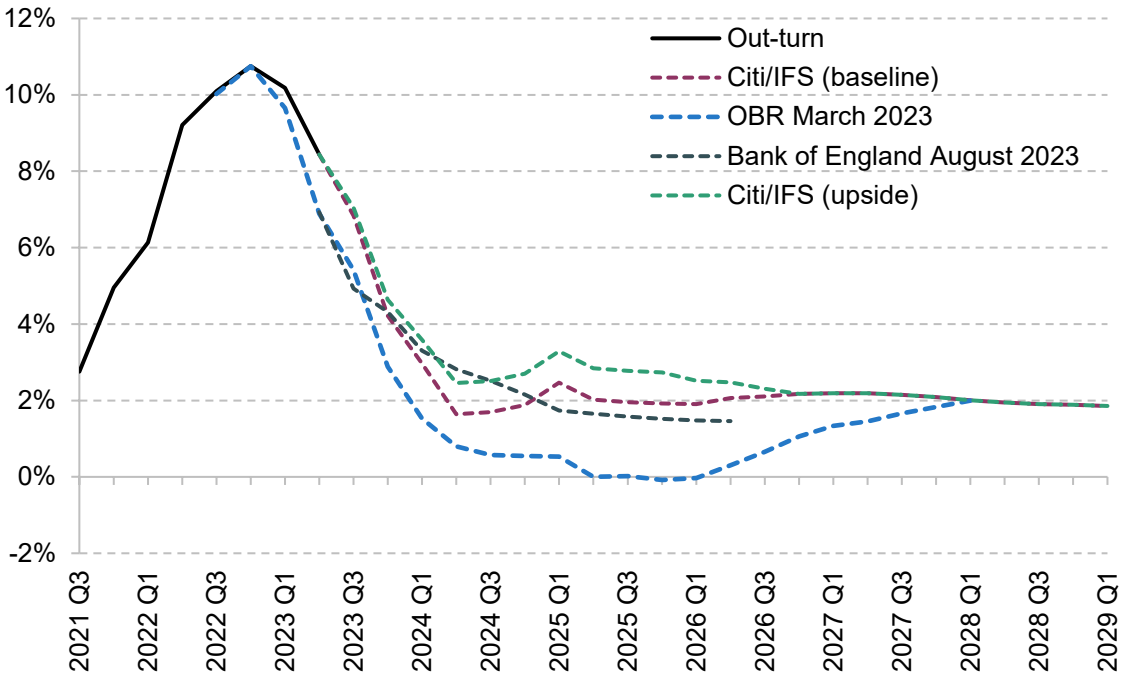
On the spending side, near-term spending plans within the current spending review period, which runs to 2024–25, are fixed in cash terms. So higher inflation in 2024–25, as forecast in both Citi forecasts (relative to the OBR’s March 2023 forecast), would lead to these settlements being less generous in real terms. This is the key mechanism by which higher inflation can reduce borrowing; it leads to real-terms spending plans being less generous than planned. For the period beyond March 2025, provisional spending totals have not yet been allocated to specific departments. We assume that cash spending totals are topped up to preserve the 1% real-terms overall increase allowed for in the March 2023 Budget. This still makes for an extremely challenging set of spending plans to deliver (see Chapter 4). However, the Chancellor *could* opt to squeeze public services even more (or at least, to claim that intention for the period post-2025) by maintaining the same cash totals, and leaving departments to absorb higher inflation from existing budgets. This would ‘save’ £8 billion in 2027–28 in the baseline scenario, rising to almost twice as much (£15 billion) in the ‘upside’ scenario.

In contrast to departmental spending plans, most welfare spending is, by default, uprated with inflation – albeit with a lag. But it is uprated with consumer prices, not economy-wide inflation. This is sensible if the policy aim is to preserve benefit claimants’ purchasing power. One key difference between consumer price inflation and economy-wide inflation is imports: changes in the prices of imported goods feed into consumer price inflation, but not economy-wide inflation (and hence the cash size of the UK economy). This has made things particularly difficult for the public finances during the current cost-of-living crisis – high import prices (particularly of energy and food) have pushed up consumer prices and put pressure on welfare spending, without a corresponding increase in revenues (as higher inflation is associated with lower real incomes, and a greater share of household spending will go on domestic energy and food which are both subject to a lower rate of VAT). Under Citi’s baseline forecast, higher CPI inflation (Figure 3.11) would add £10 billion to welfare spending in 2027–28 relative to that forecast in the OBR’s March 2023 Budget. As shown in Figure 3.11, rather than inflation being particularly high in the Citi scenario, this difference is more due to the OBR’s March forecast for CPI inflation to be very low in 2024, 2025 and 2026 – including running at around 0% for four quarters from 2025Q2.

Another channel through which inflation affects the public finances is through debt interest spending. Debt interest spending on index-linked (‘inflation-protected’) government bonds is linked to the Retail Prices Index (RPI). In the first five months of the financial year, £26 billion of debt interest spending – 18% of the total – was on the ‘inflation protection’ portion, rather

than on debt interest more narrowly speaking, and hence reflected the rise in the RPI.[4] Under Citi's baseline forecast, the RPI would grow by 19% more than under the OBR's March forecast over the period until 2027–28, and add £8 billion to debt interest spending in each of the next two years. Under Citi's 'upside' scenario, where inflation is more persistent, this would rise to £13 billion next year and £14 billion in 2025–26. The sensitivity of forecast debt interest spending to assumed interest rate is shown in more detail in the next section (Table 3.3).

Figure 3.11. Consumer price inflation: out-turn and forecasts



Source: Office for National Statistics (series D7BT) and OBR's Economic and Fiscal Outlook (March 2023).

3.4 Outlook for borrowing and debt under current economic expectations

In this section, we show what the changes in the economic environment described above, combined with standard assumptions about their proportional effect on revenues and spending, would mean for the outlook for borrowing and, consequently, debt.

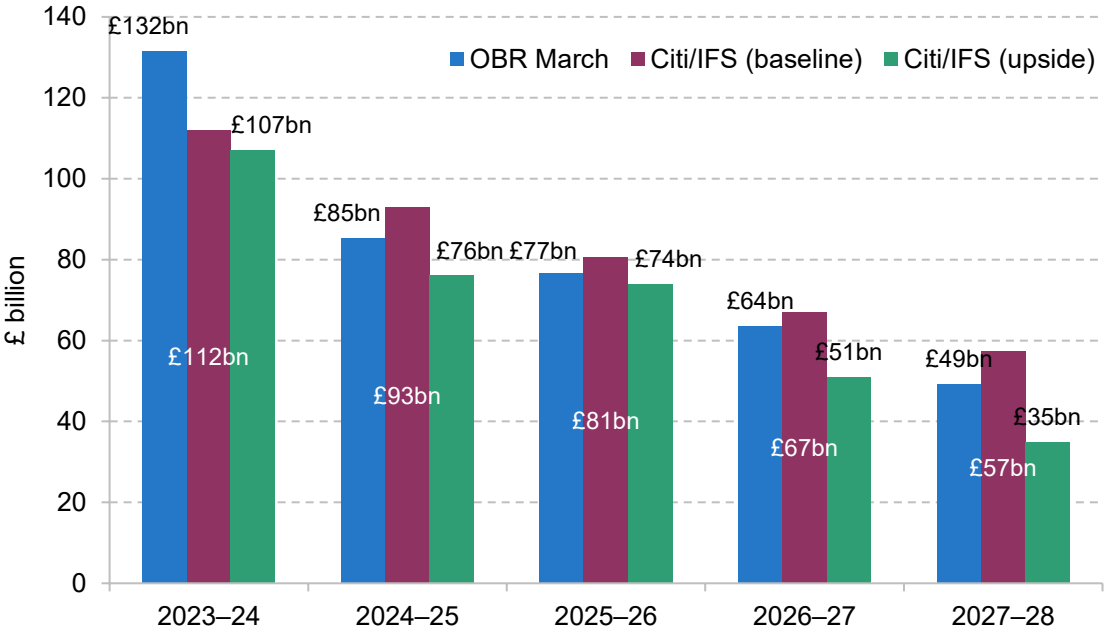
[4] The 18% figure relates to central government spending on debt interest. Like other public finance quantities (such as borrowing), debt interest spending is an accruals measure, i.e. the impact is accounted for near-contemporaneously with the increase in the RPI. In cash terms, the impact is delayed, since the government does not actually hand over inflation compensation to lenders until much (in many cases, years or even decades) later.

Borrowing

As described previously, revenues have outperformed the forecast in the first five months of the financial year, reflecting a stronger GDP out-turn in cash terms. Under Citi's baseline forecast, this largely persists for the remainder of the year, and borrowing is £20 billion lower than the March OBR forecast for 2023–24 as a whole.

In contrast, borrowing in the next four years is slightly higher under Citi's baseline forecast than under the OBR's March forecast (by between £4 and £8 billion), as shown in Figure 3.12, but slightly lower under Citi's 'upside' scenario.

Figure 3.12. Borrowing forecasts in £ billion



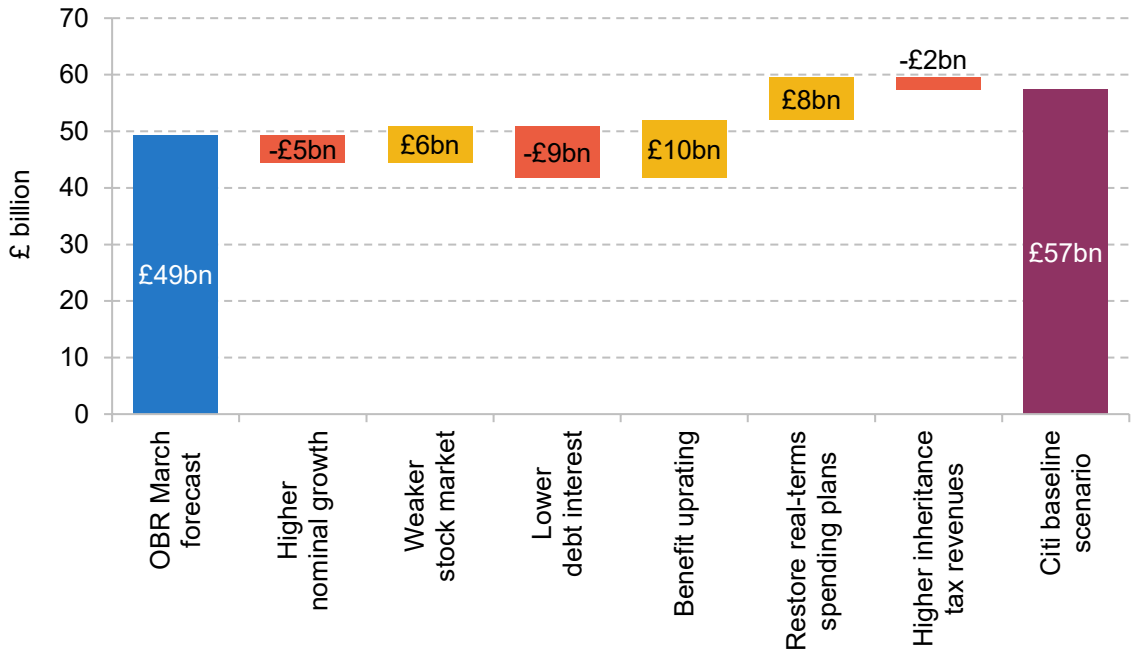
Source: OBR's Economic and Fiscal Outlook (March 2023) and authors' calculations.

This reflects a range of partially offsetting factors. Figure 3.13 decomposes the overall change for the last year of the forecast (2027–28) under the baseline scenario into the following components:

- a £5 billion boost to revenues from higher nominal GDP growth, which is much smaller than this year;
- a weaker performance of the stock market over the last few months, which is assumed to persist throughout the forecast horizon, depressing tax revenues by £6 billion;
- lower debt interest than under the OBR's March forecast from 2025–26 onwards, by £9 billion in 2027–28 (we describe the sensitivity of this forecast to different interest rate assumptions below);
- £10 billion higher welfare spending to reflect uprating by higher consumer prices;

- an additional £8 billion of cash spending on public services to maintain the 1.1% real-terms increase;
- an adjustment for IFS's most recent inheritance tax forecast (see Chapter 7), which increases revenues by £2 billion.

Figure 3.13. Changes to borrowing in 2027–28 between the OBR's March forecast and Citi/IFS's baseline scenario



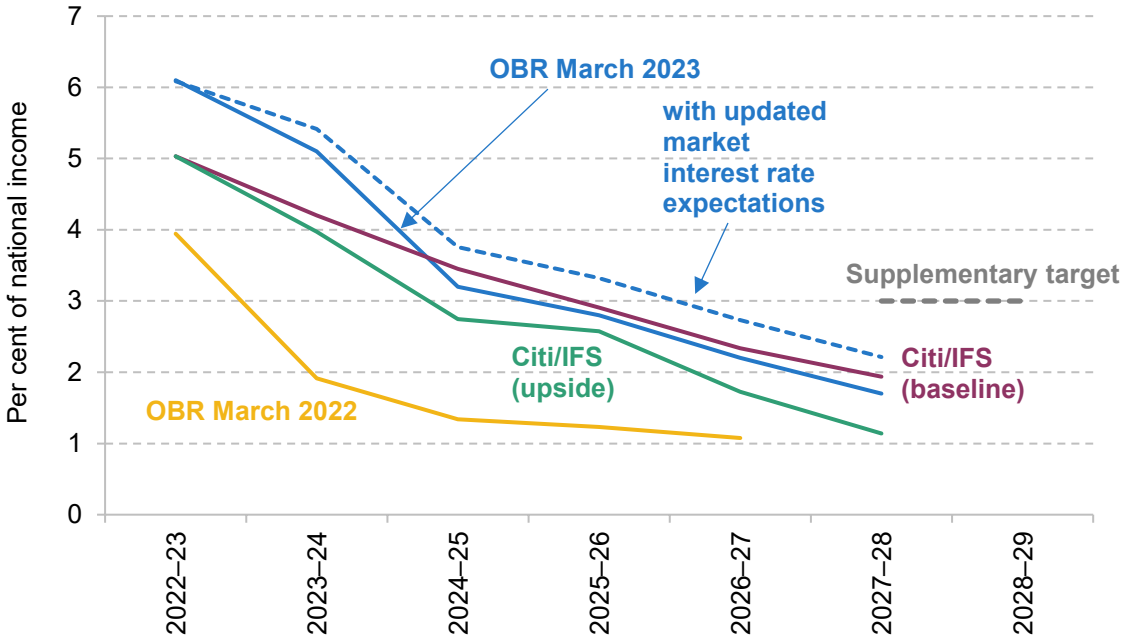
Source: OBR's Economic and Fiscal Outlook (March 2023) and authors' calculations.

Overall, this leaves borrowing in the final year of the forecast £8 billion higher than under the OBR's March forecast. Under the 'upside' scenario, a bigger boost to revenues from higher nominal GDP outweighs the impact of higher interest rates and added expenditure on index-linked debt, social security benefits and public services triggered by higher inflation. This would leave forecast borrowing in 2027–28 at £35 billion, which would be £14 billion lower than forecast by the OBR in March and £22 billion lower than under the Citi baseline scenario.

As described in Section 3.3, the medium-term cash size of the economy is close to the OBR's March forecast in Citi's baseline scenario, but higher in their 'upside' scenario. This is reflected in the path of borrowing as a share of national income shown in Figure 3.14, where the gap between the OBR's March forecast and Citi's baseline scenario on the one hand, and Citi's upside scenario on the other, is amplified. Nevertheless, borrowing under Citi's upside scenario is still persistently higher than the OBR had forecast in March 2022, before the onset of the cost-of-living crisis. The dashed line in Figure 3.14 shows the (large) impact of simply adjusting the OBR's March forecast for the increase in market expectations for interest rates. Without any counteracting effects on revenues for higher inflation (or indeed any other economic

developments), this adjustment alone would increase borrowing by between 0.3% and 0.6% of national income; though despite this, borrowing would still be forecast to fall as a share of national income over time.

Figure 3.14. Borrowing forecasts as a share of national income



Source: OBR's Economic and Fiscal Outlook (March 2023) and authors' calculations.

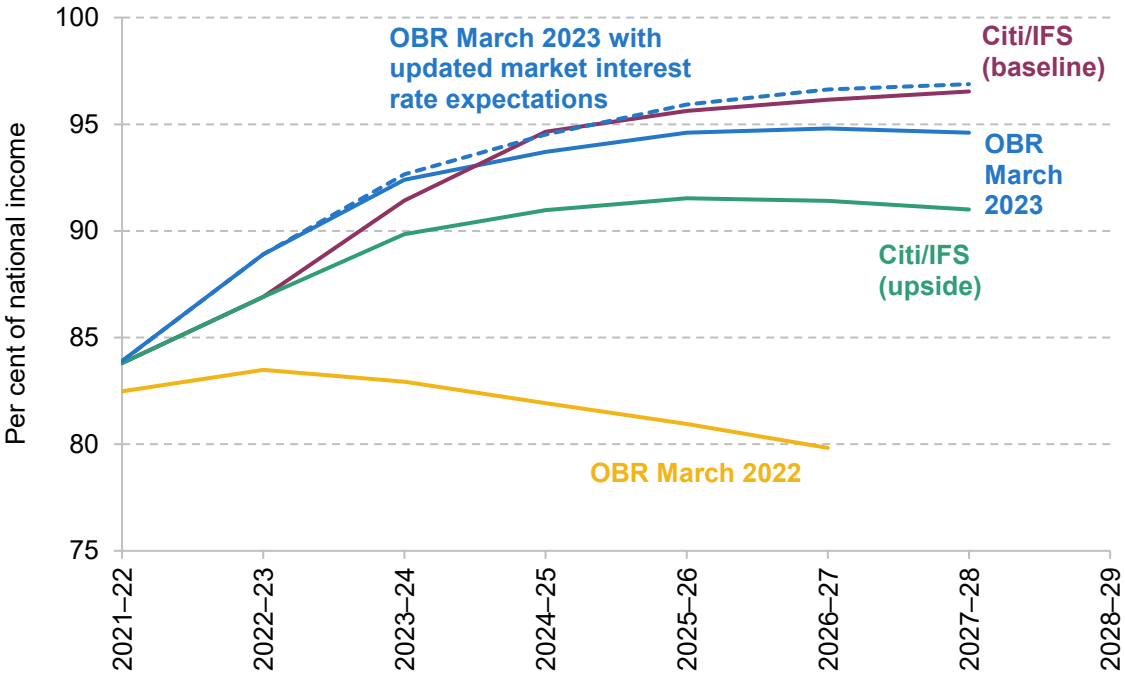
In the final year of the (current) forecast, 2027–28, borrowing falls to 1.9% of national income in Citi's baseline scenario, and 1.1% in the upside scenario. In both these cases, the supplementary target – specifying a 3% cap on forecast borrowing five years out – would comfortably be met if the same level of borrowing were maintained for another year. Assuming investment plans are unchanged in cash terms, this level of overall borrowing would leave the current budget essentially in balance in 2026–27 and 2027–28, with a small deficit of 0.1% of national income in the former year and a small surplus of 0.2% in the latter.

Debt

Figure 3.15 adjusts the OBR's March forecast for underlying debt for these changes to borrowing under Citi's two scenarios. Changes to borrowing are not the only determinant of changes to underlying debt. In particular, if losses forecast to be realised during the Bank of England's unwinding of its quantitative easing (QE) programme are revised up due to higher interest rates, this would add to underlying debt. This would make the letter of the Chancellor's

fiscal rule harder to meet.[5] Under Citi's baseline scenario, the path of underlying debt as a share of national income – while lower in the current year – is higher than under the OBR's March forecast in later years. It is also continuing to rise, albeit very slightly, in 2027–28. Purely adjusting the OBR's March forecast for the increase in market interest rate expectations could add a similar amount to debt as a share of national income in 2027–28 to what the more complex interplay of partially offsetting factors in Citi's baseline scenario does. As discussed above in Section 3.2 as a flaw of the fiscal mandate, this may have little impact on 'headroom' against this rule, even though the adjustment represents a clear-cut deterioration in the fiscal outlook and does not include any countervailing fiscal benefits of Citi's 'upside' scenario.

Figure 3.15. Underlying debt under Citi's scenarios



Source: OBR's Economic and Fiscal Outlook (March 2023) and authors' calculations.

At the Autumn Statement, the OBR will add an additional year to the forecast, and the Chancellor's fiscal target will 'roll over' another year. So the fiscal mandate will require debt to be forecast to fall as a share of national income in 2028–29 (rather than 2027–28 as is currently the case). Adding another year outside the current spending review period means that the Chancellor seems likely to pencil in yet another year of tight spending plans for public service spending (without specifying where exactly the axe would fall). This could be sufficient to ensure that debt is again forecast to fall in the fifth year of the forecast horizon – indeed, the fact

[5] If QE were used again in future, serious consideration should be given to the option of designing the programme (e.g. interest paid on central bank reserves) in a way that limits losses to the government (see chapter 7 of last year's Green Budget).

that this is so 'easy' to do highlights one of the issues with the target described in Section 3.2. In Citi's 'upside' scenario, debt is much lower throughout. However, when it comes to 'headroom' against the fiscal target, this will not matter – what matters is how steeply debt falls at the end of the forecast horizon. Under this scenario, debt is falling (albeit very gradually) from 2025–26 so the target to have it falling in 2028–29 would most likely be met. But in all these scenarios, debt is much higher than, and not falling as quickly as, was forecast in the March 2022 Budget.

A key economic risk: debt interest spending

The OBR's official forecasts are conditioned on market expectations for interest rates. At the time the March forecast was closed, those implied a lower peak of Bank Rate this year than subsequently occurred (and is hence built into both of Citi's scenarios). This pushes up debt interest spending this year. In later forecast years, Citi's main scenario – which has Bank Rate close to 2% from 2025–26 onwards (see Figure 3.7) – has much lower interest rates than the market expectations used for the OBR's March 2023 forecast, let alone the latest market expectations which would presumably be used by the OBR were it to produce a forecast now.

Table 3.3. Debt interest spending in 2026–27 under different scenarios

	Debt interest spending, £ billion	Debt interest spending, % of GDP
OBR March 2023	£89bn	3.1%
Illustrative: with market rate expectations	£108bn	3.8%
Citi/IFS baseline scenario	£76bn	2.7%
Citi/IFS 'upside' scenario	£103bn	3.5%
OBR March 2022	£47bn	1.6%

Note: Central government debt interest net of income and losses from the Asset Purchase Facility shown. Market expectations as of 2 October 2023.

Table 3.3 compares debt interest spending in 2026–27 under different assumptions. This provides an indication of what the OBR's new forecast for debt interest spending is likely to be if market expectations do not change between now and the time it closes its forecast. It also illustrates how sensitive spending forecasts are to changes in assumptions – an important thing to keep in mind in an environment where expectations are volatile, as set out in Section 3.3. If we plug in current market expectations, as the OBR will do (unless its methodology changes) at the Autumn Statement, we estimate that debt interest would be forecast to be £20 billion higher in 2026–27 than was forecast in the March 2023 Budget. In contrast, under Citi's baseline scenario, in 2026–27 debt interest is £12 billion lower than under the March forecast (and £32 billion lower than what it would be under current market expectations), reflecting the impact of lower forecast interest rates. In Citi's upside scenario – which includes stronger growth but

also more persistent inflation – Bank Rate stays (somewhat) higher for longer, pushing debt interest spending closer to that implied by taking current market expectations.

We note, however, that while debt interest spending in the baseline scenario looks low compared with that under other assumptions, including what the OBR forecast back in March 2023, it would still be almost £30 billion higher than under the OBR's March 2022 forecast, the timing of which meant it incorporated only a very limited effect of Russia's invasion of Ukraine and its subsequent economic consequences.

In 2024–25 and 2025–26, inflation is higher under Citi's baseline scenario than under the OBR's March forecast, which includes a long bout of substantially below-target inflation in those years (see Figure 3.11). This increases spending on index-linked debt in Citi's scenario, especially in the middle of the forecast period, with a modest effect still present in 2026–27.

Finally, our calculations adjust debt interest spending for changes in interest rates that reflect the path of Bank Rate and allow for a proportional change in gilt rates. If there are additional changes in the market for government debt – for example, because of declining demand for long-term government bonds from UK pension funds and the Bank of England moving from being a buyer to a seller – debt interest spending could be pushed up further.

3.5 Budget judgement

In the March 2023 Budget, the Chancellor presented an OBR forecast that had him meeting his fiscal mandate for debt to be forecast to fall as a share of national income in 2027–28 by a hair's breadth. This was despite this fiscal target being much looser than those that the UK has typically had since 1997. The requirement for borrowing to be forecast to be below 3% of national income in 2027–28 was met by a much more substantial margin. But this is a target that we would not expect to bind: it is a soft target. On only one occasion (March 1993) over the last 40 years has the official forecast – outside of the global financial crisis and the height of the COVID-19 pandemic – suggested borrowing of more than 3% of national income five years out. Nevertheless, actual borrowing ended up exceeding 3% on 23 occasions over this period. Under the latest official forecast, borrowing in 2027–28 would be 1.7% of GDP which, if it materialised, would be the lowest level since 2001–02. The fact that despite this, debt was still only forecast to fall by the slightest of margins highlights the difficulty of preventing debt from rising as a share of national income when growth is weak.

While no formal assessment of the welfare cap was made – as that only occurs in the first fiscal event of a parliament – rising spending on disability benefits and on supporting those with health conditions means that spending was forecast to exceed the cap by £4.1 billion in 2024–25.

The forecasts set out in this chapter have some near-term good news for the Chancellor. Stronger nominal growth in the economy so far this year is boosting revenues, with the result that borrowing in 2023–24 is likely to come in lower than the £132 billion forecast in March. Under our central scenario, it would be £20 billion lower at £112 billion. But it should be remembered that this would still be more than £60 billion more than the £50 billion that was forecast for 2023–24 in Mr Sunak's final Budget as Chancellor in March 2022. At 4.2% of national income, borrowing would also still be well above that seen just prior to the pandemic (2.8% of national income in 2019–20).

A difficult medium-term outlook

The medium-term outlook has, in many ways, changed quite substantially since March. But these changes have offsetting impacts on the public finances. The March 2023 Budget forecast included very low inflation in coming years (with CPI inflation clearly below 2% from 2024Q1 to 2027Q4 inclusive, including four quarters with zero growth in prices); whereas more normal rates of inflation now seem more likely. Under the Citi central scenario, this avoids lower real growth translating into a hit to revenues, although it also adds to social security spending (by £10 billion in 2027–28 under our central scenario), adds to spending on index-linked debt interest, and requires a top-up to the cash spending plans pencilled in for 2025–26, 2026–27 and 2027–28 (by £8 billion in 2027–28 under our central forecast), unless they are made even tighter in real terms.

Market expectations for how interest rates are likely to change from their current level have been extremely volatile since the summer of 2022. Interest rates are now expected to be higher, and for longer, than was expected at the time of the March Budget – but are thought to now be at or near their peak. At the time of writing, market expectations imply £20 billion more spending on debt interest in 2026–27 than what the OBR forecast in March (£108 billion compared with £89 billion). However, Citi expect Bank Rate to fall more quickly than the path implied by market expectations, which would suggest debt interest spending could be £12 billion lower than the March 2023 Budget forecast (£76 billion versus £89 billion). This would, however, still be almost £30 billion higher than in the forecast presented one year before, in the March 2022 Budget. And, at least to date, the OBR's methodology for forecasting debt interest spending has been to condition on market expectations for interest rates in the run-up to fiscal events, which suggests that that part of the fiscal numbers will be unpleasant reading for the Chancellor. Given the current volatility of market expectations, we should expect this forecast to continue to be subject to substantial revision, and with debt elevated the future path of interest rates will be one key risk to the forecast going forward. This is one reason why precisely targeting the change in debt five years out, as the fiscal mandate does, is not a sensible choice.

Further out, under our central scenario, the fiscal forecasts are similar to those in the March Budget, especially given the huge uncertainty around them. Borrowing is forecast to be slightly

higher over the period from 2024–25 to 2027–28 (with £8 billion of additional borrowing in the final year, at £57 billion compared with £49 billion). At 2% of national income, and falling over time, the Chancellor could still expect to meet his target of having forecast borrowing below 3% five years out by some margin. Our central scenario also has public sector net debt higher than forecast in the March Budget, and still rising as a share of national income in 2027–28. It would remain touch-and-go whether it would be on course to fall in 2028–29, with much hinging on the spending plans that the Chancellor chooses to pencil in for that year, and whether he chooses to claim that the freeze on personal tax thresholds will be extended by yet another year. Another year of tight spending growth could easily ensure that debt is forecast to fall in that year, although this would not mean that pressures on debt have been contained in any material sense. The fact that borrowing is set to fall over the next few years from the very high levels incurred during the cost-of-living shock does not provide a good justification for tax cuts, or another fiscal loosening. Indeed, the recognition that crises periodically occur, and that the state will step in with support and allow borrowing and debt to rise sharply, is one of the reasons why it is prudent to aim to reduce debt outside of these periods of crisis.

As described in Chapter 4, there are also a number of policy pressures on the forecasts. Continuing to freeze fuel duties at their current cash levels, as the government surely intends, would reduce revenues by around £6 billion a year at the end of the forecast horizon. Making the corporation tax full-expensing policy permanent, as the Chancellor has said he wants to do, would add up to £10 billion a year to measured borrowing in the near term (though the true long-run cost of this policy would be much lower – see Chapter 10). It also remains to be seen whether the freeze to direct personal tax thresholds can continue through to 2027–28. The spending plans beyond March 2025 are also less generous than Mr Sunak bequeathed in his final Budget as Chancellor, and now imply real-terms cuts to the day-to-day budgets of many departments (totalling £9 billion in 2027–28 in the scenario we set out in Chapter 4) and falling real-terms spending on investment in public services.

So, what should the Chancellor do? While striving to have debt falling over the medium term is sensible, a narrow focus on achieving that in year 5 of the forecast should be avoided. He will continue to meet by some margin his supplementary target to have forecast borrowing below 3% of national income in five years' time. The welfare cap is likely to remain on course to be missed – with a big factor being the increase in spending on incapacity and disability benefits. Rather than attempting to cut around £4 billion from spending in the coming financial year, this fiscal target should be abandoned – after all, abandoning fiscal targets is something many Chancellors have found very easy to do over the period since 2016. Reforms to welfare spending should be judged on their individual merit, not solely on whether total spending happens to be just above or just below what was forecast a couple of years earlier.

The case for net tax cuts is weak

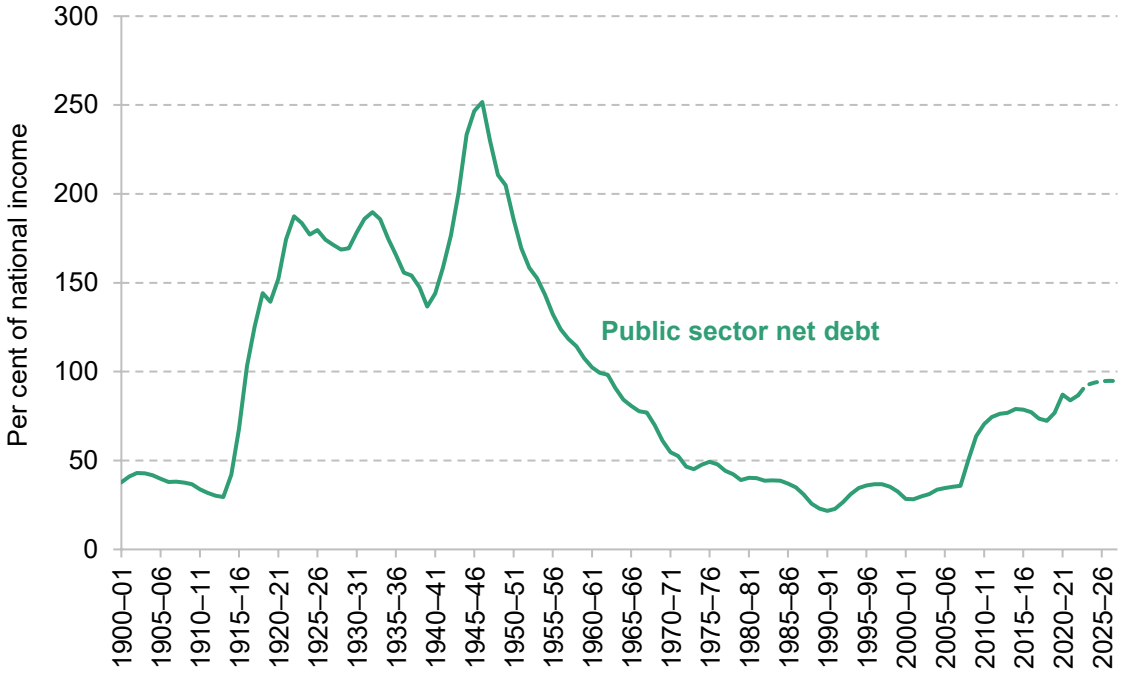
There is clear pressure for the Chancellor to cut taxes, and doubtless those calls will grow louder if, as we forecast, borrowing this year turns out lower than forecast. Those calls should be resisted. This is not the time for a net tax cut, for three reasons:

- First, while borrowing may be lower than forecast in March 2023, it is very unlikely to be lower than forecast in March 2022. Spending the windfall from improvements in the fiscal outlook, while absorbing the impact of deteriorations, leads to a 'ratcheting' effect over time, as we describe in detail in Chapter 5. This behaviour should be stopped.
- Second, the current environment of high inflation and rising interest rates is one where a fiscal loosening is difficult to justify in the face of high and volatile costs of servicing debt, and where there is no case for a temporary fiscal stimulus. As stated in Chapter 2, a substantial pre-election tax cut could risk shifting the UK into a higher-inflation paradigm, the cost of which could be a protracted monetary-policy-induced recession.
- Third, the case for permanent tax cuts rests on the medium-term outlook for the public finances and the desired level of public spending. A government that wants to fund pressures on health and social care in order to deliver a similar breadth and quality of services, as well as extend the welfare state to new services such as early years childcare, is likely to find its scope for tax cuts severely restricted – and particularly so in an era of elevated debt and higher interest rates – unless growth turns out much better than expected.

The forecasts in this chapter particularly focus on the third of these arguments (Chapters 5 and 2 of this Green Budget address the first and second, respectively). The central outlook is one where debt is only roughly stable over the medium term, and even that requires one to assume policy settings that in the case of fuel duties, and possibly also personal tax thresholds and planned spending on public services in late 2020s, are far from certain to be implemented. Given these, there is actually a reasonable argument for a *net tax rise* to be set out for implementation over the medium term. Failing that, the Chancellor should avoid 'paying for' (certain) near-term tax cuts by pencilling in an (uncertain and difficult-to-implement) extension of the freeze to the personal tax allowance (in 2028–29) or by either tightening, or extending, the squeeze on public service spending beyond March 2025. That would be poor policy indeed.

Appendix 3A

Figure 3A.1. Historical data of public sector net debt: out-turn and official March 2023 forecast



Note: The time series excludes the Bank of England from 1997–98 as defined by the UK's fiscal mandate.

Source: OBR's public finances databank (obr.uk/data/).

References

Emmerson, C., Johnson, P. and Zaranko, B., 2023. This will be the biggest tax-raising parliament on record. IFS Comment, https://ifs.org.uk/articles/will-be-biggest-tax-raising-parliament-record.

HM Treasury, 2023. Charter for Budget Responsibility: Autumn 2022 update. https://www.gov.uk/government/publications/charter-for-budget-responsibility-autumn-2022-update.

Keep, M., 2023. The welfare cap. House of Commons Library, Research Briefing 06852, https://researchbriefings.files.parliament.uk/documents/SN06852/SN06852.pdf.

Office for Budget Responsibility, 2023. Economic and Fiscal Outlook – March 2023. https://obr.uk/efo/economic-and-fiscal-outlook-march-2023/.

4. Policy risks to the fiscal outlook

Carl Emmerson, Martin Mikloš and Isabel Stockton (IFS)

Key findings

1 Under the March 2023 Budget forecast, debt was forecast to stabilise at the end of the forecast horizon, leaving no scope for additional borrowing under the government's current set of fiscal rules. **But pressures on both revenue and spending are skewed to add to borrowing over the next few years, unless difficult decisions are made on spending cuts or tax rises.**

2 Perhaps the most obvious risk to the current forecast is that the government has a stated indexation policy for fuel duties that stretches credulity to breaking point. Successive freezes that can be predicted in advance are in fact worse than a stated policy of non-indexation: we not only incur substantial costs to the public finances but the official forecast, for which the Office for Budget Responsibility (OBR) takes stated policy as given, is made less credible. Freezing fuel duties at their current rates – as the government surely intends – would reduce forecast revenues in 2027–28 by £6 billion. **This and other known pressures that the OBR is nevertheless unable to include in its forecast mean the official forecast is not as 'central' as it should be. This is harmful for transparency and makes scrutiny of fiscal plans more difficult.**

3 A further fiscal risk comes from the Chancellor's new corporation tax full-expensing policy. This has been put in place for three years (2023–24, 2024–25 and 2025–26), adding around £10 billion a year to measured borrowing in those years. Jeremy Hunt has signalled his desire for it to be made permanent. The OBR has said that it could cost approaching £10 billion a year to do this. **Making full expensing permanent would add to borrowing from March 2026**, but, as stated in Chapter 10, **a better estimate of the eventual direct fiscal cost would be around £1–3 billion a year.**

4 **In an environment of high and volatile inflation, cash-terms freezes to income tax and National Insurance thresholds are now set to raise much more than expected just months ago. An up-to-date inflation forecast suggests they could raise £52 billion in 2027–28** (or £43 billion if we include the cost of the big July 2022 uplift in the point at which employees and the self-employed pay National Insurance contributions, from which the level is now frozen). This is 40% more than the OBR's March 2023 forecast and 6½ times as much as the original package of threshold freezes was expected to raise when announced in March 2021 (£8 billion). As perhaps could have been predicted, it means much of the large increase in the personal allowance implemented during the 2010s has not proven to be sustainable: **the freeze could reverse two-thirds of that increase**. It could also lead to a record two-thirds of adults paying income tax (and a record one-sixth of adults paying higher-rate tax). **This large increase in taxpayer numbers could lead to pressure on the Chancellor, or his successor, to end the planned six-year freeze – much longer than any previously attempted or delivered – early.**

5 Provisional spending totals beyond 2025 pencil in a 1% real-terms increase in day-to-day spending on public services each year. These spending plans are far tighter than those bequeathed by then Chancellor Rishi Sunak, implying around £15 billion less spending in 2027–28 than set out in his 2022 Spring Statement, and **seem incompatible with the government's – or for that matter the Labour opposition's – appetite to spend**. After taking account of commitments on the NHS workforce, the huge expansion of state-funded early-years childcare announced in the Budget, increased spending on defence and overseas aid (to meet stated commitments) and a likely protection of school budgets, **'unprotected' departments would need to shoulder cuts of 1.5% per year, or £9.4 billion in today's terms, by 2027–28**. Mr Hunt has also lowered planned spending on investment, with the size of this cut relative to the spending implied by the previous plans bequeathed by Mr Sunak rising to £13 billion in 2027–28.

6 Longer-term structural factors – for example, the ageing of the population and cost pressures on the health and social care budgets – also challenge the sustainability of the public finances. **The OBR projects that spending on state pensions and health and social care will increase by 5% of national income – equivalent to £137 billion a year in today's terms – up to 2050 and then continue rising.** Accommodating these spending pressures would require deep cuts to spending elsewhere or a big further increase in tax.

7 There is inherent uncertainty around these long-run projections. On the one hand, there has been a significant increase in net immigration and slowing increases in life

expectancy at older ages, both of which will ease some of the pressure on the public finances in the long term. On the other hand, **steadily declining fertility rates will make it harder to finance growing ageing-related spending**, over and above the latest OBR projections, as they will reduce the population of working-age adults in coming decades.

8 Long-term public finances challenges around ageing, health and social care, and the transition to net zero have been known about for years, but there is a temptation to always push addressing these issues to 'tomorrow' – or just beyond the reach of the current forecast horizon and specific fiscal targets. However, many of the effects of an ageing population are already showing today and will only become more pressing over coming decades. **A detailed and coherent government strategy for tackling these pressures is urgently needed.**

4.1 Introduction

Under the Office for Budget Responsibility's March 2023 Budget forecast, the Chancellor was only meeting his commitment to have debt as a share of national income falling at the end of the forecast period by a hair's breadth. This forecast is intended to reflect a 'central' expectation of how the public finances might evolve under current plans. In this chapter, we set out a number of policy issues that put pressure on this forecast and act as a threat to its 'centrality'. Some areas, notably spending on incapacity and disability benefits, introduce genuine two-sided uncertainty – in other words, costs to the public finances, while very uncertain, might plausibly turn out either substantially higher or substantially lower than currently forecast. But most of them are pressures that appear likely to increase spending and reduce revenues, rather than the other way around. Furthermore, few of these pressures are temporary in nature. Additional borrowing to address them would therefore likely be permanent and would not be likely to be consistent with the government's stated fiscal objectives.

The rest of this chapter proceeds as follows. First, we discuss risks to tax revenues, starting with the ongoing freeze to direct personal tax thresholds (Section 4.2) and moving on to full-expensing capital allowances (Section 4.3) and successive 'temporary' fuel duty freezes and cuts (Section 4.4). We then move on to spending, discussing spending plans for public services (Section 4.5), spending on benefits to support disabled people and those with health conditions (Section 4.6) and spending on support for housing costs (Section 4.7). We then consider the longer-term pressures on health and social care and pensions, including a comparison of how the UK's long-term fiscal challenge compares with that faced in other countries (Section 4.8). In the

final section, we offer some general recommendations on what all these challenges mean for the forthcoming Autumn Statement and beyond.

4.2 Freezes to direct personal tax thresholds

Rather than increasing each year in line with inflation (as measured by the CPI), which is the usual default, most direct tax thresholds in the personal tax system have been frozen in cash terms since at least April 2021. By far the most significant of these (in terms of the number of people affected and the resulting revenue raised) are the freezes to the income tax personal allowance. Rishi Sunak, as Chancellor, announced in his March 2021 Budget that this would be frozen at its 2021–22 level for four years (2022–23, 2023–24, 2024–25 and 2025–26). The same would hold for the income tax higher-rate threshold (and the upper earnings limit (UEL) in National Insurance contributions (NICs)). In his Autumn Statement of 2022, Jeremy Hunt – Mr Sunak's successor but two as Chancellor – extended this for an additional two years, so it is now set to cover both 2026–27 and 2027–28 and run for a six-year period in total.

Alongside these freezes in income tax thresholds, the point at which employee and self-employed NICs start to be paid was increased by Mr Sunak in the 2022 Spring Statement to align them with the income tax personal allowance. Over the nine months from July 2022 to March 2023, this was costed by HM Treasury as a £6.3 billion tax cut (implying £8.4 billion over a 12-month period). But these thresholds – as they are aligned with the personal allowance – are now frozen. And in the Autumn Statement of 2022, Mr Hunt also extended the freeze to the point at which employer NICs start to be paid, which is another tax-raising measure. Under current policy, therefore, all of these thresholds are to remain at their current cash levels through to 2027–28.

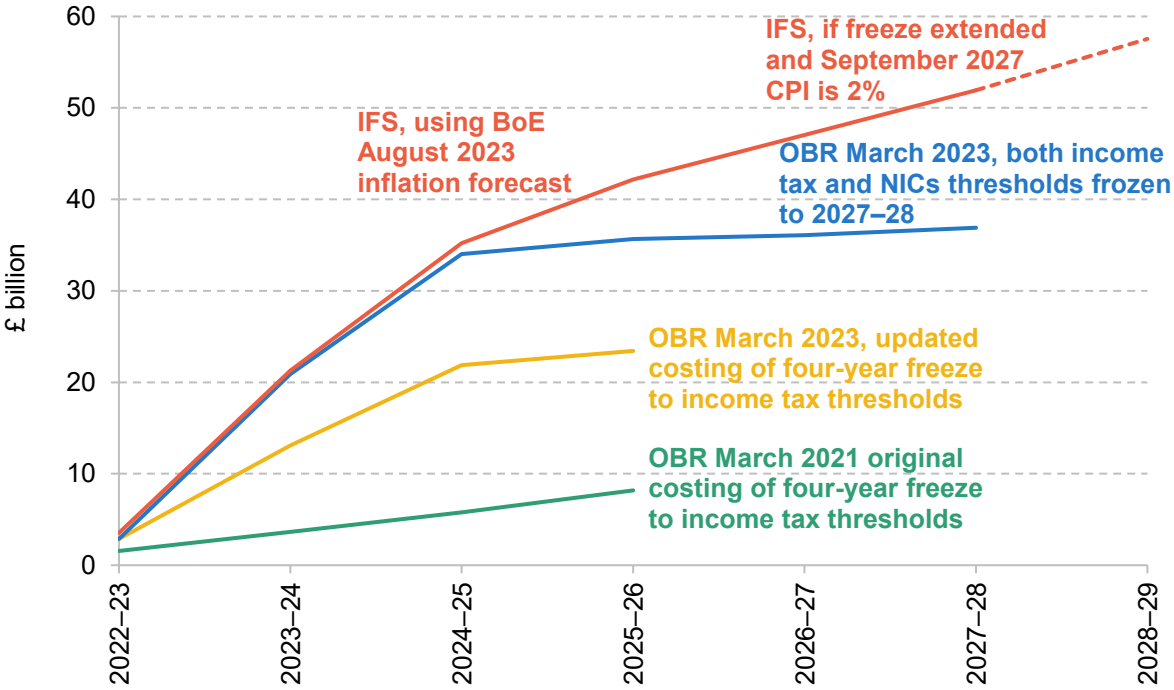
Freezing these thresholds means they are less generous than if they were indexed in line with inflation, and the measure therefore brings in more revenue. The amounts raised by the decision to freeze will depend considerably on the rate of inflation: lower inflation would mean that a policy of freezing an allowance delivered a smaller tax rise. So the current period of high inflation means that more is raised – and the fact that inflation is much higher than was forecast when the freezes were announced means that more will be raised than was expected at the time of the original announcement.

How much revenue might the freeze raise?

Different forecast vintages for the revenue raised from this package of measures are shown in Figure 4.1. The March 2021 Budget announcement to freeze both the income tax personal allowance and the higher-rate threshold (and UEL) was forecast to raise £8.2 billion in 2025–26 (the final year of the then planned four-year freeze). But that estimate was predicated on a

forecast for a much lower rate of inflation. The March 2023 Budget contained an updated number, suggesting that the four-year freeze to the income tax personal allowance and higher-rate threshold was now forecast to raise £23.4 billion in 2025–26, almost three times the original estimate.

Figure 4.1. Forecast revenue raised from freezes to income tax and National Insurance thresholds



Note: Excludes the estimated cost of the 2022 Spring Statement decision to increase the NICs primary threshold.

Source: Authors' calculations using table A of OBR's March 2023 Economic and Fiscal Outlook, page 191 of OBR's March 2021 Economic and Fiscal Outlook, Bank of England's August 2023 Monetary Policy Report and https://www.gov.uk/government/statistics/direct-effects-of-illustrative-tax-changes.

With other NICs thresholds also frozen, and the planned duration of the freeze extended to 2027–28, our calculations suggest that under the March 2023 Budget forecast, the package of freezes would raise around £37 billion in that year (or £28 billion if one takes off the revenue cost of the uplift in the point at which employees and the self-employed pay NICs that came into effect in 2022–23). But this assumes very low rates of inflation in 2024, 2025 and 2026. If we instead calculate revenue based on the latest inflation forecasts from the Bank of England (August 2023) and assuming that beyond 2026Q3 inflation remains at 2%, it looks like the freeze to both income tax and NICs thresholds is now on course to raise £52 billion in 2027–28 (or £43 billion if subtracting the cost of the increase in the point at which employees and the self-employed pay NICs). This would be 40% more than implied by the OBR's latest forecast. It is driven by the fact that the OBR's forecasts imply that, absent the freeze, the income tax thresholds would have risen by 21.2% between 2021–22 and 2027–28 whereas under the Bank

of England's forecasts (and assuming 2% inflation after the end of its forecast horizon) they would have risen by 29.7%.

This is a huge tax rise. To give a comparison, the biggest single tax-raising measure in recent history was the June 2010 Budget decision to increase the main rate of VAT from 17½% to 20%, which is estimated to raise £21 billion in 2027–28. Or, to put it another way, other ways to raise roughly £52 billion of revenue include increasing both the basic and higher rate of income tax by 6p, or increasing the main rate of VAT from 20% to 26%.

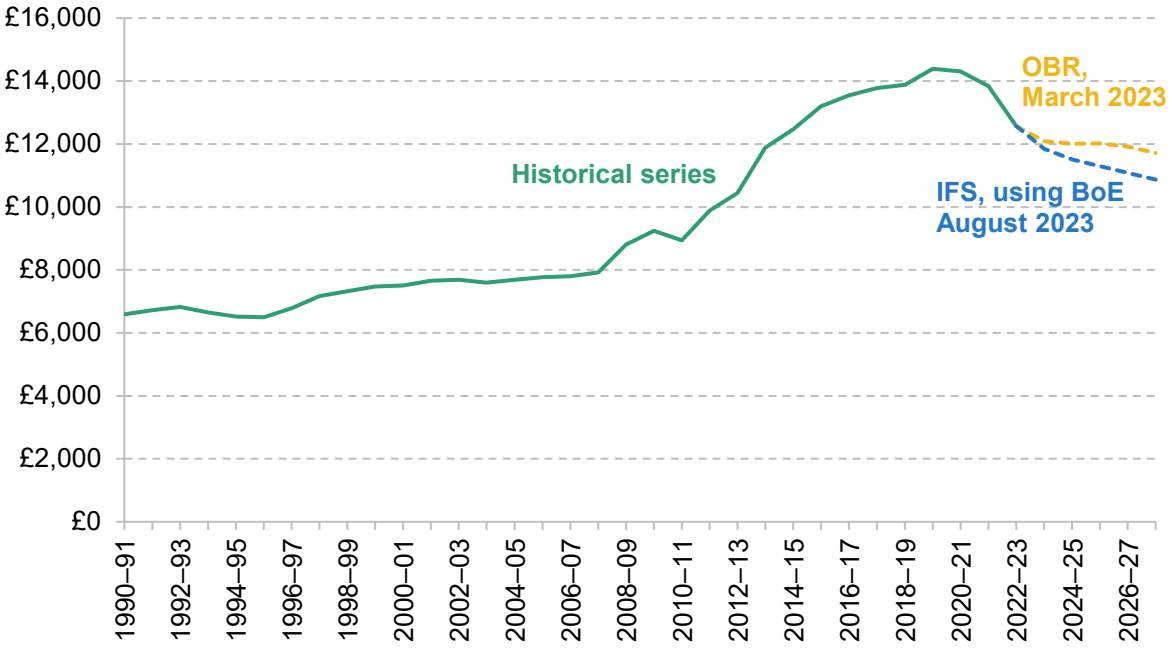
While the stated plan at the moment is to freeze income tax and NICs thresholds through to the end of 2027–28, something different could happen in the end. For example, in the forthcoming Autumn Statement, when presented with a fiscal forecast horizon that continues to 2028–29, Mr Hunt could decide to extend the freeze for an additional year. Assuming that inflation was at its 2% target in September 2027, we estimate this would raise an additional £6 billion in 2028–29, bringing the total tax yield from the package of freezes up to £58 billion in that year. Of the £6 billion, about £4.6 billion would come from an additional year's freeze in the income tax personal allowance (and the point at which employees and the self-employed pay NICs, which is aligned to this point), £0.4 billion would come from freezing the higher-rate threshold (and the NICs UEL), and £0.5 billion would come from freezing the point at which employer NICs begin to be paid.

Conversely, it is also possible that the freeze is ended sooner. In recent history, the UK has frozen the income tax personal allowance on a number of occasions (1981–82, 1993–94 and 1994–95, 2003–04, 2010–11 and 2020–21)[1] but never more than two years in a row. That is not to say that a previous Chancellor has tried and failed – it could simply be that it has not been done before because it has not been attempted. But freezing these thresholds through to 2027–28 would certainly be unprecedented by recent historical standards. Figure 4.2 shows the value of the personal allowance in real terms over time, both under the March 2023 OBR forecast and under the latest Bank of England (August 2023) forecast. The 2010s saw large increases in the personal allowance as Conservative Chancellors George Osborne and Phillip Hammond decided to increase it by much more than inflation. But perhaps unsurprisingly, it seems that much of this substantial tax cut has not proved to be sustainable. Under the OBR's forecast, the six-year freeze would, by 2027–28, reverse half (49%) of that enormous increase. Under the Bank of England's inflation forecast, we calculate that two-thirds (65%) of the earlier increase would be reversed. In both cases, the personal allowance in 2027–28 would fall in real terms to below its level in 2013–14. But it would also be true to say that, in either case, the personal allowance

[1] Source: https://ifs.org.uk/media/9156/download.

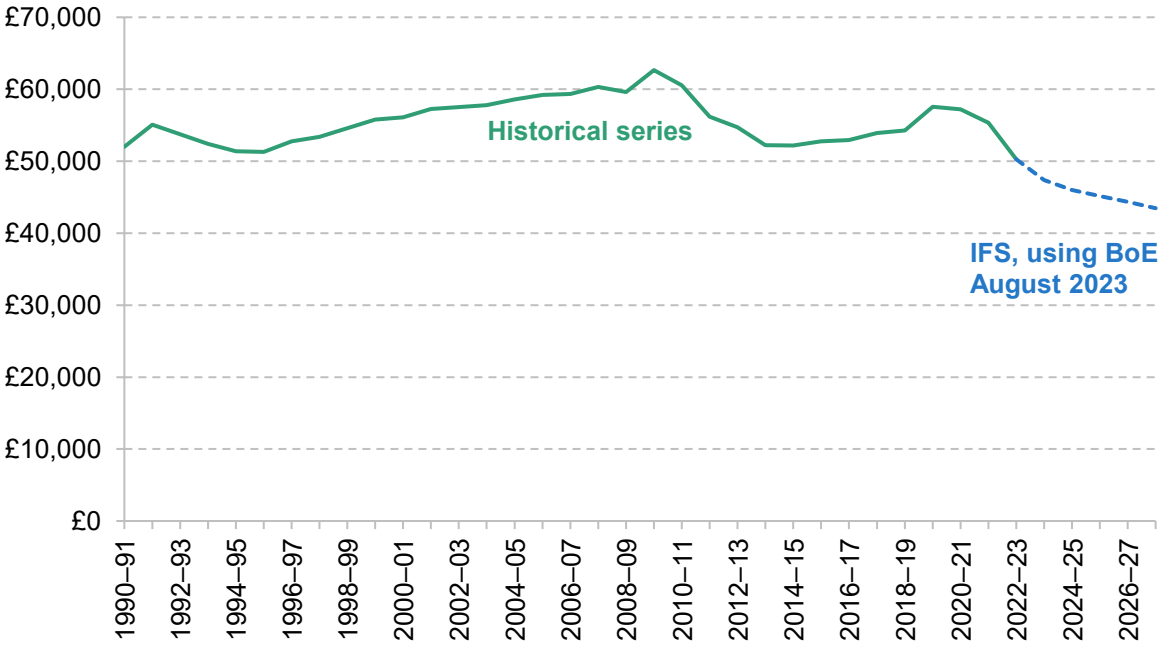
would in real terms remain above the level seen in any year prior to 2013–14, and over a fifth above its real-terms level in 2010–11.

Figure 4.2. Real value of the income tax personal allowance (2022–23 prices)



Source: Authors' calculations using OBR's March 2023 Economic and Fiscal Outlook and Bank of England's August 2023 Monetary Policy Report.

Figure 4.3. Real value of the income tax higher-rate threshold (2022–23 prices)



Source: Authors' calculations using OBR's March 2023 Economic and Fiscal Outlook and Bank of England's August 2023 Monetary Policy Report.

This is only part of the story. Those aged 65 and over used to be able to receive an enhanced income tax allowance, but this was phased out between 2010–11 and 2015–16 at the same time as there were sharp increases in the personal allowance. As a result, the tax-free allowance for this group has already been reduced to below its 2008–09 level, and under the ongoing freeze in 2027–28 it is set to be reduced to its lowest real-terms value since 2002–03.

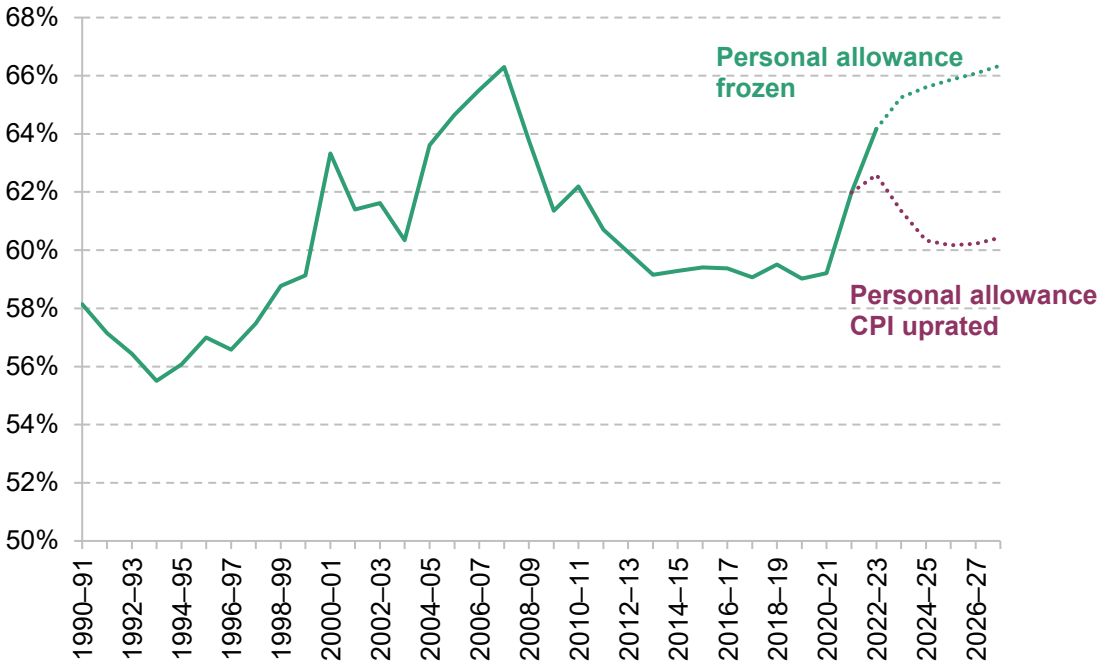
For the higher-rate threshold the story is also different (see Figure 4.3). Between 2010–11 and 2015–16, its value was actually cut in cash terms, let alone real terms, as the government wanted the gains from the large increases in the personal allowance to be more targeted at basic-rate taxpayers than they would otherwise have been. As a result, the current value of the higher-rate threshold, £50,270, is already 22% lower in real terms than it would be had it increased in line with inflation since 2010–11. Freezing this threshold through to 2027–28 would, under the Bank of England's August 2023 forecast, lead to it falling to 28% lower than its 2010–11 level.

How many more people will be brought into income tax?

These large real cuts to the personal allowance are bringing more people into the scope of income tax, with real income growth over time meaning that this share is forecast to increase. Figure 4.4 shows how the share of adults paying income tax over time has changed, alongside forecasts for how the share would be expected to evolve were the personal allowance to be frozen or were it to be increased in line with inflation. This shows that freezing the personal allowance is now forecast to increase the share of adults paying income tax to above 66%, a level that has only been seen once before (in 2007–08 at the end of Gordon Brown's Chancellorship). This compares with the 60% it would have been had the personal allowance not been frozen. The growing share of adults paying tax, and demographic change, mean that the overall number of taxpayers is forecast to increase from 31.7 million in 2020–21 to 38.2 million in 2027–28.

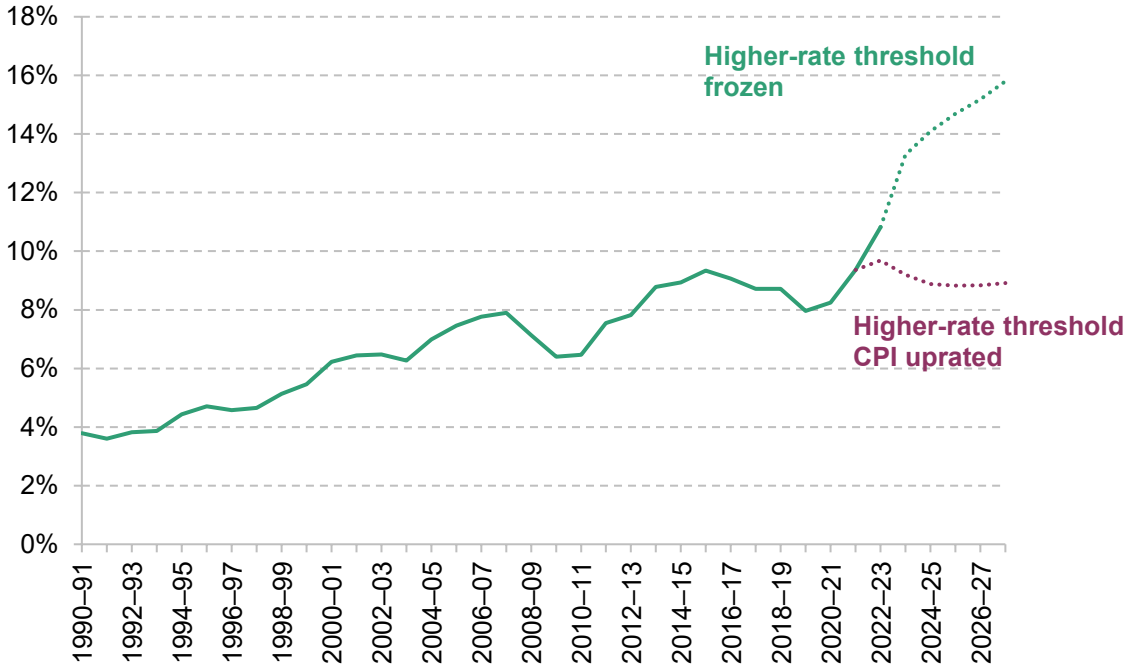
Over this period, growth in the number of income tax payers has been entirely down to growing numbers of those aged 65 and over paying income tax. This is due to three factors: demographic change; income growth among those aged 65 and over outstripping that of younger individuals; and the phasing-out of pensioner tax allowances described above. Between 2007–08 and 2023–24, while the overall number of income tax payers increased by 3.4 million (from 32.5 million to 35.9 million), the number of individuals aged 65 and over paying income tax increased by 3.7 million (from 4.8 million to 8.5 million) and the number of individuals aged under 65 paying income tax fell by 0.3 million (from 27.7 million to 27.4 million). Looking at the share of those aged 65 and over who are paying income tax, this has risen dramatically over time: from 36% in 1990–91 to 44% in 2000–01, 49% in 2010–11 and 62% in 2022–23.

Figure 4.4. Income tax payers as a share of adults



Source: Updated from Waters and Wernham (2022), based on HMRC's Income Tax Statistics and Distributions, OBR's March 2023 Economic and Fiscal Outlook and Bank of England's August 2023 Monetary Policy Report.

Figure 4.5. Higher- and additional-rate tax payers as a share of adults



Source: As for Figure 4.4.

The share of adults paying higher (or additional) rates of income tax is shown in Figure 4.5. We project that if the higher-rate threshold continues to be frozen, almost one-in-six adults would pay higher-rate tax in 2027–28, a record high. In other words, in that year, there would be almost 80% more individuals paying higher-rate tax than there would have been had the threshold been inflation indexed. The growing share of adults paying higher (or additional) rates of tax, and demographic change, mean that the overall number of taxpayers paying those rates is forecast to more than double from 4.4 million in 2020–21 to 8.9 million in 2027–28. The increasing size of the real-terms cut to the personal allowance and higher-rate threshold, and the increasing shares of adults brought into tax and brought into higher-rate tax as a result, might add to political pressure to curtail the freeze before it reaches its sixth year.

This is not to say that a government should never cut the personal allowance (or other thresholds in the income tax or NICs systems). The issue is that relying on a cash freeze to deliver the real cut means that the resulting generosity of the system, and the tax rise implemented, will depend on how inflation turns out, which is impossible to know in advance. A more coherent way to reduce the generosity of the system would be to (for example) increase allowances by inflation minus (say) 1 or 2 percentage points for a set number of years. This would deliver a certain reduction in the real-terms generosity of the chosen parameters and a more certain revenue raise. The political benefit of a freeze is, of course, that it might not look like a tax rise – if incomes are constant, an individual's tax bill will not rise in cash terms from one month to the next. It is, nonetheless, not the ideal way to make policy. Were the freeze to end a year earlier, we estimate this would reduce revenues in 2027–28 (relative to the freeze remaining in place in that year) by about £5 billion.

4.3 Full-expensing capital allowances

In the March 2023 Budget, the Chancellor announced that from 1 April 2023 to 31 March 2026 100% of the cost of all spending on certain plant and machinery – rather than (for firms that have exhausted their annual investment allowance) the standard rate of 18% – could immediately be deducted from profits before tax. This 'full expensing' is a substantial policy development: it was costed by the Treasury as adding an average of just under £10 billion a year to public sector net borrowing over the three-year period it is in place.[2] In the March 2023 Budget speech, Mr Hunt stated his 'intention to make it permanent as soon as we can responsibly do so'. The merits of this policy – as a temporary three-year policy or a permanent policy – are discussed in Chapter 10. Here we focus on the impacts on the public finances.

[2] See row 27 of table 4.1 on page 77 of HM Treasury (2023).

Were the policy to be made permanent, it would have the direct impact of reducing corporation tax revenues, and therefore pushing up public sector net borrowing and public sector net debt, beyond March 2026. Costing this policy accurately is challenging. The Office for Budget Responsibility (2023a) has noted the Chancellor's intention to put the policy in place permanently and stated that this 'could cost amounts approaching £10 billion a year'. The near-term increase in borrowing from making this policy permanent could be around this figure. But – as set out in Chapter 10 – when estimating the fiscal impact of this policy, it is important to take account of the fact that subsequent corporate profits will be boosted by the measure. This effect is substantial: the eventual annual impact of the policy will be to increase borrowing by around £1–3 billion a year (with the actual reduction being sensitive to the assumed discount rate).[3]

That said, the intention to make the policy permanent does represent a risk to the public finances, as delivering it would add perhaps as much as £10 billion a year to measured borrowing in four or five years' time – and add a similar amount to public sector net debt – but with the annual impact on borrowing falling to considerably less than that over the longer term. This much smaller impact on the public finances over the longer term perhaps begs the question why it was not introduced as a permanent measure. The suspicion has to be that the Chancellor was overly focused on the near-term impact on the public finances, and in particular how it would interact with his specific pledge to have debt falling in five years' time, rather than on the long-run cost and merits of the policy – if so, that is not a good way to make policy.

4.4 Fuel duties

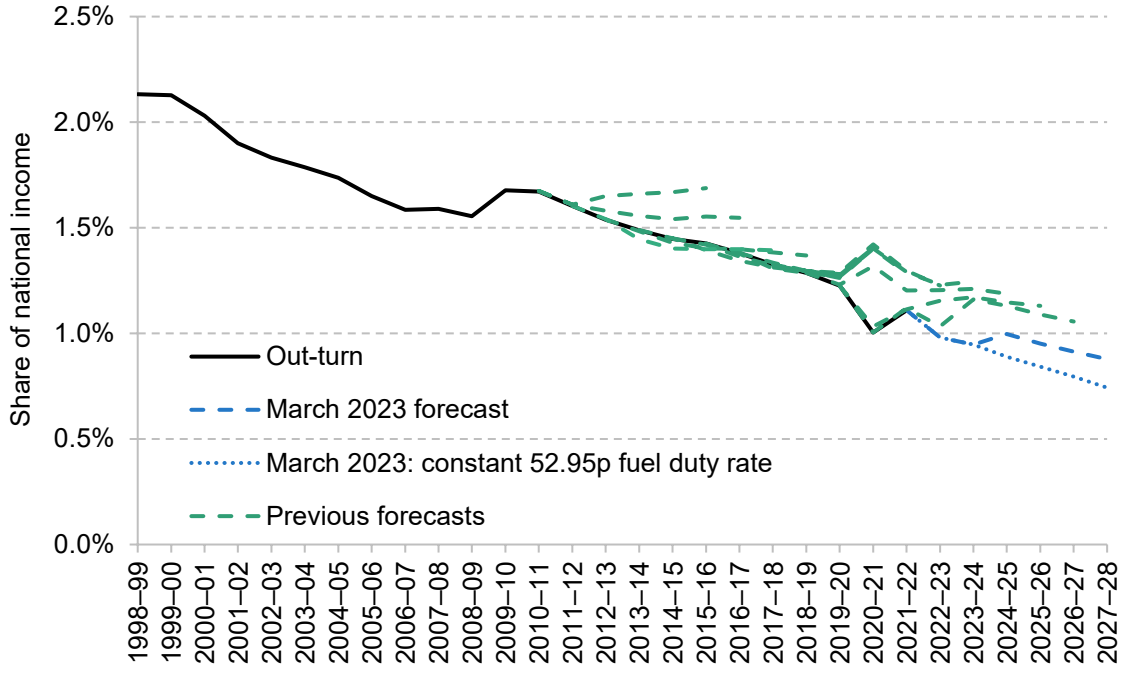
Stated policy is for the rates of fuel duty to increase each year in line with the Retail Prices Index (RPI). The shortcomings of the RPI as a measure of inflation aside, this is a sensible policy: it is difficult to think of an economic reason to cut the real value of fuel duties continually year-on-year by whatever the rate of inflation happened to be. However, fuel duties indexation has become something of a joke, with a succession of one-year freezes announced every single year since 2011, while Chancellors insist on simultaneously maintaining the pretence that in a year's time the rate would indeed be indexed. This is an expensive policy: the OBR estimated in March that the freezes have cumulatively cost around £80 billion up to this point, even after accounting for the fact that fuel consumption would have been lower had the rates of fuel duties not been cut in real terms. In addition, the 'temporary' one-year 5p rate cut introduced in March 2022 was

[3] A similar effect is seen for public sector net debt. This is a cash measure, and therefore the reduction in up-front corporation tax receipts will immediately lead to debt being higher than it otherwise would have been. Subsequently, there will be a boost to receipts from less investment being available to be expensed in future years because it will already have been expensed at the outset. But this will only reduce debt when those higher tax payments are received.

extended, supposedly for just one more year, this past March. Together with the successive cash freezes, this has led to revenues from fuel duties in 2023–24 being forecast to be the same in nominal terms as they were in 2008–09, and around £14 billion lower in 2023–24 than had they been increased in line with the RPI since 2010–11.

The decision to extend the 5p rate cut, instead of allowing it to expire and increasing rates in line with the RPI, cost £4.8 billion in the coming year alone. Figure 4.6 shows how fuel duty revenues were forecast to increase in line with RPI indexation at each fiscal event, only for another freeze to be announced and the increase postponed for another year. If rates continue to be frozen, the figure shows that revenues in 2027–28 are forecast to be around one-third of the share of national income that they were in the late 1990s; in today's terms, revenues in 2027–28 would be £33 billion lower than had they remained at the 2.0% of national income seen in 2000–01.

Figure 4.6. Successive forecasts for fuel duty revenues



Source: Chart 4.4 of OBR's March 2023 Economic and Fiscal Outlook.

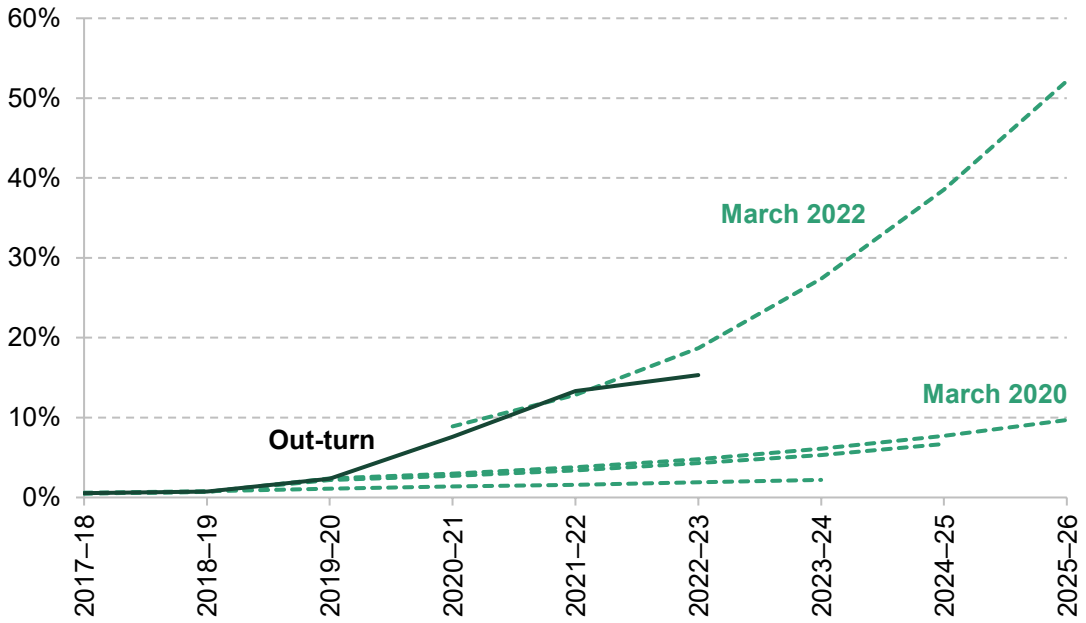
Successive freezes that can be predicted in advance are in fact worse than a stated policy of non-indexation: not only do we incur substantial costs to the public finances but also the official forecast, for which the OBR is obliged to take stated policy as given, is made less credible. This damages the transparency of fiscal policymaking and makes scrutiny of the government's actual plans – as opposed to stated plans that lack any credibility – more difficult. Fuel duties are a prominent example of this issue, but it extends to other policies, most importantly spending plans that are so tight as to be undeliverable in the context of stated ambitions for various public services, as discussed below.

The requirement to take stated policy as given has protected the OBR from pressures to analyse many different policy scenarios (potentially more than its resources allow) and produce some scenarios that could be politically contentious (such as costing the commitments of political parties that are seeking office or the fiscal consequences of outcomes of referendums – such as those on Scottish Independence and Brexit – going against the government's stated preference). Nevertheless, in cases such as the indexation of fuel duty rates, where likely government policy appears so clearly to deviate from stated government policy, it would seem better for transparency and the credibility of the OBR's forecasts for it to base them on likely government policy. As the Treasury Select Committee (2023) put it, doing so would 'make for a more credible forecast'. At the time of the March 2023 Budget, the OBR estimated that were fuel duty rates to remain at their current cash level, rather than the 5p cut being allowed to expire and the rates being increased in line with the RPI, this would reduce revenues in 2027–28 by £4 billon. The outlook for inflation has increased since then, which will push up the expected cost of a continued freeze – continuing the freeze to 2027–28 might now reduce revenues in that year by around £6 billion.

Revenues from fuel duties in the longer term

In the longer term, a more fundamental issue with fuel duties is that the tax base will disappear as we transition to net zero by 2050. As part of this, the government has committed to ending sales of new petrol and diesel cars, though the Prime Minister recently pushed this back from 2030 to 2035. While the use of electric vehicles does not generate externalities in the form of

Figure 4.7. Successive assumptions for electric vehicles as a share of new car registrations



Source: OBR's July 2021 Fiscal Risks Report and March 2022 Economic and Fiscal Outlook; Department for Transport and Driver & Vehicle Licensing Agency's vehicle licensing statistics data tables.

emissions, it does generate congestion. There is therefore a case for taxing it (in addition to the wish to replace lost revenue from fuel duties). The phasing-out of combustion-based vehicles in favour of electric ones is not a new or surprising trend – both the issue and the principles of a solution (Adam and Stroud, 2019) have been known for years. Earlier forecasts consistently undershot the actual adoption of electric vehicles (Figure 4.7), meaning that the costs of inaction are higher than initially thought.

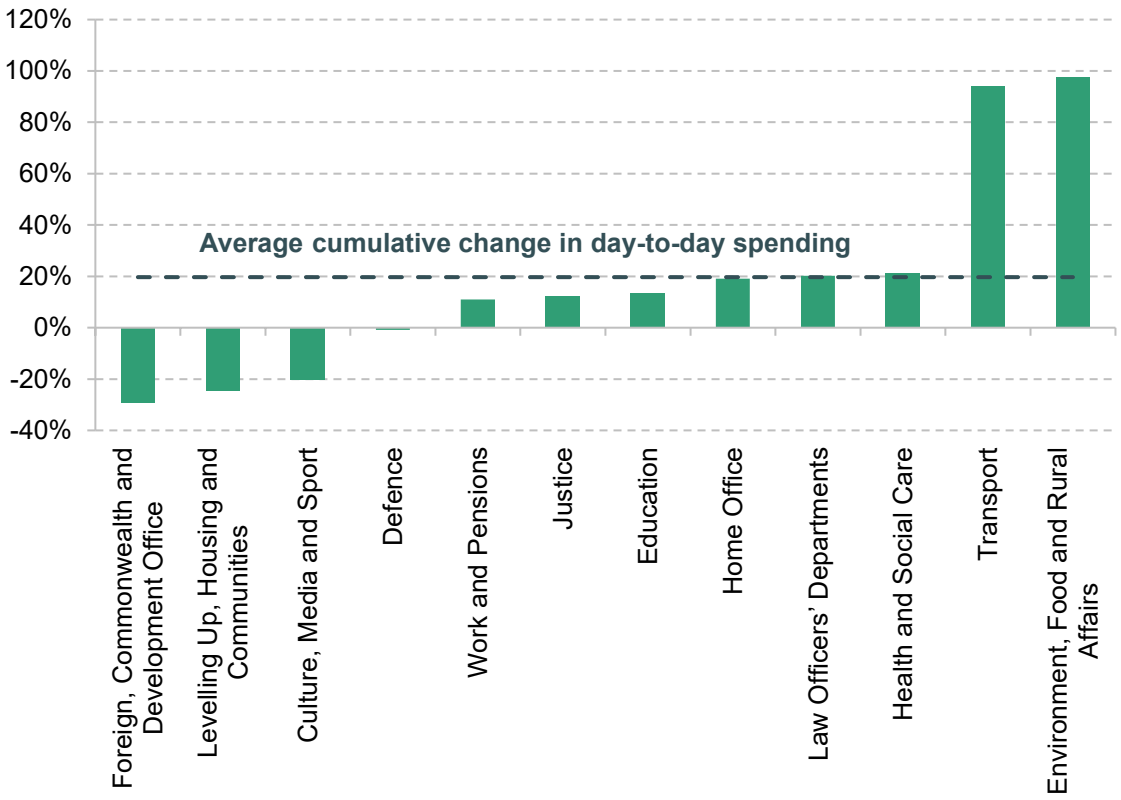
4.5 Spending on public services

Day-to-day spending

Detailed departmental spending allocations currently run until 2024–25, with planned cumulative real-terms growth in total day-to-day spending in this year and the next (i.e. over the two years between 2022–23 and 2024–25) of 3.3%.

Under current plans, real-terms day-to-day spending on public services is set to have risen by 20% over the course of this parliament, between 2018–19 and 2024–25. This is an increase of 3.0% per year on average between 2018–19 and 2024–25, which compares with 4.1% a year on

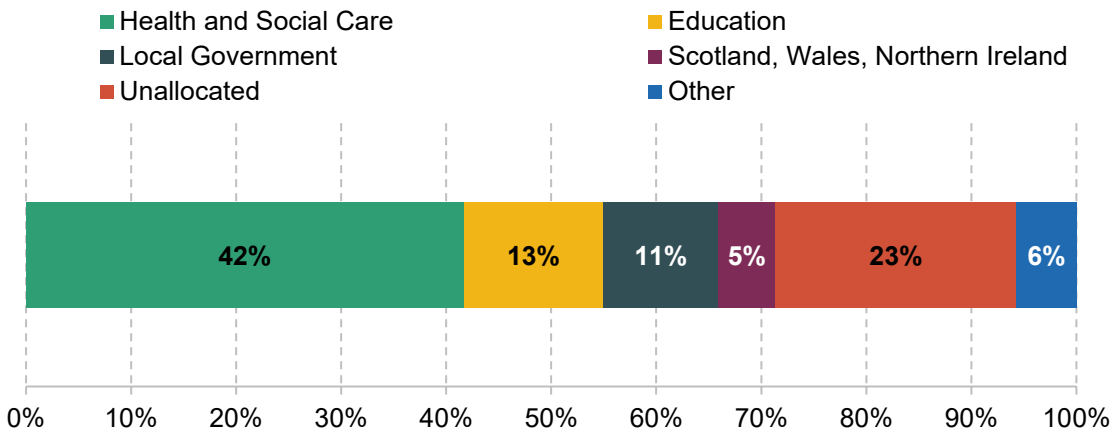
Figure 4.8. Real-terms change in day-to-day spending by department, between 2018–19 and 2024–25



Source: Authors' calculations using HM Treasury's Public Expenditure Statistical Analyses 2023.

average over the New Labour governments (from 1998–99 to 2009–10) and minus 0.9% per year on average over coalition and Conservative governments between 2009–10 and 2018–19. This increase has not been spread evenly across departments, as Figure 4.8 puts in context. Some areas have seen much larger rises: day-to-day spending on transport, for example, has almost doubled, with a big increase in spending on subsidies for railways and local public transport since the pandemic. The Health and Social Care budget has grown by a little more than the average (21%). Other budgets have fared less well. Justice and Education have risen by less than the average (by 12% and 14%, respectively). Day-to-day spending has in fact fallen in real terms in some departments since 2018–19 – the Foreign, Commonwealth and Development Office is set to have faced cuts of almost 30% by 2024–25, Housing and Communities faces cuts of 24%, and the Defence resource budget will be around 1% lower at the end of this parliament than it was at the beginning.

Figure 4.9. Contribution to day-to-day growth in public spending between 2018–19 and 2024–25



Source: Authors' calculations using HM Treasury's Public Expenditure Statistical Analyses 2023.

More than half of the overall increase in day-to-day public service spending over the course of this parliament – which amounts to £135.9 billion in cash terms, or £73.7 billion in 2023–24 prices – can be attributed to just two areas: health and education. Figure 4.9 shows that 42% of the overall increase (£30.7 billion in 2023–24 prices) went to the Department of Health and Social Care, with a further 13% (£9.8 billion) going to the Department for Education. 16% of the increase went to English local government and the devolved governments (11% and 5%, respectively). A sizeable chunk of spending in 2024–25 (around £17 billion), equivalent to around a quarter of the increase since 2018–19, is yet to be allocated to departments.[4] Given the

[4] This largely reflects a (sensible) decision by HM Treasury to build in larger 'reserves' in the face of uncertainties around post-COVID public service pressures and a high-inflation environment. £4 billion of the £17 billion or so of unallocated budget is in respect of announced Budget measures but not yet allocated to departments (i.e. it has already been 'spent').

likely need for ongoing support towards the Ukrainian war effort, the spending pressures associated with higher public sector pay awards, and the high-profile budgetary challenges faced by councils and NHS trusts, we might expect the majority of this to be allocated and spent. Other spending combined – including on justice, housing, and policing – only contributed 6% of total day-to-day spending growth.

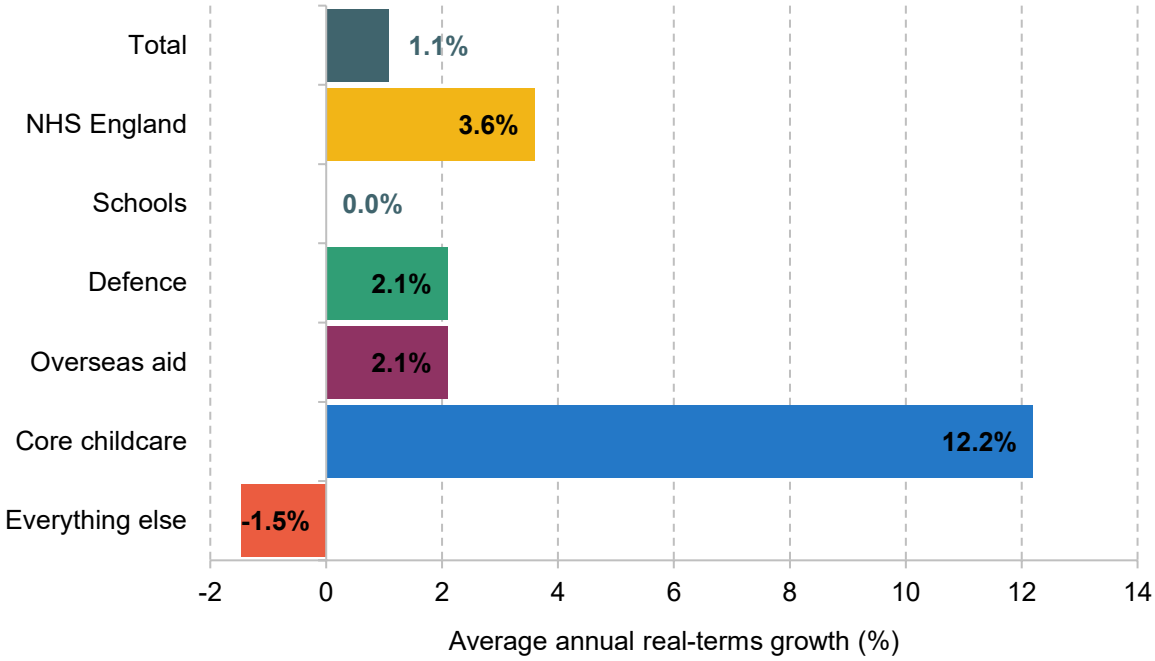
Spending plans for the years beyond 2024–25 (and so beyond the next election) consist of *provisional* spending totals. Decisions on how these will be shared between departments have not been made yet (a full Spending Review is due by the end of 2024). In March 2022, spending was planned to grow by 1.9% in 2025–26 and 1.7% in 2026–27, in line with projected real GDP growth. In November 2022, these provisional spending totals were cut back, with spending instead planned to grow at a rate of 1% in real terms each year up to 2027–28. This reduced planned spending by £6.8 billion in 2025–26, and implied a cut (again relative to previous plans) rising to £21.5 billion in 2027–28. In March 2023, the government announced additional spending on childcare and defence, and the spending totals for future years were revised upwards accordingly (an extra £4.9 billion in 2024–25, rising to £6.6 billion in 2027–28). The annual growth rates beyond 2024–25 were left effectively unchanged (because the additional spending also applies to 2024–25, the baseline year from which those growth rates are calculated).

At first glance, this may not look particularly challenging – after all, there would be no overall cuts, with public service spending growing in each year even after accounting for inflation. And it would come after a five-year period of substantial real increases. But given the government's ambitions in a number of areas, keeping growth in total spending within this limit is likely to prove extremely challenging.

To illustrate this, Figure 4.10 shows what the implications of this tight spending envelope might be, under a set of plausible assumptions. In this scenario, NHS funding is assumed to grow at a rate of 3.6% in real terms, just below its long-run average growth rate. Analysis in Chapter 8 of this Green Budget suggests that this is the increase that would be required, under a central set of assumptions, to deliver the ambitious long-term NHS workforce plan published in June. Defence spending and spending on overseas aid are assumed to be maintained as a proportion of national income.[5]

[5] This is a relatively conservative assumption, given the government's stated 'ambition' to increase defence spending to 2½% of GDP by 2030. If spending on defence increases faster, the outlook for other departments would be even tighter.

Figure 4.10. Illustrative change in real-terms day-to-day funding implied by latest plans, 2024–25 to 2027–28



Source: HM Treasury's Autumn Statement 2022 and Spring Budget 2023.

We assume that schools funding is frozen in real terms, implying slight increases in per-pupil spending as pupil numbers fall. Per-pupil freezes (and, temporarily, cuts) have been delivered in the past. However, with schools facing increasing demands around mental health, compensating for learning loss during the pandemic and tackling persistent absenteeism, freezes may be harder to deliver now than they were in the past. And small reductions in pupil numbers do not immediately lead to a matching reduction in costs for schools. Finally, the core childcare budget needs a large increase to fund the big expansion of free childcare to younger children announced in Mr Hunt's March 2023 Budget.

Delivering these increases in spending, while keeping to the overall spending envelope, would require average real-terms cuts to everything else (the 'unprotected' areas) of 1.5% a year – totalling £9.4 billion by 2027–28.[6] Many of these areas, including local government (responsible

[6] If the £13 billion Reserve built into plans for 2024–25 is cut from plans, rather than allocated to departments, that would reduce the starting baseline, boosting growth in spending going forwards and meaning no area need face cuts relative to 2024–25. However, as discussed above, there are good reasons to expect the majority of the Reserve to be spent. In any case, a bigger underspend in 2024–25 (which is what a cut to the Reserve would represent) would not increase the cash budgets or resources available to be spent in later years. In other words, just because cutting planned spending in 2024–25 would increase the measured percentage increases over the next Spending Review period, it does not mean that the spending totals for later years would be less tight in any meaningful sense.

for adult and children's social care), criminal courts and prisons,[7] are facing growing demand and significant cost pressures, and are already showing signs of strain.

Another issue is that the figure of a 1.1% overall real-terms increase may not reflect the price pressures faced by departments. For one thing, it is based on the OBR's March forecast for inflation, which sees inflation falling to a very low level in the later forecast years – the forecast is for economy-wide inflation to be between 1.0% and 1.7% in the next three years. In Chapter 3, we discuss Citi's current economic forecast, which anticipates economy-wide inflation closer to 'normal' levels (those thought to be the long-run equilibrium) – between 1.8% and 2.2%. If this later forecast is correct, the squeeze on departmental budgets would be more intense than the above numbers suggest – unless spending totals were topped up to compensate.

In addition, economy-wide inflation – as captured by the GDP deflator, the measure typically used to calculate real-terms changes in public service spending – may understate cost pressures departments face. For example, it does not include price changes for imported goods, such as energy, and has been running behind wage growth in the whole economy, one of the factors putting pressure on public sector pay settlements. The costs that departments actually have to pay may therefore, at least in some cases, rise faster than this measure suggests. In turn, this means that spending settlements may not stretch as far as the real-terms numbers suggest.

Past experience also suggests that spending totals are likely to end up higher than is currently pencilled in when it comes to specifying a detailed allocation across departments. At Spending Reviews since 2010, departmental spending totals have been topped up by an average £14.3 billion per year; at the 2021 Spending Review, they were topped by an average £30.6 billion (Atkins and Lanskey, 2023). Under our (conservative) assumptions about protected departments' spending, this would be more than enough to avoid cuts for unprotected departments in this case.

Investment spending

Public sector net investment – the broadest measure of government investment – has oscillated over the parliament, but is set to average 2.5% of national income between 2019–20 and 2024–25, well above the 1.5% average over the previous 40 years. After 2024–25, current plans imply a sharp reduction in government investment as a fraction of national income (Zaranko, 2023), though investment will still be relatively high by historical standards.

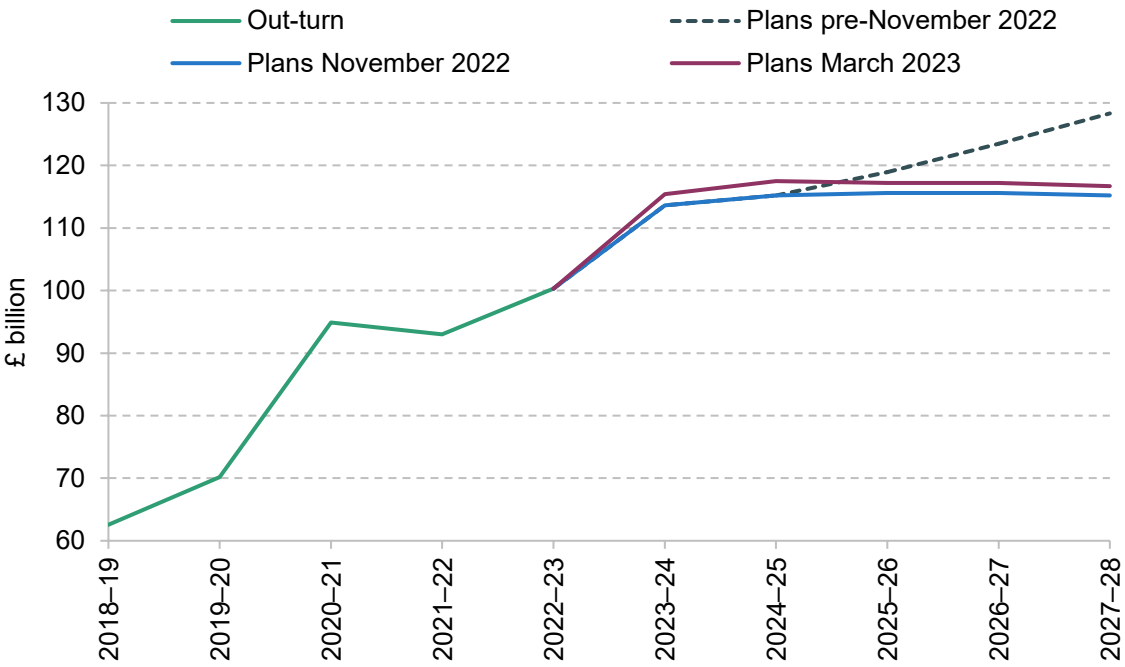
Notably, the government is now planning to spend considerably less on investment in the medium term than under the plans bequeathed to Mr Hunt by Mr Sunak. This is most obvious if

[7] See https://www.instituteforgovernment.org.uk/performance-tracker-2022-23/prisons setting out pressures faced by the prison sector.

we look at plans for departmental capital spending (which abstracts away from other elements of public sector net investment, such as the 'investment' associated with student loans).

These are shown in Figure 4.11. Under current plans, capital budgets are set to increase in real terms by 34% over the course of this parliament. This increase, of £26.6 billion in 2022–23 prices or £39.0 billion in cash terms, was concentrated at the beginning of the parliament.[8] Between 2019–20 and 2020–21, capital budgets rose by £23.6 billion in cash terms, from around £70 billion to £94 billion. This sharp increase accounts for 60% of the total cash-terms increase over the course of the parliament: although capital budgets continued to rise after 2020–21, this was at a slower pace.

Figure 4.11. Capital spending limits between 2018–19 and 2027–28 (cash terms)



Note: 'Pre-November 2022' line takes November 2022 plans for capital spending as given until 2024–25, then assumes capital spending grows with nominal GDP growth as projected in November 2022 for 2025–26, 2026–27 and 2027–28 (3.2%, 3.8% and 3.9%). November 2022 and March 2023 lines are taken from the Autumn Statement 2022 and Spring Budget 2023 tables, respectively. Values for 2023–24 and 2024–25 exclude the OBR's estimate of the likely departmental underspend.

Source: HM Treasury's Autumn Statement 2022, Spring Budget 2023 and Public Expenditure Statistical Analyses 2023.

[8] Note that these figures include an OBR estimate for likely underspending in future years: departments tend to underspend their capital budgets – often by a considerable amount. The OBR expects a 'shortfall', or underspend, of £8.3 billion in 2024–25. If instead departments somehow spent 100% of their allocated budgets, spending would therefore increase by £47.3 billion in cash terms (rather than £39.0 billion), or 44% in real terms.

Under the plans inherited by Mr Hunt (labelled as the pre-November 2022 plans in the figure), capital budgets were set to then increase in line with the cash size of the economy – by 3.7% per year – after 2024–25. In the 2022 Autumn Statement, Mr Hunt chose instead to freeze those budgets in cash terms after 2024–25. We estimate that this represented a cut of £3.3 billion to planned investment spending in 2025–26, compared with the counterfactual where spending instead grew in line with GDP, rising to a cut of £13.1 billion in 2027–28.

Those plans were then topped up slightly in March 2023, with additional funding primarily going to the Ministry of Defence, but capital spending is still projected to be flat in cash terms after 2024–25. So, although departmental capital budgets will be considerably higher than before the pandemic, they face real-terms cuts over the next Spending Review period. Sticking to these plans could prove challenging. Pressures to invest more in public services are numerous, with a defence strategy that involves an increased emphasis on equipment and technology, a schools and hospitals estate in high-profile difficulties, a major new hospital building programme, and additional public investment required to support the transition to net zero. Achieving all of that while keeping overall investment spending constant in cash terms implies big cuts elsewhere.

4.6 Incapacity and disability benefit spending

Over the 2010s, spending on benefits for disabled people and those with health conditions grew relatively strongly among both children and working-age individuals. Moreover, this growth was despite the replacement of disability living allowance (DLA) with personal independence payment (PIP), which was intended to reduce both working-age claimant numbers and the associated spending by 20% (HM Treasury, 2010).[9]

Table 4.1 shows that since the pandemic, benefit expenditure on these groups has increased more quickly than over the 2010s. That is perhaps not surprising. But what is surprising is that it is now forecast by the OBR to grow *even more quickly* over the next five years through to 2027–28. The majority of spending to support those with health conditions is on working-age individuals and spending on this component is forecast to increase (in real terms) by £19.3 billion, from £54.3 billion in 2022–23 to £73.5 billion in 2027–28, which would be an increase of 36%. Spending on children is forecast to increase by £2.1 billion, which would represent an astonishing 71% growth over just five years. In both cases, this would represent a sharp acceleration compared with the growth seen previously. For example, spending on working-age individuals is forecast to grow more than twice as quickly as it did during the 2010s: spending in 2027–28 is forecast to be about £10 billion higher in today's terms than if

[9] The increase in the female state pension age from 60 to 66 and the male state pension age from 65 to 66 will have also pushed up working-age benefit spending. But disability benefit claim rates increased at every single age from 0 to 66 between 2012 and 2022. See figure 2 of Banks, Karjalainen and Waters (2023).

spending grew at the 3.0% a year seen over the decade up to the pandemic. For children, the acceleration in the growth rate is even stronger: spending is forecast to grow by 11.3% a year over the next five years compared with 2.5% a year over the 2010s.

Table 4.1. Benefit expenditure to support disabled people and those with health conditions

	£ billion (2022–23 prices)			Average annual real increase (%)			
	2022–23	2027–28	Increase	2002–03 to 2009–10	2009–10 to 2019–20	2019–20 to 2022–23	2022–23 to 2027–28
Children	2.9	5.0	2.1	–4.1	2.5	6.3	11.3
Working age	54.3	73.5	19.3	1.3	3.0	5.0	6.2
Pensioners	11.8	15.5	3.7	4.7	–0.1	–0.3	5.6
Total	68.9	94.0	25.1	1.8	2.3	4.1	6.4

Note: DWP spending only. Includes incapacity benefits (including the standard allowance and health element of universal credit), disability benefits, carer benefits, industrial injuries benefits, and both housing benefit and universal credit housing element for those in the disabled, incapacity or carer groups. For those benefits that are devolved during the period, the coverage is England and Wales throughout for consistency.

Source: Authors' calculations using table 4(ii) of Department for Work and Pensions, 'Benefit expenditure and caseload tables', April 2023 (https://www.gov.uk/government/publications/benefit-expenditure-and-caseload-tables-2023).

Part of this increase in spending over the next few years can be explained by the fact that these benefits are, by default, uprated by a lagged measure of household inflation (the Consumer Prices Index), whereas for the purposes of deflating public spending we instead use a contemporaneous measure of economy-wide inflation (the GDP deflator). Inflation is falling and economy-wide inflation is currently much lower than household price inflation. This lag, and difference in inflation measure, explains cumulative real-terms growth (relative to the GDP deflator) of 9% over the five years to 2027–28.

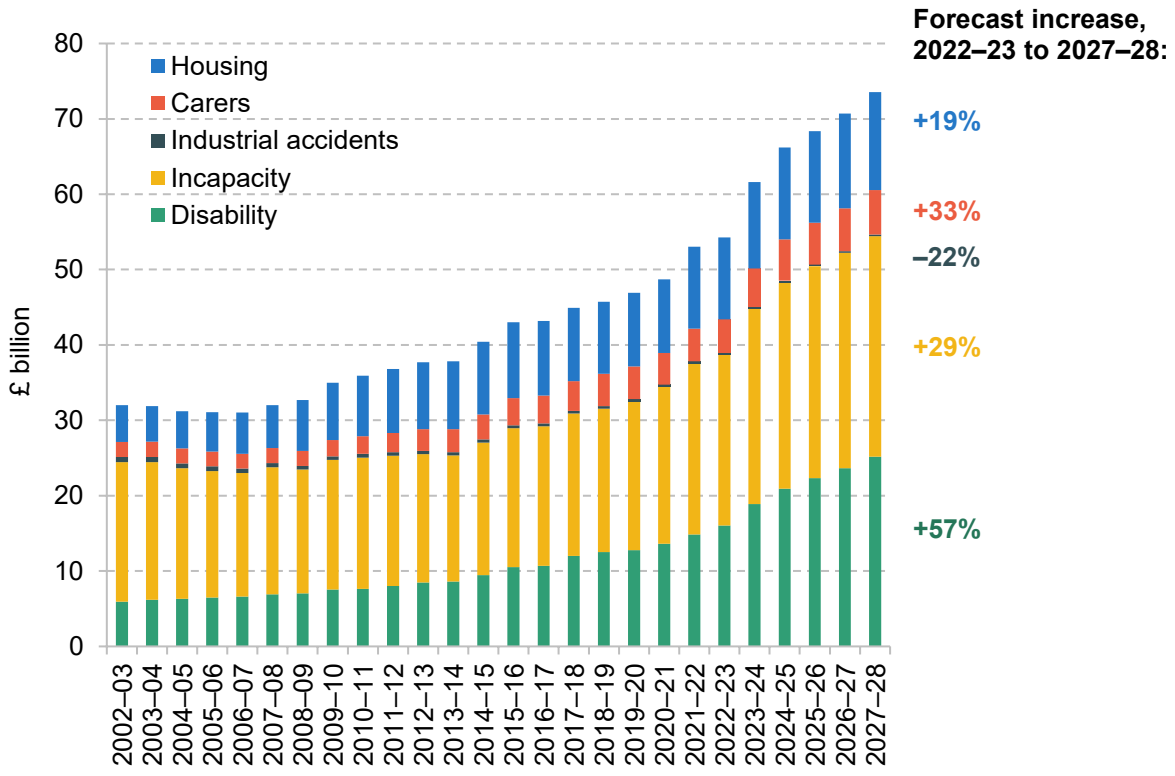
By far a bigger part of the increase in forecast spending is due to the forecast for rising claimant numbers, which are the result of the much-elevated rates of *flow onto* benefits seen since the pandemic. For example, the number of disability benefit recipients is forecast to increase by 35%, from 5.5 million in 2022–23 to 7.4 million in 2027–28. Were this growth to materialise, the increase of 1.9 million over just five years would be slightly bigger than the increase in claimant numbers seen over the previous 23 years (from 1999–2000 to 2022–23). Again, particularly striking is that the number of children receiving DLA is forecast to grow by 48% over the five years, from 582,000 in 2022–23 to 862,000 in 2027–28. That so many more individuals are expected to qualify for this support is obviously extremely concerning. What data

there are suggest the increase can be seen at all ages, with increases in claims associated with both physical and mental health conditions.

Spending on working-age households

A breakdown of this spending by benefit type for working-age households is shown in Figure 4.12. Of the £19.3 billion forecast increase in real-terms spending between 2022–23 and 2027–28 (shown in Table 4.1), close to half (£9.2 billion) is from a rise in forecast spending on disability benefits – that is, benefits intended to support those who face additional costs due to disability regardless of their household income or whether they are working. This is primarily spending on PIP. Another £6.6 billion is from a rise in forecast spending on the personal allowance and health-related payment for those on universal credit (UC) with a health condition, which is intended to support those in low-income households whose health condition limits their ability to do, or seek, paid work. These would represent cumulative increases in spending of 57% and 29% respectively. Spending on carers' benefits, and spending on support for housing costs among the latter group (either through housing benefit or within UC) are also forecast to rise. With more individuals qualifying for financial support for disability or health-related conditions, we might also expect increased demands on some public services, most obviously (but not limited to) the National Health Service.

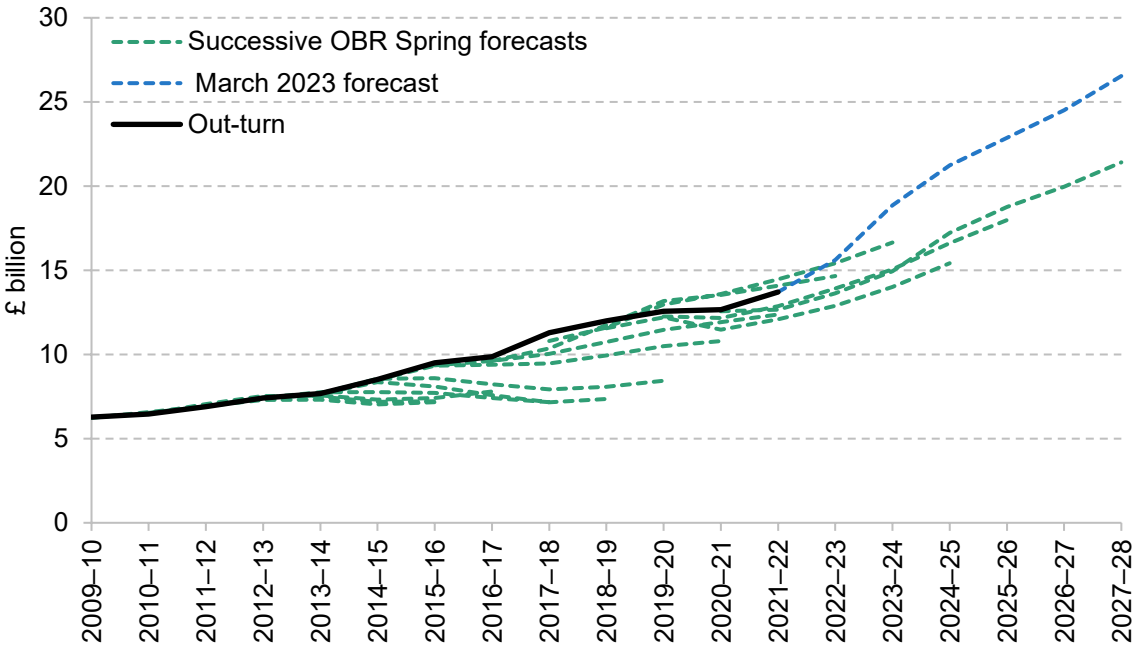
Figure 4.12. Benefit spending to support working-age disabled people and those with health conditions, 2022–23 prices



Note and source: As for Table 4.1.

The increase in spending on UC is despite the decision made by Mr Hunt in his 2022 Autumn Statement to delay moving existing claimants of employment and support allowance onto UC until April 2028. This was estimated to reduce spending in 2027–28 by £0.3 billion and, perhaps rather conveniently, pushed the fiscal cost of this final part of the roll-out of UC to beyond the end of the five-year fiscal forecast horizon. If a desire to suppress spending in 2027–28 in order to make it easier to have debt falling in that year was the motivation, then this is not a good way to make policy.

Figure 4.13. Successive OBR Spring forecasts for spending on working-age disability benefits



Source: Chart 3 of Office for Budget Responsibility (2019), and table 'Disability benefits' from Department for Work and Pensions, 'Benefit expenditure and caseload tables', 2020, 2021, 2022 and 2023 editions (https://www.gov.uk/government/collections/benefit-expenditure-tables).

There are clear risks to the public finances from this area of spending. Most obviously, the rapid recent increase in spending on these benefits creates considerable uncertainty over whether this is likely to accelerate further or to stabilise or even to reverse. So it could be that spending turns out to grow even faster than forecast. Were spending to grow by 1 percentage point faster each year for the next five years – a big change in normal circumstances but perhaps not in the current climate – this would add almost £5 billion to spending in 2027–28. There is also the upside risk for the public finances that such growth might not materialise and spending actually undershoots the forecast. Indeed, the most recent data suggest that the claim rate for PIP has started to fall back – though it still remains well above that seen in the couple of years leading up to the

pandemic.[10] More generally – as shown in Figure 4.13 – since its inception, the OBR has consistently tended to underestimate what spending on working-age disability benefits will be. And sometimes considerably so: in the Spring 2014 Budget, it forecast that spending in 2018–19 would be £7.4 billion whereas it turned out to be over 60% higher at £12.0 billion. The only notable exception so far to this pattern of underestimating future spending has been during the pandemic when, for understandable reasons, there were considerable delays in individuals moving onto PIP.

Further policy change is also on the horizon. A week before the March Budget, the government published *Transforming Support: The Health and Disability White Paper* (Department for Work and Pensions, 2023). The stated rationale for the reform is not to reduce spending but rather to rationalise the system and to improve the experience of the benefits system for disabled people and those with health problems. In particular, a central plank to the proposals is to abolish the work capability assessment (WCA), which determines health-related support within UC, and instead passport eligibility from the PIP assessment.[11] If legislated and enacted, it would represent a major change to the system and therefore make forecasts for the related spending more uncertain. However, it would only apply to new claims over the three years from 2026–27 (with the OBR estimating a budgetary saving in 2027–28 of just £35 million), with existing claims being reassessed no earlier than 2029. So any budgetary impact in the next few years can be expected to be modest.

Perhaps with the length of this timescale in mind, on 5 September 2023 the Secretary of State for Work and Pensions, Mel Stride, launched a consultation on a proposed set of changes to the soon-to-be-abolished WCA.[12] If implemented, these will reduce the threshold required in order for someone to be judged as able to prepare for work. Those affected would lose out financially (typically by almost £400 per month) and would also be required either to prepare for work or to search for a job in order to keep receiving their remaining UC. However, these changes would only apply to new claims and reassessments from 2025 and would become irrelevant once the WCA has been abolished (which is planned to happen in any case in 2029). But if successfully implemented, they could reduce spending in this intervening period.

However, it is worth noting that when reforms have been designed to deliver savings, they have often not delivered the reduction in spending that was hoped for. As the OBR concluded in 2019:

[10] https://ifs.org.uk/news/number-new-disability-benefit-claims-remains-high-todays-data-show-tentative-signs-easing.
[11] More details can be found in Kennedy, Hobson and Mackley (2023).
[12] https://www.gov.uk/government/news/government-announces-new-welfare-reforms-to-help-thousands-into-work.

> **'The cost of the "extra costs" disability benefits system has risen significantly over time, and both major reforms to the system – the introduction of DLA in 1992 and of PIP in 2013 – have ended up costing much more than expected. With DLA, that involved a deliberate expansion in coverage yielding a greater increase in the caseload and cost than had been predicted. With PIP, a reform intended to reduce spending has actually increased it.'**
>
> Office for Budget Responsibility, 2019

The assessment that the introduction of PIP increased spending is particularly stunning given that it was initially assumed in 2010 to deliver a 20% cut in both caseloads and spending – with the latter figure increased in 2012 to nearer 30%. Of course, any forecast uncertainty arising from the tightening of the WCA that the government is now consulting on can only be temporary as it is subsequently being abolished. And the permanent White Paper reform is not being motivated by a desire to deliver a substantial reduction in spending, which might reduce the risk of recent history repeating itself. But it is worth noting that this reform would lead to more benefit spending being loaded onto the health test for PIP which has, in recent years, been delivering the bigger percentage increase in successful claims and resulting spending.

4.7 Support for housing costs

Another area of social security spending where there is a clear risk that current policy will prove not to be sustainable and that public spending will end up higher than forecast is support for the housing costs of lower-income households. This is available through UC for most working-age households. Some working-age households – most obviously those who have not yet been moved over to UC, but also some other groups such as those in temporary or supported accommodation – are supported by housing benefit, as are those aged over the state pension age. For those getting support who reside in the private rented sector, the amount they can receive depends on the type of property they are deemed eligible for – for example, a couple with one child can be eligible for a two-bedroom property – and where they live, with those in more expensive areas generally being entitled to more.

In the current financial year, £30.9 billion is forecast to be spent on this support. This is forecast to grow in real terms by £1.6 billion to £32.5 billion in 2027–28, which equates to growth of 1.2% per year. Of this support, £19.6 billion goes to 3.6 million households in the social rented sector – implying an average award of £105 per week; while £10.7 billion goes to 1.9 million households in the private rented sector – implying an average award of £111 per week.

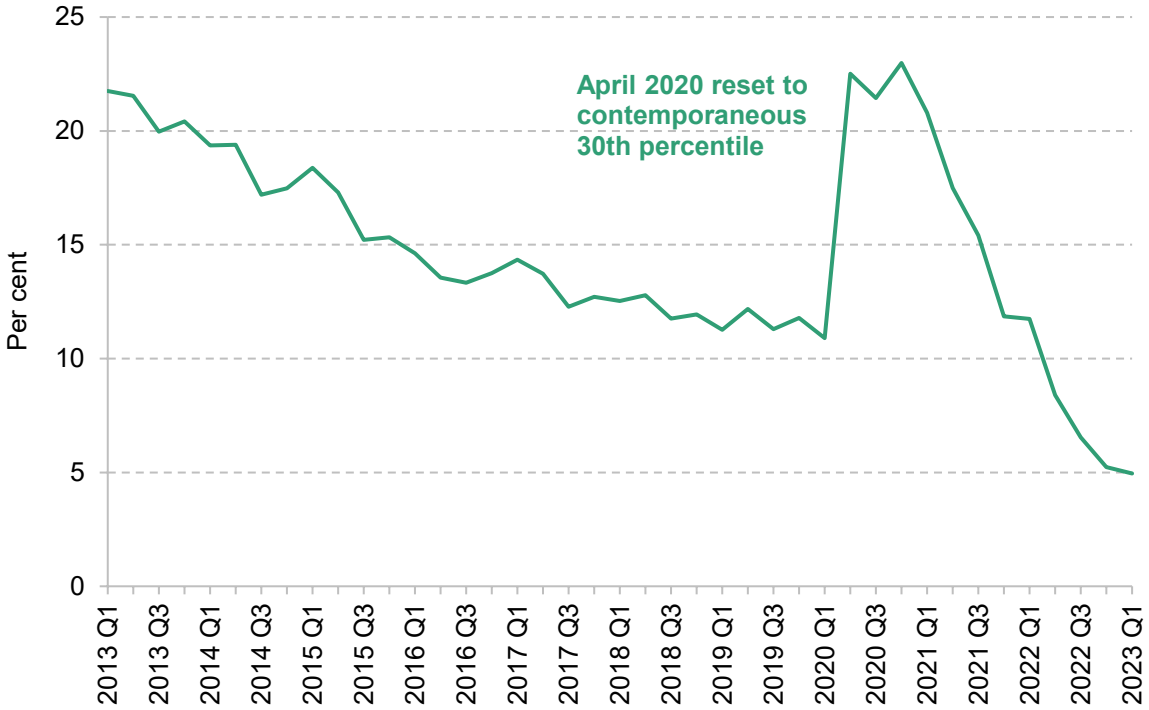
The policy that will be unsustainable, at least in the longer term, is how LHA rates are set. Up until April 2011, they were based on the contemporaneous 50th percentile of local rents (measured across properties not in receipt of housing support). In April 2012, this was reduced to the 30th percentile. For the seven subsequent years, LHA rates were annually uprated by a combination of CPI inflation, 1% and zero. This led to a growing gap between actual rents and the amount of housing support families could receive. Then, as part of the initial COVID-19 support package, LHA rates were reset at the contemporaneous 30th percentile. But since then they have been frozen again.[13]

This indexation policy leads to the odd outcome where support for housing costs varies across the country, but rather than varying according to differences in current rents it varies according to differences in rents in 2020. As rents have grown differentially since 2020, it means that it is possible to get greater support in some areas relative to others despite rents being lower. While there is a valid argument that we might not want to subsidise people more to live in more expensive areas, there is no good argument for why we would want to subsidise them more to live in cheaper areas – not least because cheaper areas might have fewer good jobs. To give a concrete example, the monthly LHA rate for a two-bedroom house is £837.50 in Newbury and £825 in Bristol despite the 30th percentile of rents being £850 in Newbury and £950 in Bristol (Ray-Chaudhuri and Waters, 2023).

The other consequence is that as rents rise over time, fewer rents can be covered in full by the support for housing formally provided in the system. This is illustrated in Figure 4.14, which shows the share of new rentals (as proxied by properties advertised on Zoopla) where the rent is at or below the LHA rate. Prior to the pandemic – and the policy uplift – this had fallen to 11%. It then peaked at 23% as LHA rates were returned to the contemporaneous 30th percentile. (That the share covered did not rise to 30% is not surprising as new rents are often more expensive than existing ones, perhaps as landlords are keen to retain existing good tenants and not risk having an empty property for a few months.) But as rents have recently increased sharply, the share of available rental properties that are advertised for the LHA rate or below has fallen to below 5%. It is clear that LHA rates cannot continue to be frozen forever; the only question is when they will need to be increased. Estimates from 2020 suggest that a 10% increase in LHA rates would add £1.1 billion to spending (Bourquin and Waters, 2020).

[13] See Wilson and Hobson (2021) for more details.

Figure 4.14. Share of private rental properties on Zoopla where full rents covered by housing benefit local housing allowance



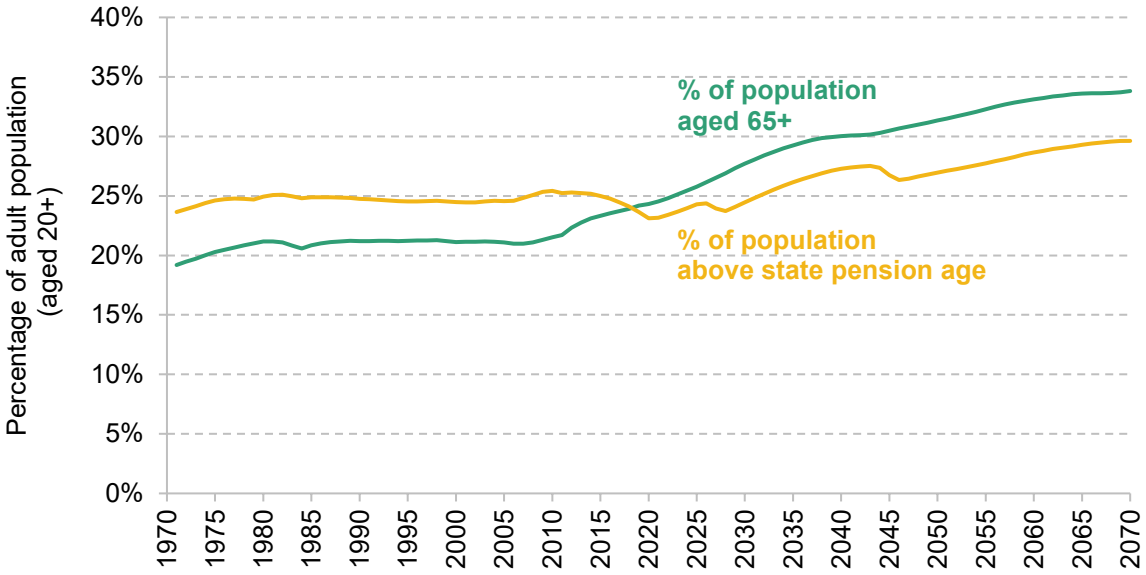
Source: Figure 4.11 of Waters and Wernham (2023).

4.8 Long-run pressures on pensions, health and social care

The chapter has focused so far on short-term risks to the public finances – risks that could crystallise over the next few years, or within the five-year forecast period. But a responsible government needs to think beyond the short term and beyond its medium-term fiscal target and ensure long-term fiscal sustainability as well. And, as we will show, some of these 'long-term pressures' are actually already materialising. For example, Figure 4.15 shows that increases in the state pension age have, until recently, stopped the share of the adult population aged over the state pension age from rising – despite the share of the population aged 65 and over increasing since around 2008. But from 2020 onwards, the share of the adult population aged over the state pension age is projected to rise.

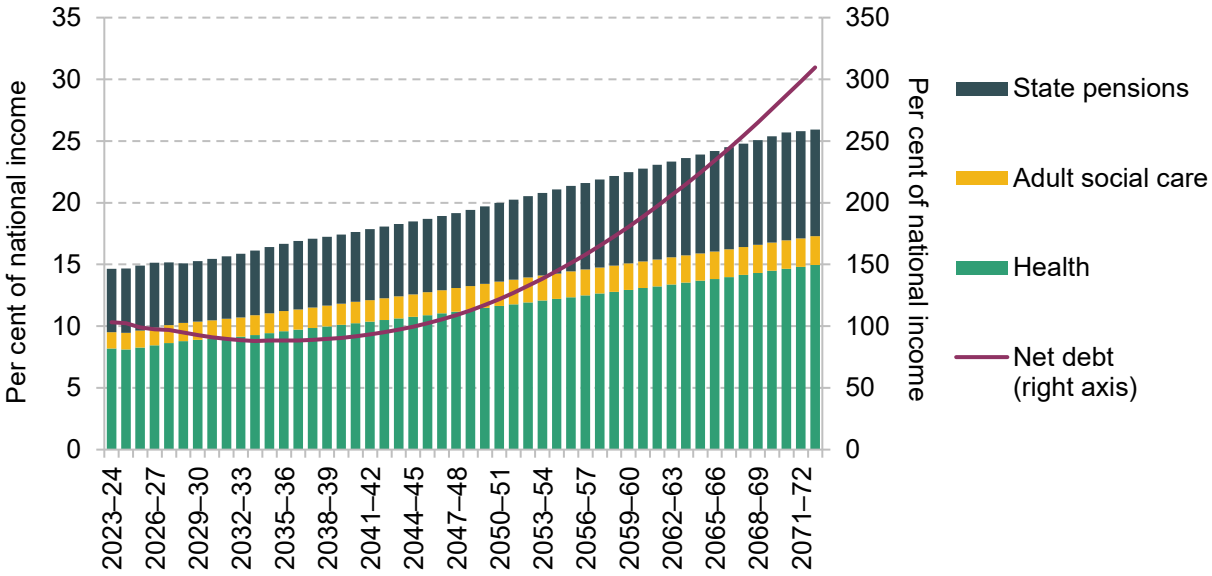
Official projections suggest that, under current policies, debt as a share of GDP is projected to increase exponentially in the long run. This is shown in Figure 4.16. One key driver of this dynamic is the pressure from an ageing population, which will lead to rising expenditure on pensions, health and social care. The demographic pressures are further exacerbated by rising costs of health and social care, and the estimated effect of the triple lock on pensions.

Figure 4.15. Percentage of the adult (aged 20+) population that is aged 65 or over, or is aged above state pension age, 1971 to 2020 (out-turn) and to 2070 (projected)



Source: Figure 13 of Cribb et al. (2023).

Figure 4.16. Official projection of ageing-related spending and resulting growth in debt



Note: In addition to the effect of ageing, the baseline projection includes the impact of other long-term developments such as declining employment rates, non-demographic cost pressures in health and social care, the effect of the triple lock on pensions, and the transition to net zero.

Source: OBR's July 2023 Fiscal Risks and Sustainability (detailed long-term fiscal projections, released September 2023).

As a result, ageing-related spending as a share of national income is projected to increase from just below 15% today to 20% in 2050 and to over 25% in 50 years' time. The increase from 15% to 20% of national income is equivalent to £137 billion in today's terms, which is around half the amount raised by income tax. Of the 5% of national income rise projected up to 2050, the biggest increase comes from spending on health (an increase of 3.4% of national income) followed by spending on state pensions (1.2% of national income). The latter is despite the state pension age being legislated to rise from 66 to 68 by the mid 2040s. Spending on adult social care and pensioner benefits are also projected to increase, while other spending categories are projected to fall as a share of GDP over the long term, mostly due to the cuts implied by the tight spending totals set out for 2025–26, 2026–27 and 2027–28 (see above), but also because of reforms that will reduce the generosity of public service pensions and falling pupil numbers (which are expected to reduce education spending).

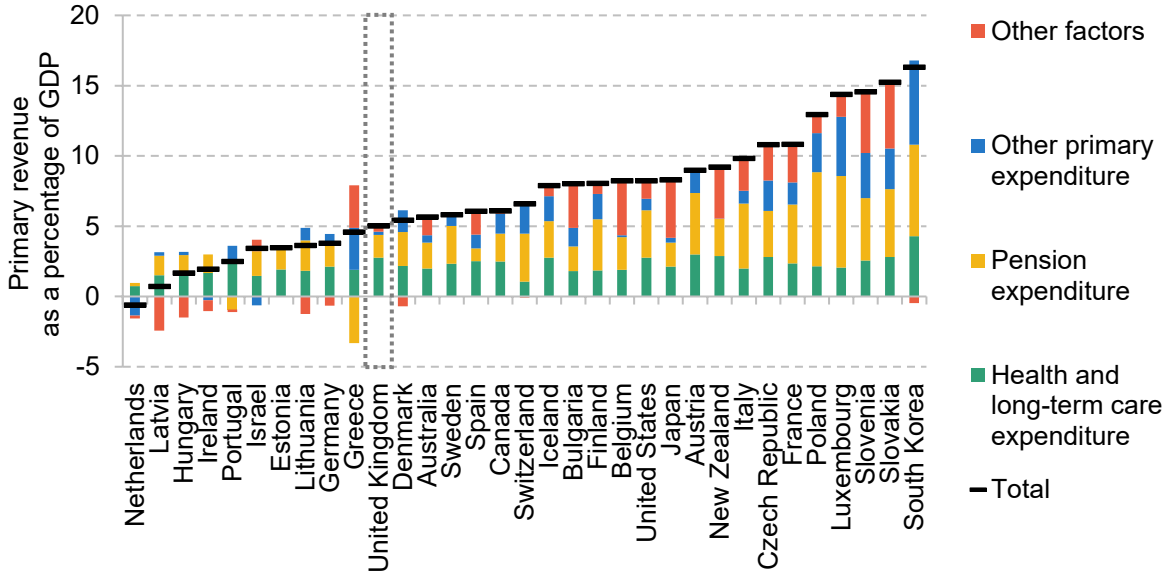
If these spending increases over coming decades are to be accommodated, then either spending would need to be cut back in other areas and/or measures would need to be put in place to increase tax revenues as a share of national income. The Office for Budget Responsibility (2023b) estimates that to keep the public sector net debt at its current level of around 100% of national income would require either a one-off tax rise or spending cut of 4.4% of national income in 2028–29, or tax rises or spending cuts worth 1.5% of national income to be made successively each decade.

How do the UK's long-term public finance pressures compare?

Even though the situation looks serious, substantial ageing pressures are present in many advanced economies, and the UK's situation actually appears quite modest relative to other countries. The OECD (Guillemette and Château, 2023) estimated long-term fiscal pressures for 33 countries using a consistent methodology and the UK ranked 11th-lowest in terms of the pressures faced (Figure 4.17) even though our position has slightly deteriorated since its last projection (Guillemette and Turner, 2021). The OECD estimates that UK government revenue will have to increase by around 5% of national income by 2060[14] in order to keep the debt stable in the long run (absent cuts to spending), compared with an average of over 7% of national income across OECD countries.

[14] This assumes a gradual adjustment over the projection period with a cap on overall fiscal consolidation of 1% of potential GDP in any single year. The estimate is between the OBR estimate of a one-off consolidation of 4.4% in 2028–29 and a gradual consolidation of 6% over a 40-year period.

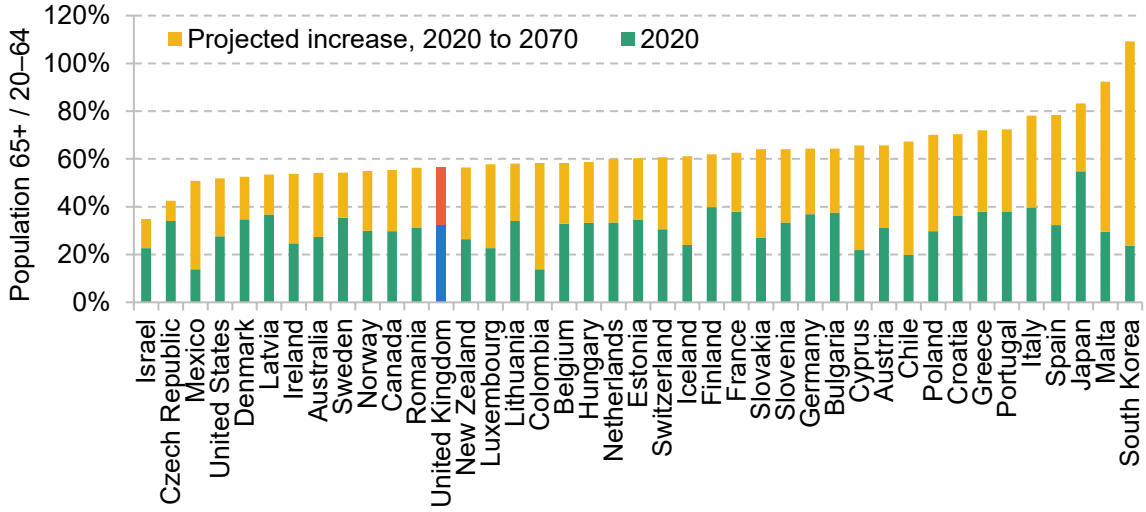
Figure 4.17. Ageing-related public finance pressures by source across countries



Note: The figure shows how the ratio of structural primary revenue to GDP must evolve between 2024 and 2060 to keep the debt-to-GDP ratio stable near its currently projected value over the projection period. The underlying projected growth rates, interest rates, etc. are from the baseline long-term scenario presented in Guillemette and Château (2023). The necessary change in structural primary revenue is then decomposed into specific spending categories based on the projected growth in spending as a share of GDP. The 'other factors' component includes adjustment to the initial fiscal position that must occur to stabilise the public debt ratio, projection of net interest payments, and changes in the differential with economic growth.

Source: Guillemette and Château, 2023.

Figure 4.18. Old-age dependency ratio



Note: Old-age dependency ratio is defined as the ratio between the number of people aged 65 and over and the number of people aged 20–64 years.

Source: UN World Population Prospects 2022.

The key driver of the UK's position relative to other countries is its more favourable demographic outlook. The old-age dependency ratio (defined here as the ratio between the number of people aged 65 and over and the number aged 20–64 years) is set to increase by 24 percentage points (ppt) in the next 50 years compared with an average increase of more than 30ppt in other countries (Figure 4.18). This still means that the ratio of adults aged under 65 to adults aged over 65 in the UK will fall from approximately three-to-one today to below two-to-one by 2070; but this is actually the 8th-most-favourable change out of EU and OECD countries and is not driven by the fact that the UK has already aged. Our old-age dependency ratio is currently at the average of the selected countries and has experienced the 9th-smallest increase since 1980 (Table 4.2). As was shown in Figure 4.15, the share of adults aged 65 and over in the UK was actually relatively stable over the three decades to 2008.

Table 4.2. UK's ageing-related fiscal pressures and old-age dependency ratio relative to other OECD countries

	UK	OECD average	UK rank
	Debt-stabilising increase in revenue, 2024 to 2060 (% of national income)		
Total	5.0	7.2	11/33
Of which:			
Health and long-term care expenditure	2.8	2.2	26/33
Pension expenditure	1.6	2.6	9/33
Other primary expenditure	0.2	1.3	7/33
Other factors	0.4	1.1	15/33
	Old-age dependency ratio		
1980	26.8%	20.1%	38/41
2020	32.3%	31.0%	21/41
Change, 1980 to 2020	5.5ppt	10.9ppt	9/41
2070	56.4%	62.6%	13/41
Change, 2020 to 2070	24.1ppt	31.6ppt	8/41

Note: The total debt-stabilising increase in revenue is decomposed into specific spending categories based on the projected growth in spending as a share of GDP. The 'other factors' component includes adjustment to the initial fiscal position that must occur to stabilise the public debt ratio, projection of net interest payments, and changes in the differential with economic growth. Countries are ranked in ascending order for each indicator. A higher rank indicates a worse situation from a public finance perspective. For the fiscal pressures, 33 selected OECD countries included in the projection are used in the ranking. For the old-age dependency ratio, a broader set of OECD and EU countries is used.

Source: Guillemette and Château (2023) and UN Population Prospects 2022.

However, the UK is differentially exposed in different areas of ageing-related spending. Public pensions form a relatively smaller share of public expenditure in the UK than other countries. Together with less severe demographic pressures, the projected increase in spending on public pensions is moderate relative to other countries as a result (Figure 4.17 and Table 4.2).

On the other hand, spending on healthcare forms a significant portion of public spending in the UK. In turn, we face the 8th-largest (out of 33) projected increases in healthcare spending in the long run (Figure 4.17 and Table 4.2). As well as population ageing, this projected increase in health spending is also driven by strong projected growth in non-demographic cost pressures – namely, lower productivity growth in the healthcare sector than in the rest of the economy, adoption of new cost-increasing technologies, and rising prevalence of more complex and chronic conditions.

Risks around the OBR's long-term public finance projections

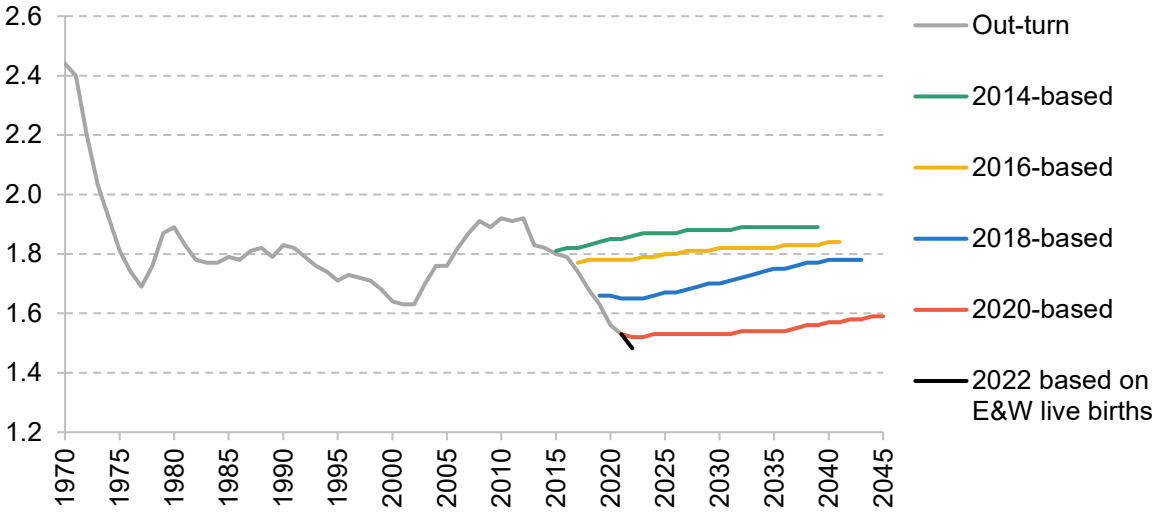
There are additional risks not incorporated into the latest baseline OBR projections, which could act to decrease or increase the fiscal pressures relative to those projections. On the one hand, there has been a significant increase in net immigration. The number of people moving to the UK minus those leaving reached over 600,000 in 2022, driven mostly by rising non-EU immigration. Even though a significant portion of the increase came through humanitarian and asylum routes (most notably from Ukraine), the number of non-EU work- and study-related immigrants has been steadily increasing since 2021. This has led both the Office for National Statistics (ONS) and the OBR to revise the expected long-term net migration upwards to 245,000 a year, though the future trends remain uncertain. Permanently higher immigration would boost the share of working-age people in the population and thus ease the burden of increasing dependency ratios and the associated public finance pressures.

Working in the opposite direction, together with other advanced economies, we have seen significant and continuous declines in fertility rates in recent years. Each successive population projection by the ONS, which serves as the foundation for the OBR fiscal projections, assumes that this decline will stop in the near future and partially reverse in the longer term (Figure 4.19). However, the latest birth statistics in England and Wales show a 3.1% decline in live births in 2022 compared with the previous year – the lowest level in two decades. If total fertility rates for the whole UK evolve similarly, further downward revisions can be expected when the new long-run population projections are released. Given the unusually large gap between the growth in live births and total fertility rates in 2021, this revision is likely to be even more substantial than the figure presented here and the fertility rate could reach as low as 1.4 for 2022.

Persistently lower fertility rates today will reduce the spending on education and child-related healthcare and welfare transfers in the near future as there are fewer children to support. However, when these children reach adulthood, there will be a lower working-age population in

future decades. As the number of pension-age people is unlikely to change substantially in the next 50 years, this will make the financing of increased public spending on health and pensions even more challenging over this period.

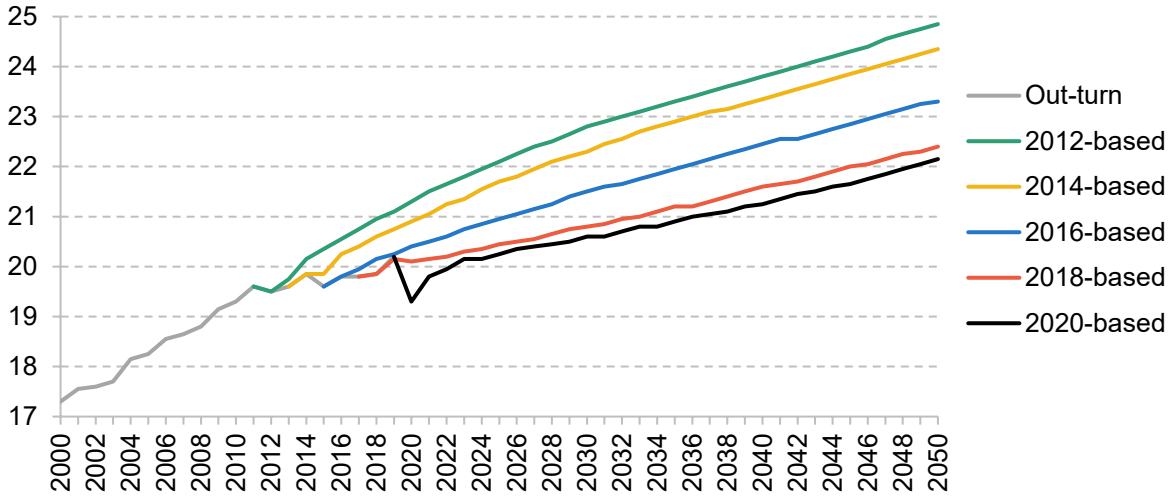
Figure 4.19. Fertility rate projections and out-turn



Note: The estimate for 2022 is based on the recent decline of 3.1% in live births in England and Wales (E&W) in 2022, assuming that the population of adult women remains unchanged.

Source: ONS National Population Projections.

Figure 4.20. Life expectancy at age 65: projections and out-turn



Note: Average period life expectancy at age 65 for males and females. This measures how much longer a person who is 65 years old in the given year can expect to live given the current mortality rates. Improvements in mortality rates over the course of one's life might be expected to add a further 1.0 to 1.5 years to this measure.

Source: ONS National Population Projections.

Together with lower fertility rates, there has been a steady slowdown in the growth in life expectancy since 2010, with each successive population projection optimistically expecting a quick return to a trend similar to that observed in the past decades (Figure 4.20). Lower life expectancy is bad news in general, but it is favourable for the public finances because it reduces the population of pension-age adults and thus ageing-related spending. However, the latest update (in 2022) revised the population of pensioners in 50 years' time downwards by only 8%, which is more than outweighed by the negative effects of declining fertility in the long run. In addition, to the extent to which slower growth in longevity leads to the state pension age being pushed up less quickly, this will also offset at least some of the long-term fiscal savings.

4.9 Conclusion

In the March Budget, the official forecasts – which are meant to be a central estimate of the outlook for the public finances over the next five years – suggested that public sector net debt would stabilise and then, just about, fall as a share of national income between 2026–27 and 2027–28. On this basis, the Chancellor was complying with his fiscal mandate.

Whether these forecasts are really based on actual government policy is, at best, questionable. That is not to say that the OBR has done something wrong. It is constrained to take government policy as stated. The issue is the extent to which stated government policy is a good representation of actual government policy.

In the case of fuel duties, it is clear it is not. Actual government policy is perhaps best described as a charade along the lines of 'to always keep fuel duties at their current cash levels, while always pretending that in 12 months' time any "temporary" cuts to rates will be allowed to expire and the rate will be increased in line with inflation'. Incorporating this actual policy into the forecast would reduce projected revenues by £6 billion in 2027–28. The Chancellor has also said he wants to make his three-year 'full expensing' in corporation tax a permanent policy. This could increase borrowing by around £10 billion a year in the near term from March 2026, though this figure overstates what the long-run cost would actually be.

These are perhaps the clearest examples. But another is the plans for day-to-day public service spending beyond March 2025. While these imply overall spending continuing to rise, they are far tighter than the plans that were left in place by Mr Sunak when he was Chancellor just a year earlier. And more fundamentally, they do not appear to be consistent with a reduction in the government's appetite to spend. After taking account of commitments on the NHS workforce, the huge expansion of state-funded early-years childcare announced in the Budget, increased spending on defence and overseas aid and a likely protection of the schools budget, 'unprotected' departments would need to shoulder cuts of 1.5% per year, or £9.4 billion in

today's terms by 2027–28. It seems unlikely, to say the least, that this will be delivered. More likely, by the time we get to a Spending Review, the plans will be topped up; something that Conservative Chancellors have, on average, done to the tune of £14 billion per year at Spending Reviews seen since 2010. It is a similar story on investment spending on public services: Mr Hunt has pencilled in numbers that imply a cash freeze to spending in 2027–28, which would be £13 billion less than implied by the plans he inherited from Mr Sunak's 2022 Spring Statement. This is despite pressures for additional investment in areas such as defence, schools and hospitals and to support the transition to net zero.

These behaviours – where announced tax and spending policies are not aligned with what policy is actually likely to be – mean that the OBR's forecasts will no longer be a central forecast. This is harmful for transparency and makes scrutiny of fiscal plans even more difficult.

There are also several other policy risks to the public finances. A clear one relates to the plan to continue to freeze virtually all thresholds in the direct personal tax system. What started out as a four-year freeze to income tax thresholds to raise an estimated £8 billion is now a plan for a six-year freeze – and one that now applies to NICs thresholds as well as income tax – which we estimate would raise £52 billion in 2027–28. The Autumn Statement could see the Chancellor tempted to extend that for a further year, which would raise an additional £6 billion. This extended freeze is set to undo two-thirds of the increase in the personal allowance seen over the 2010s and bring the share of adults paying income tax up to the record two-thirds seen in 2007–08, and lead to almost 80% more adults paying higher (or additional) rates of income tax than had the freezes not been in place. This could put increasing pressure on government to end the freeze before 2027–28. Ending it one year early would reduce receipts in 2027–28 by around £5 billion.

There are also risks around spending on benefits for disabled people and those with health difficulties. Such spending has increased rapidly since the pandemic and this growth is actually forecast to accelerate. The risks – while large – may be two sided, i.e. it is possible spending will undershoot as well as overshoot these forecasts. There are also policy risks. Major reforms to incapacity benefits are planned. Previous attempts to reduce spending in these areas have been far from successful. But the most significant reform – set out in the White Paper in March – while radical and far from risk free, is not motivated by a desire to cut spending, which might reduce the risk of recent history repeating itself.

As well as greater honesty about policy settings over the next five years, the government also needs to set out a strategy for its approach to the longer-term challenges in the public finances. Ageing of the population together with other cost pressures is projected by the OBR to put upwards pressure on the health and state pension budgets. If accommodated, these will require sizeable tax rises or cuts to other spending to finance them. The UK's public finance challenge,

while difficult, does appear not to be as severe as that seen in many other OECD and EU countries. This is due to our relatively low level of state pension spending (with much greater reliance on private pensions) and more favourable demographic projections. There are some uncertainties here, though. Immigration projections have been revised up in the light of recent experience, which we would expect to strengthen the public finances, but the magnitude of such effects is very uncertain. Slowing increases in life expectancy at older ages will also be favourable for the public finances (though less so if the state pension age is raised more slowly as a result). Working in the other direction, it seems very likely that there will be yet another downwards revision to projected fertility rates.

The big picture here is that the long-term public finance challenges – for example, around age-related spending pressures and around the transition to net zero – have been known to be substantial for years. The precise scale of the challenges is inherently uncertain, but their existence is not. And some of the challenges that we typically think of as 'long-term' are increasingly posing fiscal risks in the here and now. Rather than further delay and obfuscation, a detailed and coherent government strategy for tackling these pressures over coming decades is urgently needed.

References

Adam, S. and Stroud, R., 2019. A road map for motoring taxation. In C. Emmerson, C. Farquharson and P. Johnson (eds), *The IFS Green Budget: October 2019*. https://ifs.org.uk/books/road-map-motoring-taxation.

Atkins, G. and Lanskey, L., 2023. The OBR's forecast performance. Office for Budget Responsibility, Working Paper 19, https://obr.uk/download/working-paper-no-19-the-obrs-forecast-performance/?tmstv=1692112893.

Banks, J., Karjalainen, H. and Waters, T., 2023. Inequalities in disability. IFS Deaton Review of Inequalities, https://ifs.org.uk/inequality/inequalities-in-disability/.

Bourquin, P. and Waters, T., 2020. The temporary benefit increases beyond 2020-21. In C. Emmerson, C. Farquharson and P. Johnson (eds), *The IFS Green Budget: October 2020*. https://ifs.org.uk/books/temporary-benefit-increases-beyond-2020-21.

Cribb, J., Emmerson, C., Johnson, P., Karjalainen, H. and O'Brien, L., 2023. Challenges for the UK pension system: the case for a pensions review. IFS Report 255, https://ifs.org.uk/publications/challenges-uk-pension-system-case-pensions-review.

Department for Work and Pensions, 2023. Transforming support: the Health and Disability White Paper. https://www.gov.uk/government/publications/transforming-support-the-health-and-disability-white-paper.

Guillemette, Y. and Château, J., 2023. Long-term scenarios update: incorporating the energy transition. OECD Economic Policy Paper 33, forthcoming.

Guillemette, Y. and Turner, D., 2021. The long game: fiscal outlooks to 2060 underline need for structural reform. OECD Economic Policy Paper 29, https://www.oecd.org/economy/growth/scenarios-for-the-world-economy-to-2060.htm.

HM Treasury, 2010. Budget June 2010. https://www.gov.uk/government/publications/budget-june-2010.

HM Treasury, 2023. Spring Budget 2023. https://www.gov.uk/government/publications/spring-budget-2023.

Kennedy, S., Hobson, F. and Mackley, A., 2023. Proposals to abolish the work capability assessment. House of Commons Library Research Briefing 9800, https://commonslibrary.parliament.uk/research-briefings/cbp-9800/.

Office for Budget Responsibility, 2019. Welfare trends report – January 2019. https://obr.uk/wtr/welfare-trends-report-january-2019/.

Office for Budget Responsibility, 2023a. Economic and fiscal outlook – March 2023. https://obr.uk/efo/economic-and-fiscal-outlook-march-2023/.

Office for Budget Responsibility, 2023b. Fiscal risks and sustainability – July 2023. https://obr.uk/frs/fiscal-risks-and-sustainability-july-2023/.

Ray-Chaudhuri, S. and Waters, T., 2023. Freezes in housing support widen geographic disparities for low-income renters. IFS Comment, https://ifs.org.uk/articles/new-data-shows-continued-freezes-housing-support-widen-geographic-disparities-treatment.

Treasury Select Committee, 2023. Fuel duty: fiscal forecast fiction. Eleventh Report of Session 2022–23, https://committees.parliament.uk/publications/33621/documents/183338/default/.

Waters, T. and Wernham, T., 2022. Reforms, roll-outs and freezes in the tax and benefit system. In C. Emmerson, P. Johnson and B. Zaranko (eds), *The IFS Green Budget: October 2022*. https://ifs.org.uk/publications/reforms-roll-outs-and-freezes-tax-and-benefit-system.

Waters, T. and Wernham, T., 2023. Housing quality and affordability for lower-income households. IFS Report 260, https://ifs.org.uk/publications/housing-quality-and-affordability-lower-income-households.

Wilson, W. and Hobson, F., .2021. The rent safety net: changes since 2010. House of Commons Library Research Briefing 05638, https://researchbriefings.files.parliament.uk/documents/SN05638/SN05638.pdf.

Zaranko, B., 2023. A look under the hood of Labour's investment plans. IFS Comment, https://ifs.org.uk/articles/look-under-hood-labours-investment-plans.

5. Chancellors' responses to economic news

Carl Emmerson, Isabel Stockton, Sam van de Schootbrugge and Ben Zaranko (IFS)

Key findings

1. Forecasts for government borrowing are uncertain and subject to frequent revision. **Over the last four decades, borrowing has turned out higher than the median forecast for that year on three-quarters of occasions.** In other words, forecasts have tended to underestimate the future level of borrowing. This was particularly the case just prior to periods of economic distress, such as the early 1990s, late 2000s and the pandemic, but is true generally.

2. **Forecast revisions often reflect economic 'news' since the previous forecast and unfortunately, since 2010, there has been more bad news than good.** Across the 26 fiscal events since 2010, there have been just 8 occasions on which economic news has meaningfully improved the borrowing outlook, versus 12 where bad news has materially worsened the outlook. On 6 occasions, there was no meaningful change.

3. **Chancellors often adjust their tax and spending plans in response to these forecast changes.** For example, if the economic and fiscal outlook improves, it could be that the Chancellor is able to lower taxes and/or increase spending and still be on track to meet his or her stated objectives for borrowing or debt. Conversely, if the outlook deteriorates, the Chancellor might decide to raise taxes and/or cut spending to return forecast borrowing back towards the desired level.

4. **It matters whether or not Chancellors respond symmetrically to good and bad news.** If Chancellors respond asymmetrically to underlying changes in borrowing forecasts – for example, by spending windfall gains in the case of good news, but accommodating increased borrowing when bad news comes along – then over time,

borrowing will systematically diverge from that forecast. This represents a non-trivial risk to the accuracy of borrowing forecasts, and potentially to fiscal sustainability.

5. **Chancellors have not responded symmetrically to good and bad economic news since 2010.** On the 12 occasions when economic conditions deteriorated meaningfully between fiscal events, Chancellors have planned to offset just over a quarter (27%) of the medium-term borrowing increase, on average, by reducing the planned level of spending and/or announcing tax rises for implementation by the final year of the forecast period. Meanwhile, when economic conditions improved, Chancellors have planned to offset an average of 60% of the windfall through higher spending and/or lower taxes.

6. **This tendency for Chancellors to loosen more than they tighten in response to economic news led to tens, and possibly hundreds, of billions of additional borrowing over the 2010s.** Public sector net debt at the eve of the pandemic could have been between 3% and 11% of GDP lower – with a central estimate of 7% – had Chancellors responded symmetrically to underlying forecast changes over the preceding decade.

7. **Asymmetric policy responses mean that the Office for Budget Responsibility (OBR)'s central forecast is not actually 'central'.** Based on Chancellors' past responses to shocks, and assuming good shocks are as likely to come along as bad ones, we estimate that **forecast government borrowing in 2027–28 should be 1.4% of GDP higher than under the OBR's central forecast**. In 100,000 simulations of future shocks and subsequent policy responses, **we estimate that there is just a one-in-ten chance that borrowing turns out lower than the OBR forecast**. This is symptomatic of a wider issue facing the OBR: the requirement to take government policy as stated, rather than exercise its judgement based on past government behaviour, can make it more likely that the forecast underestimates borrowing.

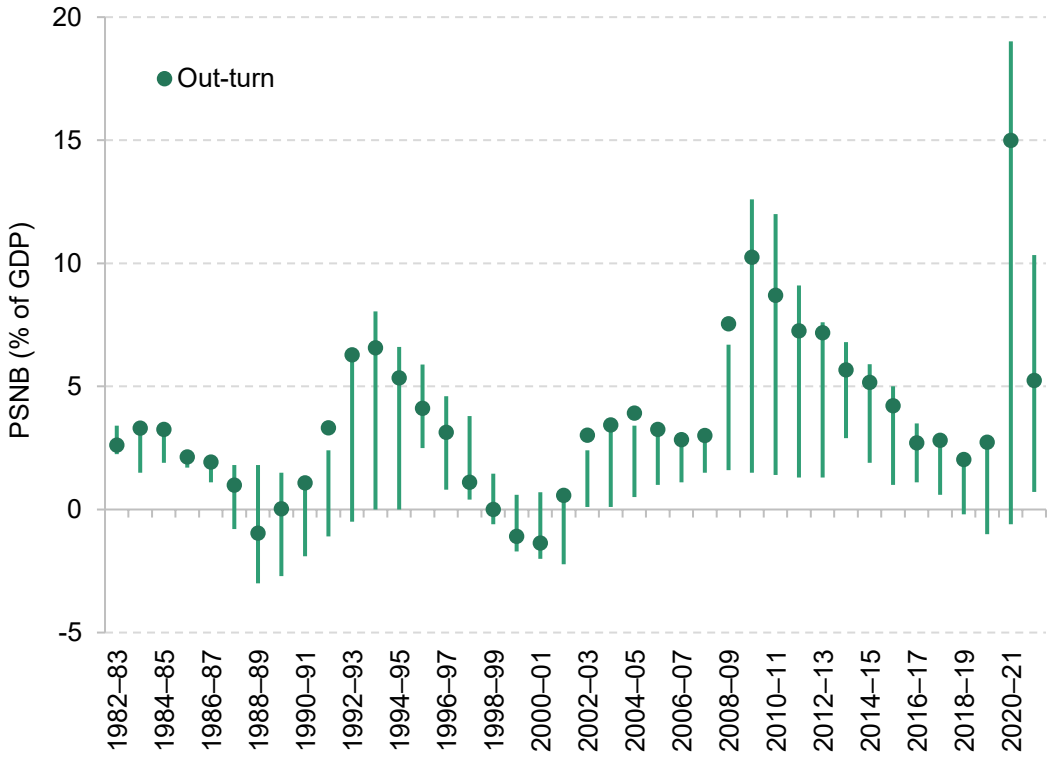
8. **When economic conditions improve, Chancellors since 2010 have tended to top up their spending plans, rather than use any 'windfall' to cut taxes. When conditions worsen, they have tended to cut back their spending plans *and* raise taxes. Combined, this tendency has acted to increase the size of the state over time.** We estimate that if future Chancellors respond to economic news in the same way as their predecessors, the forecast for total government spending should be 1.6% of GDP higher in 2027–28 than under the OBR's central forecast. In contrast, forecast government revenues would be just 0.2% of GDP higher in our simulations.

9. **In the short term, Chancellors tend to announce a policy loosening (i.e. higher spending and/or lower taxes) regardless of whether there has been an underlying economic improvement or deterioration.** This may be appropriate – depending on the nature of the economic news – but risks a further 'ratcheting' effect if short-term loosenings are implemented but medium-term tightenings are ever-postponed.

5.1 Introduction

Governments make policy choices on the basis of forecasts. This is particularly true of fiscal policy, where governments often target borrowing or debt at some future date. These forecasts are subject to considerable uncertainty, however, and are subject to frequent revisions – especially when the economy gets buffeted by shocks.

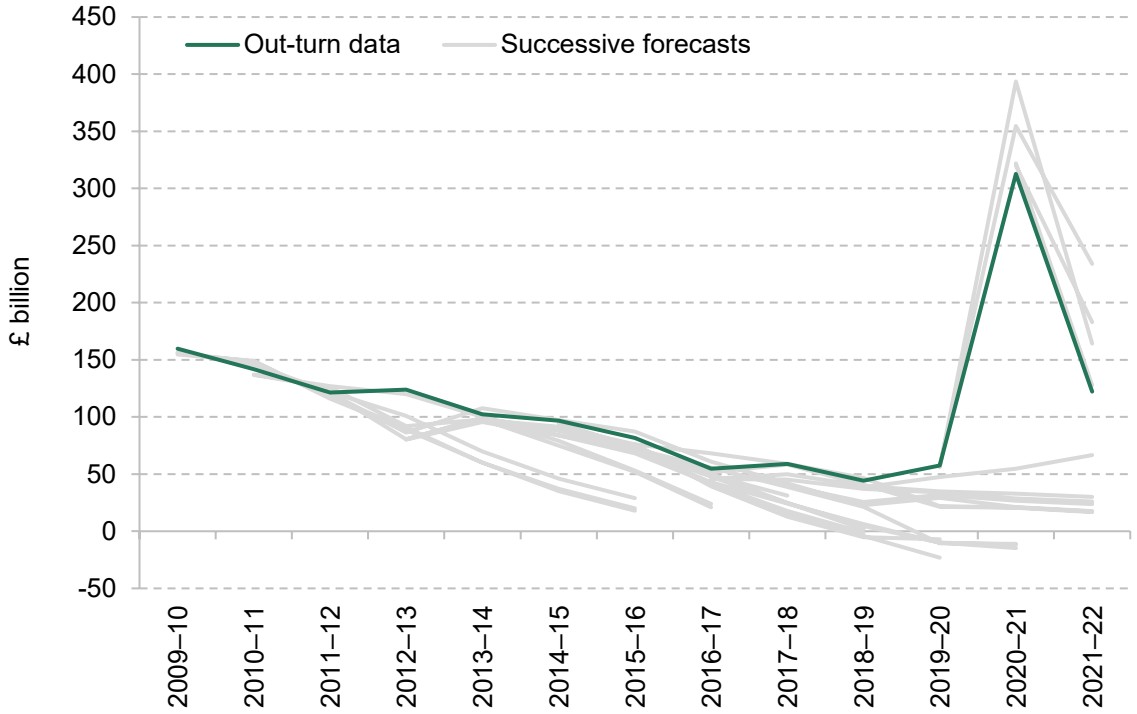
Figure 5.1. Public sector net borrowing forecasts and out-turn since 1982



Note: Each line represents the range between the highest and lowest forecast for PSNB. From 1982–83, there are at least five forecasts for each fiscal year. Forecasts produced prior to 2010 were made by the Treasury. Out-turn data are the latest available data published in March 2023.

Source: Office for Budget Responsibility, 'Historical official forecasts database', https://obr.uk/data/; authors' calculations.

Figure 5.2. Successive Office for Budget Responsibility borrowing forecasts since 2009–10 and the subsequent out-turn



Source: Chart 1.2 of Atkins and Lanskey (2023).

This is illustrated in Figure 5.1, which shows the range of forecasts for public sector net borrowing (PSNB) made for each year since 1982–83. In periods of unexpected economic turmoil, the range of forecasts is particularly wide. For the 2009–10 financial year, for example, the level of forecast borrowing ranged from 1.5% of GDP (in the March 2005 Budget) to 12.6% of GDP (in the December 2009 Pre-Budget Report); in the event, borrowing amounted to 10.2% of GDP. Even in less turbulent times, forecasts can still be revised by a per cent or more of GDP: the average forecast error over the past 40 years was 1.8% of GDP.[1]

Figure 5.1 also shows that borrowing tends to come in towards the top end of the forecast range. In other words, there is a tendency for most borrowing forecasts to be overly optimistic. Since 1982–83, borrowing has turned out higher than the median forecast on three-quarters of occasions. The early 1990s, the 2000s and the 2010s stand out as periods during which forecasts were particularly optimistic. The tendency for forecasts made during the 2010s to underestimate borrowing, and subsequently to be revised upwards, is illustrated in Figure 5.2.[2]

[1] This refers to the absolute mean forecast error (which was 5.6% of GDP for 2009–10, the example year given in the text). The average range (between the lowest and highest forecasts for a financial year) was 4.3% of GDP (and 11.1% of GDP in 2009–10).

[2] The Office for Budget Responsibility (OBR) recently concluded that its tendency to underestimate government borrowing largely reflects underestimates of the future level of government spending by departments (Atkins and Lanskey, 2023).

As Chancellors prepare ahead of each fiscal event, they are provided with a new set of forecasts, which contain information about how the outlook has changed since the last fiscal event. These changes can be thought of representing 'good' or 'bad' economic news. Chancellors often adjust their tax and spending plans in response to this news. For example, if the economic and fiscal outlook improves, it could be that the Chancellor is able to lower taxes and/or increase spending and still be on track to meet his or her stated objectives for borrowing or debt. Conversely, if an adverse event occurs and the outlook deteriorates, the Chancellor might choose to raise taxes and/or cut spending to get (the forecast level of) borrowing back towards his or her desired level.

It matters whether or not Chancellors respond symmetrically to good and bad news. If Chancellors respond asymmetrically to underlying changes in borrowing forecasts – for example, by spending windfall gains in the case of good news, but allowing borrowing to increase when bad news comes along – then over time, borrowing will systematically diverge from the forecast.[3] This represents a non-trivial risk to the accuracy of OBR borrowing forecasts, and potentially to fiscal sustainability.

A particularly blatant example of this pattern of asymmetric behaviour – previously highlighted in the 2018 IFS Green Budget – came during Philip Hammond's period as Chancellor. His statements indicated that he would view forecast improvements and deteriorations rather differently.

In the Autumn 2017 Budget, he cited a 'balanced approach' when responding to a deterioration in the forecast:

> **'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.'**
>
> Philip Hammond's Autumn Budget speech, November 2017

That is, he said that he would allow borrowing to rise following a forecast deterioration ('use some of the headroom'). Then, in the following Spring Statement (2018), he said:

[3] The direction of the divergence will depend on the direction of the asymmetry.

> **'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.'**
>
> Philip Hammond's Spring Statement speech, March 2018

In other words, he indicated that if the outlook for the public finances improved, he would be minded to spend any such improvement. So, in one instance, the Chancellor is saying that he will allow borrowing to increase following a forecast deterioration, rather than offset the increase through policy measures. Yet in the subsequent instance, he is promising to spend the windfall should the public finances improve. In this chapter, we examine how successive Conservative Chancellors have reacted to underlying changes in public sector net borrowing forecasts since 2010. We begin in Section 5.2 by documenting those underlying changes and defining what we mean by good and bad economic news.[4]

Next, we document the discretionary policy responses implemented by Chancellors over the last 13 years (Section 5.3). In Section 5.4, we then match the policy responses to the underlying changes to examine the relationship between the two.

We show that this relationship is asymmetric, in that Chancellors respond differently to good and bad news. In Section 5.5, we consider the possible implications for the OBR's forecasts for borrowing and the size of the state over time. Section 5.6 concludes.

5.2 Changes to public finance forecasts since 2010

Since 2010, the Office for Budget Responsibility has published independent forecasts of fiscal aggregates, such as receipts and spending. They are produced and shared with HM Treasury ahead of each fiscal event, making them a key input into government decision-making.

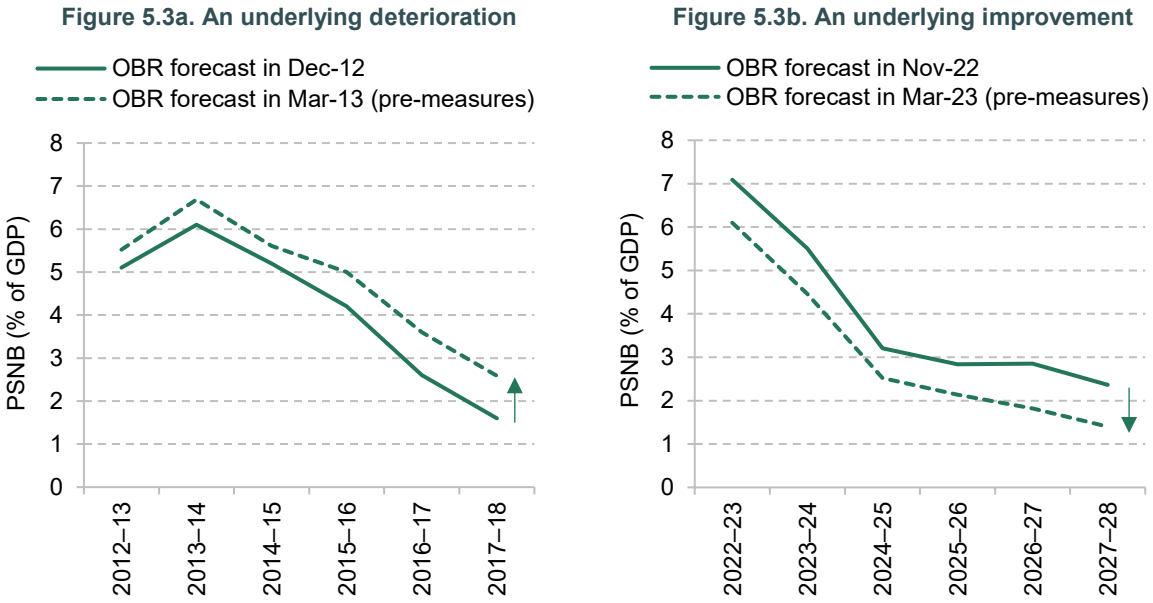
[4] Our focus is on medium-term policy responses to medium-term 'shocks' or economic news, and we abstract away from the short term. The appropriate policy response to an economic shock depends on the nature of that shock – particularly in the short term, where policies are, appropriately, often set with factors other than fiscal sustainability in mind. In the medium term, there is a far stronger case for considering fiscal sustainability in the design of policy, and – partly for that reason – a stronger case to be made that responses ought to be symmetric.

Box 5.1. Underlying changes: definitions and examples

According to the OBR's definition, 'underlying changes' include revisions to its economic forecasts, and judgements about how the public finances will perform in a given state of the economy. They can also include the effect of changes in out-turn data and changes to the amount policy measures announced at previous fiscal events are expected to cost or yield.

Figure 5.3 provides two examples of an underlying forecast revision – one of an underlying deterioration and the other of an underlying improvement. It shows how, under the latest economic assumptions, borrowing would evolve absent any new policy measures being introduced.

Figure 5.3. What is an underlying change in public sector net borrowing?



Note: The figure on the left-hand side (right-hand side) is an example of an underlying deterioration (improvement). A medium-term shock is classified as an improvement or deterioration based on the size of the final-year pre-measures forecast change relative to the previous OBR forecast.

Source: Office for Budget Responsibility, 'Forecast revisions database', https://obr.uk/data/; authors' calculations.

In March 2013, underlying conditions increased the borrowing outlook relative to the December 2012 Autumn Statement (Figure 5.3a). This raised the pre-measures forecast for 2017–18 (the final year of the forecast) by 1.0% of GDP from 1.6% of GDP to 2.6%.

In contrast, the latest OBR forecast (March 2023) shows an underlying improvement (Figure 5.3b). By 2027–28 (the final year of this forecast), prior to any new policy measures, PSNB was forecast in March 2023 to be 1.0% of GDP lower than in the previous November 2022 forecast (1.4% of GDP versus 2.4%).

Our focus in this chapter is on forecasts for public sector net borrowing as a percentage of GDP. A limit on borrowing is one of the government's current fiscal targets, and it is a salient measure of the overall tightness of fiscal policy.

Importantly, at each fiscal event, in addition to providing new forecasts for borrowing, the OBR publishes data on revisions made to past forecasts. These forecast revisions are decomposed into underlying changes (see Box 5.1), policy changes announced since the forecast was made (see Box 5.2 later) and statistical classification changes. We use changes to the underlying borrowing forecast (i.e. those not caused by classification changes or subsequent policy changes) as a proxy measure for the shocks hitting the economy. If, for instance, the labour market was performing unexpectedly strongly (e.g. with a greater number of people in work than expected), that would, all else being equal, lead to higher tax receipts and a reduction in the forecast level of borrowing.

We focus solely on documenting the policy responses to medium-term shocks – that is, underlying changes to the level of borrowing in the final year of the forecast horizon.[5] These changes may either increase the borrowing outlook as a percentage of GDP (a 'deterioration', or 'bad news') or decrease it (an 'improvement', or 'good news').

There may also be no news: since 2010, there have been six fiscal events when the final-year change was small – between –0.25% and +0.25% of GDP – which we classify as meaning there was 'no change' in the borrowing outlook (Figure 5.4).

Across the 26 fiscal events since 2010, then, the government has faced 20 sizeable medium-term shocks. There have been somewhat more deteriorations (12) than improvements (8). These deteriorations have also, on average, been larger (+1.1% of GDP) than improvements (–0.7% of GDP). Across those 20 fiscal events, the mean underlying change was a 0.4% of GDP increase in borrowing. Across all 26 fiscal events (i.e. including those with no material change), the mean underlying change was 0.3% of GDP and the total sum of all underlying changes since 2010 amounts to an 8.0% of GDP increase in the final-year borrowing forecast. In other words, there has been more bad than good economic news since 2010.

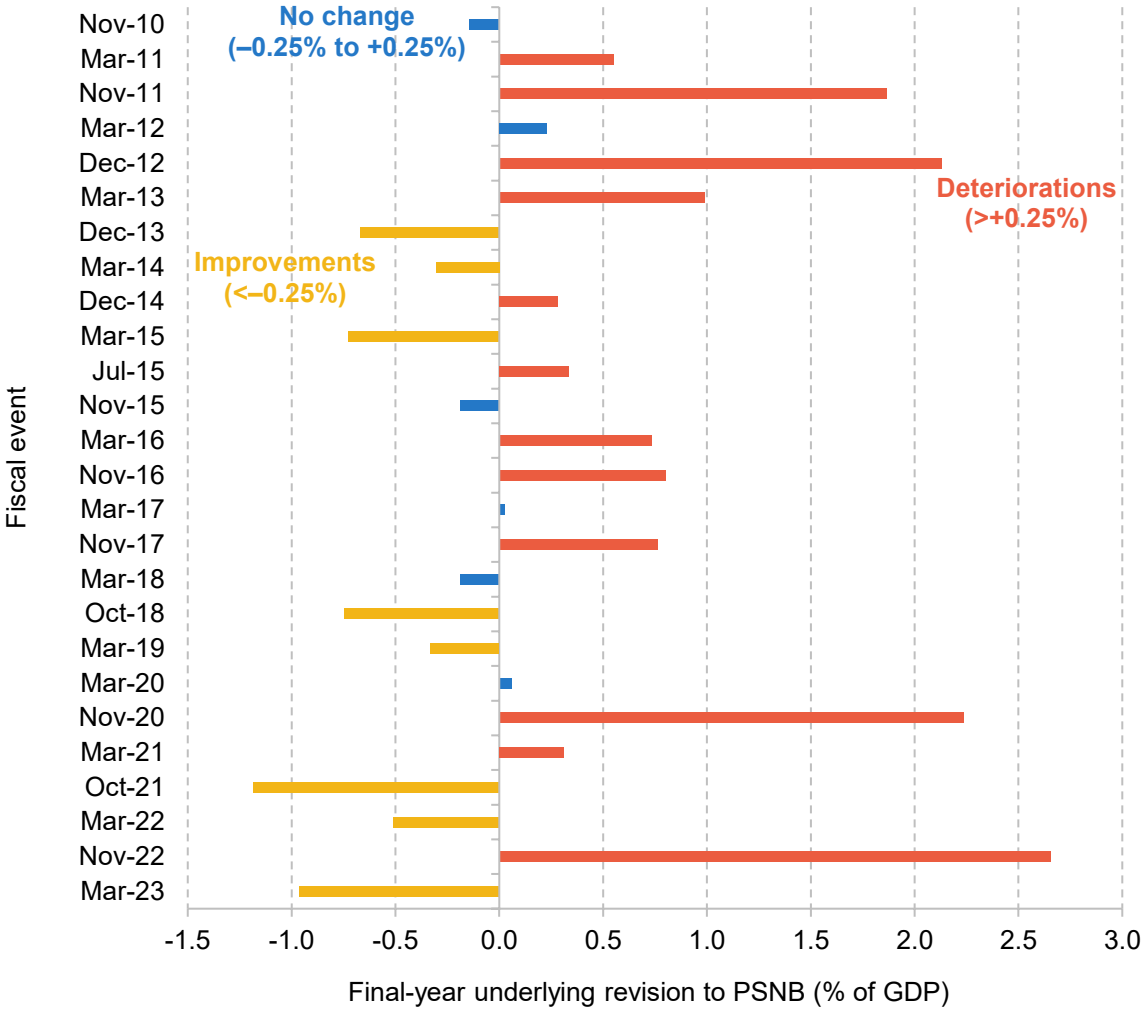
The largest negative shock occurred in November 2022, following a sharp increase in energy prices and interest rates.[6] The largest positive shock occurred in October 2021, during the turbulent and highly uncertain COVID period. To avoid our results being influenced by the

[5] When calculating the underlying change at date T, we compare the pre-measures PSNB forecast at T with the post-measures PSNB forecast at T–1. Then, when calculating the underlying change at date T+1, we compare the pre-measures forecast at T+1 with the post-measures forecast at T.

[6] Note that this is the largest negative *medium-term* shock. The immediate fiscal impact of the COVID-19 shock was far greater, but as of November 2020 was expected to be largely temporary, with a smaller medium-term impact on borrowing.

uncharacteristic nature of both shocks and policy responses during the pandemic, we exclude the November 2020, March 2021 and October 2021 fiscal events from our main analysis.[7]

Figure 5.4. Underlying medium-term changes by fiscal event



Note: All values denote the underlying change in the final year of the forecast period. November 2020 combines the forecast revisions made in the Fiscal Sustainability Report and Summer Economic Updates, as well as those in the November 2020 fiscal event.

Source: Office for Budget Responsibility, 'Forecast revisions database', https://obr.uk/data/; authors' calculations.

These shocks to the public finances are typically driven by changes in receipts rather than changes in spending (see 'Automatic stabilisers and underlying changes' in the appendix). This is true regardless of whether the change is an underlying improvement or deterioration. This result is not particularly surprising: large chunks of government spending are fixed in cash terms

[7] Our headline analysis is robust to the inclusion of the pandemic period (see Table 5.1). The appendix contains a further discussion of the COVID-19 period.

(such as public service budgets) and/or are relatively invariable to the state of the economy (e.g. spending on the state pension), whereas tax revenues are typically more cyclical. It suggests that our measure of 'economic news' is indeed capturing changes to the (forecast) state of the economy.

5.3 Discretionary policy announcements by fiscal event

Chancellors – or at least Chancellors who make it to a fiscal event with a new set of OBR forecasts – take fiscal policy decisions in light of the underlying changes we described in the previous section. These policy choices are discretionary. That is, they are made based on the judgement of policymakers and are the result of an active decision, rather than happening automatically (see Box 5.2).

The OBR estimates the impact of the discretionary government decisions announced at each fiscal event on its borrowing forecasts. If the policy response increases the final-year borrowing forecast relative to the pre-policy-measures forecast, policy has 'loosened'. If it decreases it, policy is said to have 'tightened'.

Box 5.2. What do we mean by a discretionary policy change?

Borrowing plans can change as a result of discretionary or non-discretionary policy. The latter, often referred to as the automatic component of policy, varies as a result of developments that are largely outside of the government's control. For example, if economic conditions deteriorate, we are likely to see reduced revenues from taxes on incomes, spending and profits. This would potentially come alongside higher unemployment and therefore more benefit claimants, causing government expenditure to rise. All of this would happen without any active decision from policymakers.

In this analysis, we focus on changes in PSNB forecasts that are the result of changes in discretionary policy. These refer to the active decisions by the government to change budgets, rates or rules in the tax system. For example, in the March 2023 Budget, the government made an active decision to expand the generosity of childcare support for working parents, and to scrap the lifetime allowance for private pension saving – all discretionary decisions. The same Budget saw an increase in forecasts for spending on disability benefits (see Chapter 4), but this reflected a steep rise in claimant numbers and was not due to a discretionary policy decision.

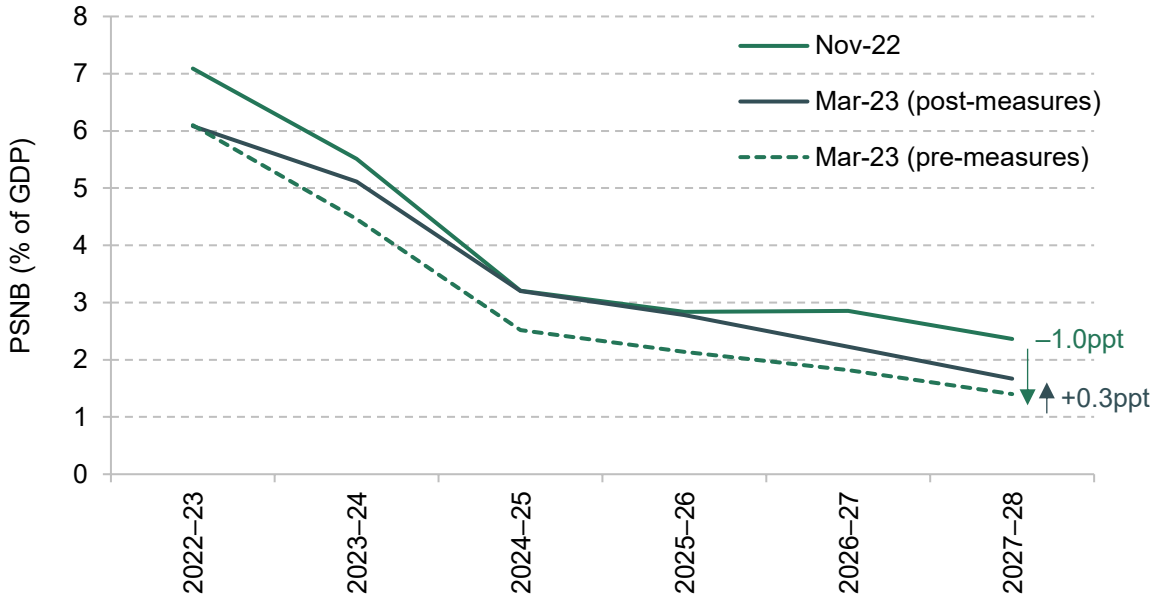
To isolate the effect of these discretionary government decisions on the borrowing forecast, the OBR categorises the following as a policy response, net of indirect effects:

- **Scorecard measures**: policy measures presented on the Treasury's scorecard table.
- **Non-scorecard measures**: policy changes that the Treasury has chosen not to present in the scorecard.
- **Changes to departmental expenditure limits**: policy changes above and beyond the OBR's judgement about underspending against plans or neutral switches of spending between departmental expenditure limits (DELs) and annually managed expenditure (AME) within total managed expenditure.

In Box 5.1, we provided an example of an underlying improvement in the borrowing forecast between Chancellor Jeremy Hunt's Autumn Statement in November 2022 and his Spring Budget in March 2023. At the latter, the OBR's pre-measures forecast for borrowing in 2027–28 was 1.4% of GDP, instead of the 2.4% previously thought – an improvement of 1.0% of national income.

In response, the government announced policies, such as the expansion of government-funded childcare, that the OBR estimated would reverse 30% of that pre-measures improvement by 2027–28 (Figure 5.5).We refer to this increase relative to the March 2023 pre-measures forecast as a policy 'loosening', even though it still leaves borrowing below what had been forecast in November 2022.

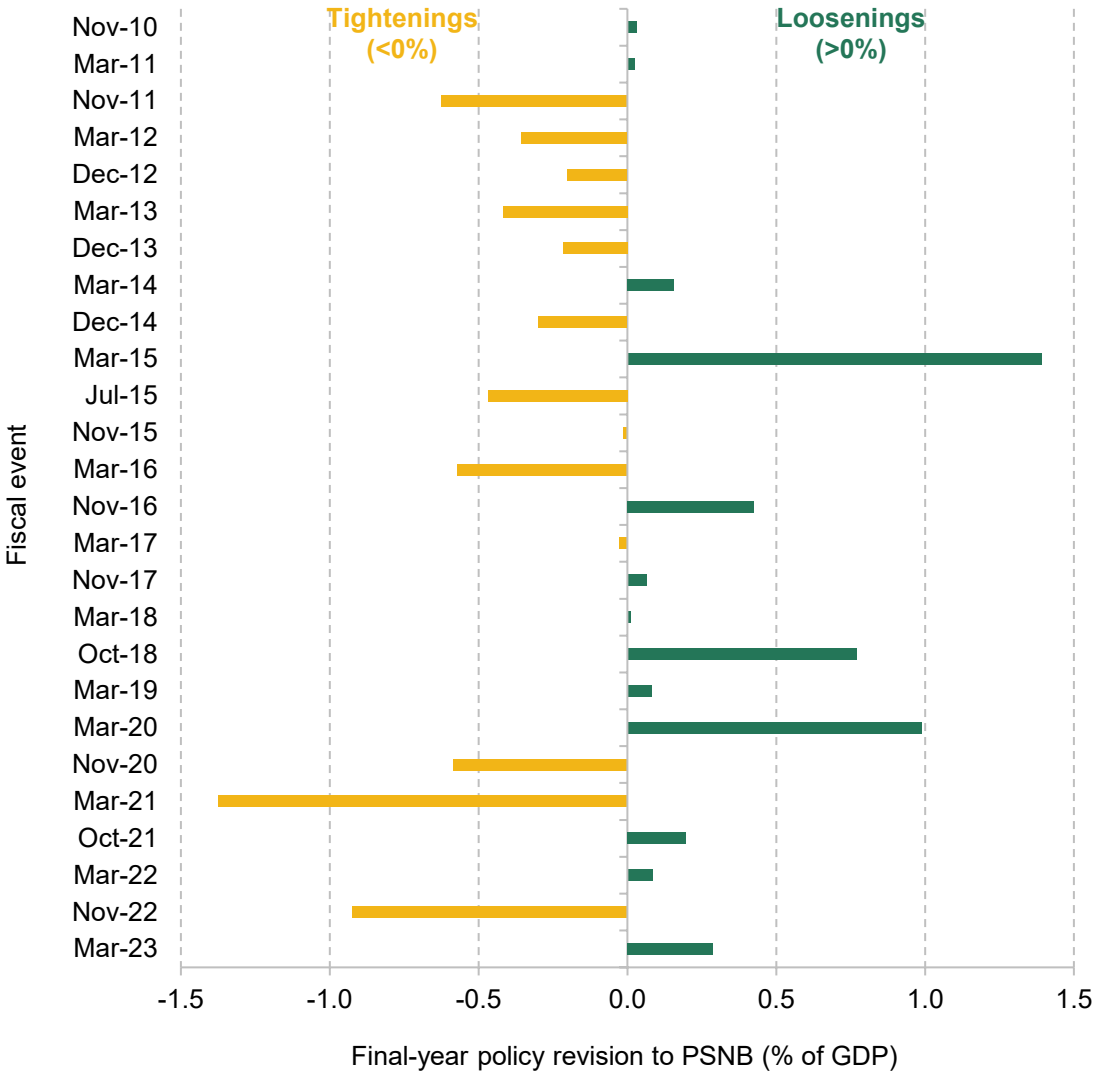
Figure 5.5. Example of a medium-term policy loosening: the Spring 2023 Budget



Note: Dark green (dark grey) arrows represent changes in the forecast due to underlying (policy) changes. The dark grey upward arrow reflects an announced policy loosening, while the dark green downward arrow reflects an announced policy tightening.

Source: Office for Budget Responsibility, 'Forecast revisions database', https://obr.uk/data/; authors' calculations.

Figure 5.6. Discretionary medium-term policy changes by fiscal event



Note: All values denote the impact of policy announcements in the final year of the forecast period (and so do not include policy measures that only have short-term impacts, such as the emergency pandemic measures announced in 2020). Green bars represent a policy loosening, i.e. the government has increased borrowing relative to the pre-measures forecast. Yellow bars denote a policy tightening relative to the pre-measures forecast.

Source: Office for Budget Responsibility, 'Forecast revisions database', https://obr.uk/data/; authors' calculations.

Across all 26 fiscal events since 2010, there have been as many policy tightenings as loosenings (Figure 5.6). After excluding the six fiscal events where the underlying change (or 'shock') has been categorised as 'no change', this remains the case: there have been 10 tightenings and 10 loosenings.[8]

[8] Recall that, over the same period, there were 12 instances of a forecast deterioration (bad news) and 8 instances of a forecast improvement (good news).

Taking the entire period since 2010, the average policy adjustment in absolute terms is 0.4% of GDP, about half the size of the average underlying change in absolute terms and equivalent to around £10 billion in today's money.[9] And although there were as many policy loosenings as policy tightenings, the tightenings were larger on average. As a result, the total sum of all policy adjustments since 2010 amounts to a cumulative tightening of 1.6% of GDP.[10] In other words, the net impact of all policies announced since 2010 has been an overall tightening of the fiscal stance. That reflects the fact that Chancellors have had to respond to considerably more bad economic news than good news over that period. It does not, as we will show, mean that Chancellors have been inclined to tighten more than they loosen in response to unexpected news; it instead says more about the nature of the news experienced since 2010.

The largest tightening of the period was announced in March 2021 by then-Chancellor Rishi Sunak and included an increase in the main rate of corporation tax from 19% to 25% and a freeze in income tax thresholds. In fact, the tightening as we measure it here understates the eventual tax rise from this announcement, as inflation has since turned out much higher than expected and the freeze in thresholds has raised substantially more (see Chapter 4 and Waters and Wernham (2022)).

Outside of the COVID period, the largest tightening over the period since Autumn 2010 occurred in November 2022. This contained substantial cuts to planned spending beyond March 2025 and coincided with the largest deterioration in underlying conditions.[11] Meanwhile, the largest loosening occurred in March 2015, just a few weeks prior to the general election of that year, when then-Chancellor George Osborne changed his spending assumption for the final year of the forecast (2019–20), which implied a £20 billion increase in spending plans for that year.

5.4 Do Chancellors respond symmetrically to good and bad shocks?

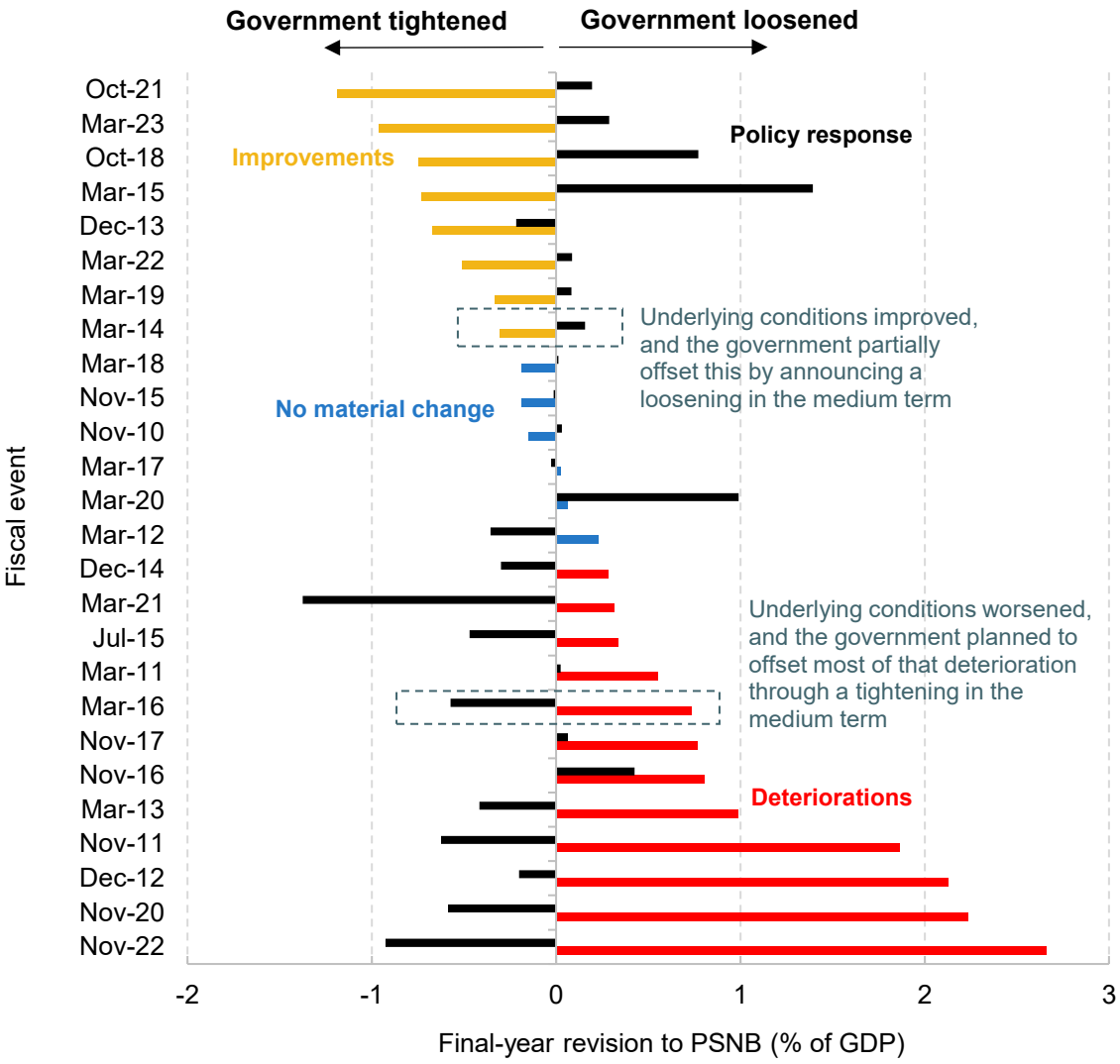
We now combine the data on changes in underlying conditions with the data on discretionary policy responses, to examine whether Chancellors respond symmetrically to good and bad news about the public finances.

[9] After excluding the fiscal events with no material underlying forecast change, the average policy adjustment was slightly larger: 0.5% of GDP, or around £12 billion in today's terms.

[10] If we look just at the 20 fiscal events where there was a material underlying forecast change, the cumulative policy adjustment was a tightening of 2.2% of GDP.

[11] Note that this tightening is calculated relative to the March 2022 Spring Budget, not relative to the September 2022 'mini Budget', which was held without an accompanying OBR forecast. The tightening also includes a range of tax-raising measures (such as the extension of the energy profits levy), but does not include the reversal of the 'mini Budget' tax cuts.

Figure 5.7. Medium-term policy response by fiscal event, 2010 to 2023



Note: Values denote the change in the final year of the forecast period. Coloured bars represent the medium-term shocks by fiscal event. Black bars represent the subsequent policy responses by fiscal event, where positive (negative) values imply a final-year forecasted tightening (loosening) relative to the pre-measures forecast.

Source: Office for Budget Responsibility, 'Forecast revisions database', https://obr.uk/data/; authors' calculations.

Figure 5.7 plots all of the underlying changes alongside their associated policy responses, at each fiscal event over the last 13 years. It can be seen that policy loosenings tend to follow underlying improvements, and policy tightenings tend to occur after deteriorations. This is as we might expect: when economic conditions worsen, medium-term policy adjusts to offset some of the increase in borrowing, and vice versa. In 90% of cases when underlying conditions improved (a positive shock), policy was loosened; in 75% of cases when underlying conditions worsened (a negative shock), policy was tightened. Meanwhile, there is no clear association between

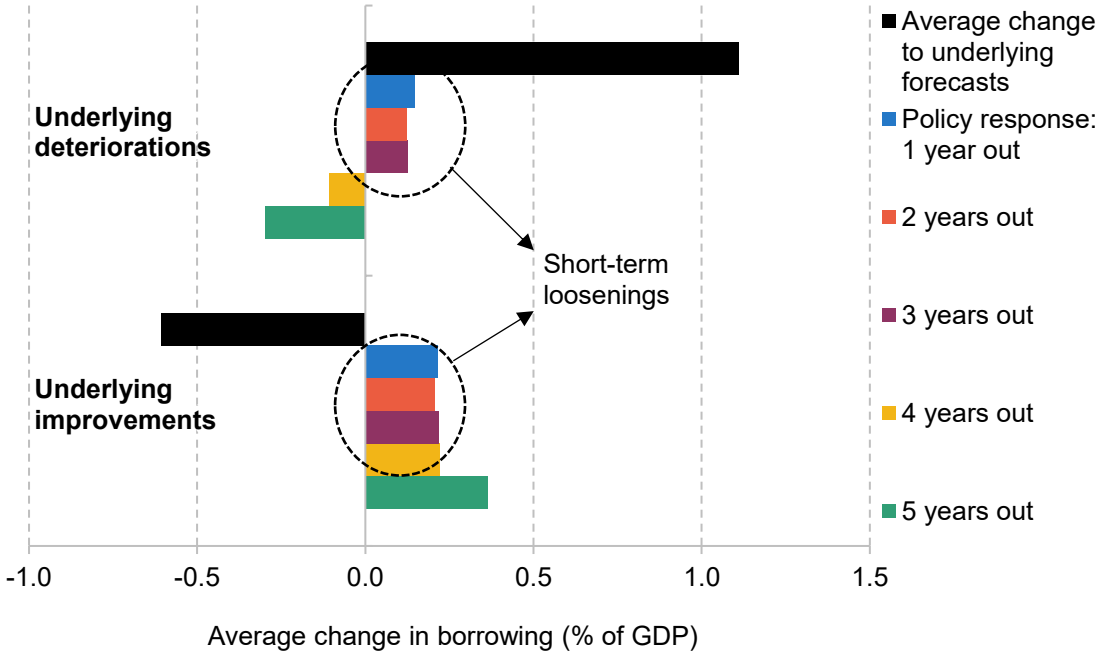
policy responses and underlying changes in the medium term in the absence of a significant shock.

At the top and bottom end of the figure, we have the largest improvement and deterioration, respectively. In November 2022, the government faced an underlying deterioration of 2.7% of national income in the final-year borrowing outlook. Mr Hunt subsequently announced policy to offset just over a third of the increase, or 0.9% of national income. Meanwhile, in October 2021, the government pencilled in an additional spend equal to one-sixth of the windfall gained from the underlying improvement.

Box 5.3. Differences over the forecast horizon

It has become common to describe UK Chancellors as behaving in the manner of St Augustine – 'Oh Lord, give me chastity, but do not give it yet'. The decision to tighten, but not just yet, appears to describe the policy responses of Chancellors to past deteriorations well over the last 13 years. The upper panel of Figure 5.8 shows that following a deterioration in the forecast, Chancellors tend to loosen policy in the short term and tighten it in the medium term. That is, they announce higher spending and/or lower taxes in the near term but promise – promise! – to cut spending and/or raise taxes in four or five years' time.

Figure 5.8. Average policy response in each year of the forecasting horizon



Note: Excludes fiscal events where there was no change in the underlying conditions. Negative (positive) values on the horizontal axis represent improvements (deteriorations) in the PSNB forecasts. The analysis also excludes fiscal events that occurred between November 2020 and October 2021 (inclusive).

Source: Office for Budget Responsibility, 'Forecast revisions database', https://obr.uk/data/; authors' calculations.

Notably, though, Chancellors tend to loosen short-term policy regardless of whether there has been good or bad news: the lower panel of Figure 5.8 similarly shows a tendency for policy to loosen in years 1 to 3 following a forecast improvement.

The broader concern is that having announced and implemented a short-term loosening, the medium-term tightening never actually materialises – perhaps because, by that point, some other short-term shock has come along. This Augustinian behaviour would lead to more borrowing and more debt compared with a situation with full follow-through. To give one example, at the November 2017 Budget, then-Chancellor Philip Hammond announced billions of extra spending in the short term (including billions extra for the NHS and to fund preparations for Brexit), but pencilled in extremely tight spending plans for 2022–23 (the then-final year of the forecast), reducing the borrowing forecast for that year by £5 billion in the process. In the event, those plans were not stuck to: spending turned out much higher (not least because the government announced tens of billions of pounds of additional funding for the NHS in June 2018). The short-term loosening happened. The medium-term tightening did not.

The OBR's recent analysis of its forecast performance concluded that its tendency to underestimate government borrowing derives primarily from a tendency to underestimate the medium-term level of government spending (Atkins and Lanskey, 2023). This is a manifestation of the same problem: Chancellors are prone to pencilling in very tight spending plans for the medium term, but those plans do not tend to be delivered. Instead, when it comes to a Spending Review (at which point department-by-department budgets have to be specified), spending plans tend to be revised upwards (Atkins and Lanskey, 2023).

While the medium-term policy response typically offsets medium-term changes in underlying conditions, short-term policy need not. Different shocks will require different immediate policy actions (e.g. in the immediate response to the pandemic). In the medium term, there is a much stronger case that policy should be symmetric and set with regard to fiscal sustainability. One concern, though, might be that Chancellors opt for short-term giveaways (appropriately or inappropriately) and at the same time promise medium-term tax rises or spending cuts which never actually come to be implemented. This phenomenon is described in Box 5.3.

Discretionary policy responses by type of forecast revision

To avoid any systematic effect on the path of the deficit, medium-term policy must respond symmetrically to medium-term shocks. One extreme case would be for Chancellors to offset entirely both good and bad shocks; another would be for them not to offset the shocks at all, and fully accommodate the increase or decrease in borrowing (which would, on average, leave borrowing unchanged over time as long as good and bad shocks were of offsetting magnitudes).

In reality, Chancellors' response functions lie between these two extremes. What matters for the presence or absence of a 'ratcheting' effect is whether those response functions are symmetric.

We find that, on average, around 60% of underlying improvements are offset through higher spending and/or lower taxes (a fiscal loosening), while just over a quarter (27%) of deteriorations are offset through lower spending and/or higher taxes (a fiscal tightening). If we include policy responses during the pandemic, these shares are 51% and 36%, respectively (Table 5.1).

Table 5.1. Estimated policy response functions since May 2010

Policy responses …	Deteriorations	Improvements
… excluding COVID-19	27%	60%
… including COVID-19	36%	51%

Note: Values denote the percentage of the underlying forecast change that is offset (on average) through discretionary policy changes: the 'policy response function'. We assume the government does not respond (i.e. 0%) to underlying changes between the values of +0.25% and –0.25% of GDP, which we classify as representing 'no change'.

Source: Office for Budget Responsibility, 'Forecast revisions database', https://obr.uk/data/; authors' calculations.

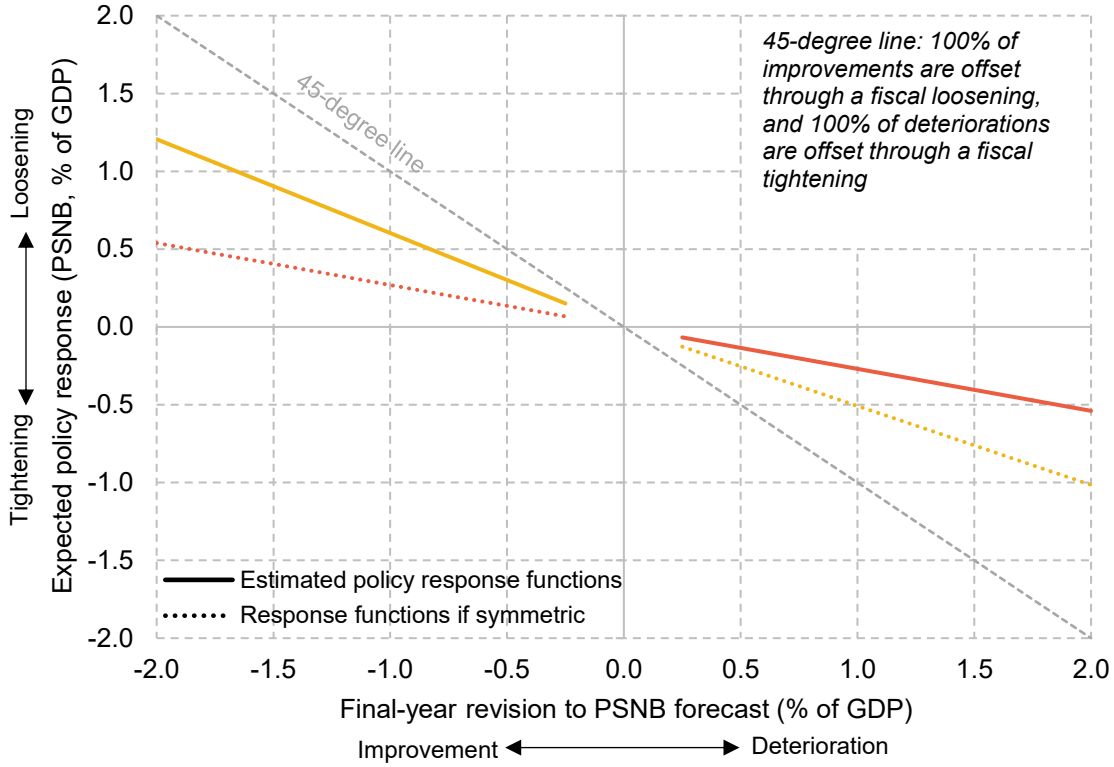
The asymmetry could be caused by multiple factors. Governments may decide to take longer than five years to offset deteriorations, especially if those deteriorations are large in the short term. Deteriorations may also be harder to offset, especially politically. The key thing is that, for whatever reason, Chancellors since 2010 have systematically tended to spend a bigger fraction of forecast improvements than they have offset forecast deteriorations.

If these responses persist into the future, we can adjust our expectations about how future policy may respond to shocks and what this might mean for borrowing. Figure 5.9 maps the expected policy responses to final-year revisions to PSNB forecasts. The steeper the line, the more policy reacts to shocks. On the 45-degree line, medium-term shocks are fully offset. On the horizontal axis, medium-term shocks are fully accommodated, with no policy response.

The estimated policy responses are solid lines, and perfectly symmetric versions of those responses are traced out as dotted lines. The asymmetry is clear: in the case of an improvement (left-hand side), a greater fraction of this is offset than in the case of a deterioration (right-hand side).

The tendency to spend a greater share of medium-term improvements than is offset for medium-term deteriorations will increase future borrowing relative to OBR forecasts (see Section 5.5). It will also have increased the amount the UK government has borrowed since 2010.

Figure 5.9. Average policy response functions



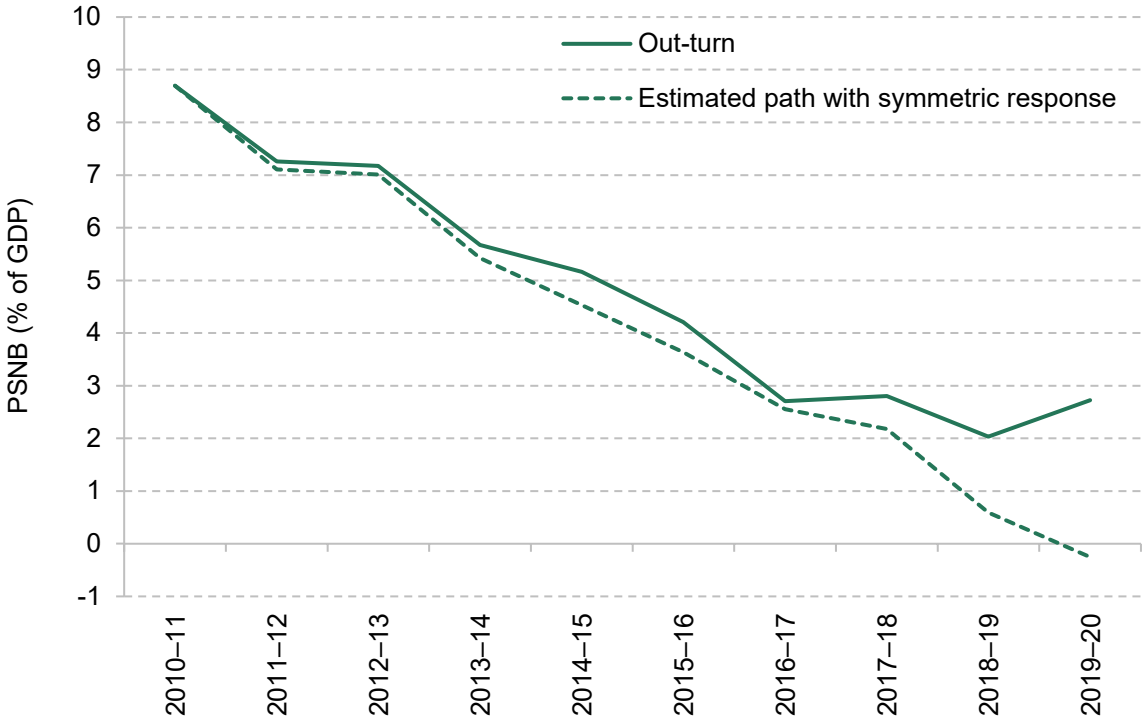
Note: Solid lines represent the estimated asymmetric policy response function. Dotted lines are perfectly symmetric versions of these estimated policy response functions. Negative (positive) values on the horizontal axis represent improvements (deteriorations) in the PSNB forecasts.

Source: Office for Budget Responsibility, 'Forecast revisions database', https://obr.uk/data/; authors' calculations.

Recall that Chancellors since 2010 have tended to spend 60% of any improvement and offset 27% of any deterioration, on average. Over the 2010s (2010–11 to 2019–20), we estimate that had Chancellors accommodated and offset medium-term shocks in equal measure, borrowing would have been between 0.4% and 1.4% of GDP lower per year on average (with the lower figure corresponding to the case where Chancellors offset 27% of both good and bad news, and the higher figure to the case where they offset 60% of good and bad news).[12] As described above, the overall impact of policy over the period was a cumulative net tightening of 1.6% of GDP, because bad shocks came along more frequently and were larger in magnitude. But had Chancellors behaved symmetrically, the net tightening would have been larger (either because of smaller loosenings in response to good news or because of larger tightenings in response to bad news).

[12] To produce a counterfactual path for borrowing, we construct a counterfactual 'symmetric' policy response for each fiscal event (applying a symmetric policy response function to the actual observed underlying 'shock' at each event). See the appendix for more details.

Figure 5.10. An estimated path for public sector net borrowing over the 2010s with a symmetric response to shocks



Note: The estimated path is calculated assuming symmetric policy responses to the actual shocks Chancellors have faced. When no underlying changes have occurred, we assume no policy response. During the COVID period, we use the actual policy responses. Classification changes are included. The symmetric policy response is an average of the responses if 60% and 27% of shocks are offset.

Source: Office for Budget Responsibility, 'Forecast revisions database', https://obr.uk/data/; authors' calculations.

Cumulatively, this equates to a substantial amount of additional public sector borrowing (depending on the assumptions used, between £75 billion and £260 billion extra over the course of the decade), which means a substantial amount of additional public sector debt. Figure 5.10 shows an example of a 'symmetric' path for borrowing (the average of the two cases above), compared with the out-turn.

Excluding any effects on the level of debt interest costs, our estimates suggest that public sector net debt in 2019–20 might have been between 3% and 11% of GDP lower had Chancellors behaved symmetrically over the 2010s, with a central estimate that debt might have been 7% of GDP lower.[13] This is not to suggest that borrowing *should* have been lower, or that the government *should* have been running a budget surplus by 2019–20 (as per Figure 5.10 or

[13] The range stems from the assumed policy response function in combination with more bad news than good: if Chancellors offset 27% of both good and bad news, we estimate that public sector net debt would have been around 3% of GDP lower in 2019–20 (roughly £75 billion); if they had offset 60% of good and bad news, we estimate that debt would have been around 11% of GDP lower (roughly £260 billion). Taking the (weighted) average gives a central estimate that debt might have been around 7% of GDP lower (roughly £150 billion).

indeed as was legislated by George Osborne after the 2015 general election). It might well have been optimal to plan for looser fiscal policy in the first instance. The point is that whatever the starting point – i.e. even if the post-2010 government had set out to run looser fiscal policy – the tendency to respond asymmetrically to subsequent good and bad economic news would have led to substantial amounts – potentially hundreds of billions – of extra borrowing over the course of the decade.

Tax and spending responses

Discretionary policy responses can be decomposed into changes in spending and tax changes. On balance, discretionary changes tend to be skewed towards spending adjustments, especially after an underlying improvement (Figure 5.11). In other words, following good news, Chancellors tend to increase spending rather than cut taxes (left-hand panel). Following bad news (right-hand panel), Chancellors tend to announce a combination of spending cuts and tax rises (with more of the former than the latter).

Combined, these findings suggest that Chancellors' responses to shocks have tended to increase the size of the state. We explore this in greater detail in Section 5.5.

Figure 5.11. Policy responses come predominantly through spending measures

Figure 5.11a. An underlying improvement

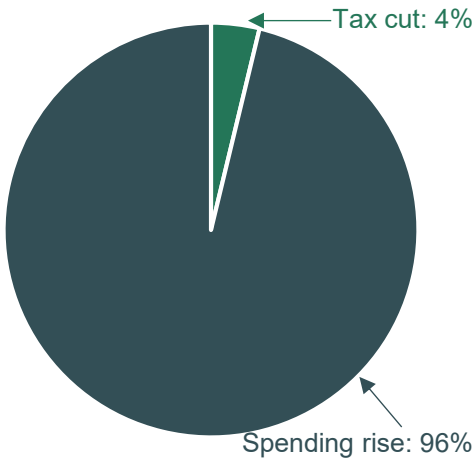
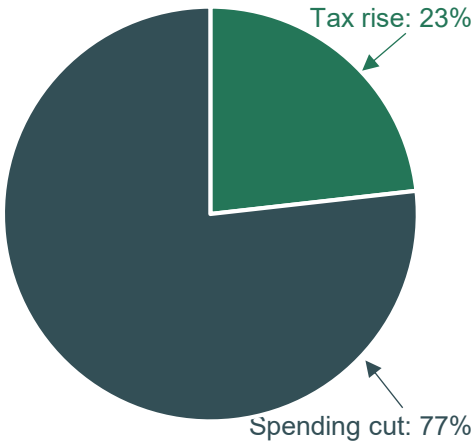


Figure 5.11b. An underlying deterioration



Source: Office for Budget Responsibility, 'Forecast revisions database', https://obr.uk/data/; authors' calculations.

5.5 Implications of an asymmetric response function

Implications for borrowing forecasts

Asymmetric policy responses to underlying changes in the PSNB forecasts will alter the outlook for future borrowing. The OBR is prohibited from incorporating its own judgements about future government policy in its forecasts. For example, it has to take stated government policy on fuel duties – that rates will increase each year in line with the RPI measure of inflation – as given in its central forecast, despite the clear evidence that the government has no intention of actually increasing them. Neither can the OBR make assumptions about future asymmetric policy responses to economic news. For that reason, its central forecast is likely to underestimate the future path of borrowing.

To quantify this, we apply our policy estimates to 100,000 randomly generated medium-term economic shocks (based on the distribution of past shocks), which we assume to represent good or bad news with equal probability.[14] We further assume that there continue to be two fiscal events per year, and that future Chancellors' policy response function to shocks is the same (on average) as those of Conservative Chancellors since 2010. This exercise thus provides an indication of what borrowing could look like if Chancellors behave in future as they have in the recent past.

Figure 5.12 shows the OBR's central forecast of PSNB, produced in March 2023.[15] In addition, we plot the estimated trajectory of borrowing based on our simulations, which build in asymmetric policy responses to future shocks. Lastly, as an alternative benchmark, we include a 'fully asymmetric' scenario, which is an extreme case where any windfall from a forecast improvement is fully spent, while deteriorations are not offset at all.

In the fully asymmetric case (denoted by the purple dashed line), borrowing could not fall below the forecast level (as any improvement in the forecast would be fully offset by a policy loosening, while all forecast deteriorations would be accommodated through higher borrowing). We estimate that this would put borrowing on a rising path after 2024–25. In contrast, under our estimated asymmetric policy response scenario (which is based on how Chancellors have

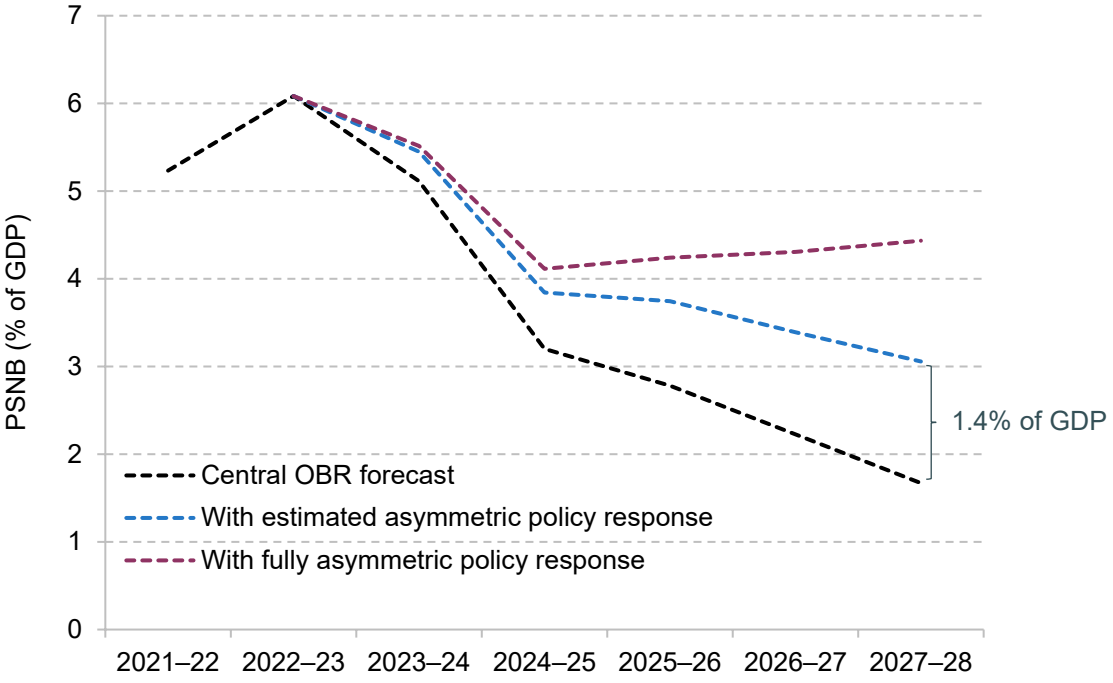
[14] Since 2010, bad news has come along more often than good news. It is beyond the scope of this analysis to predict the direction of future underlying changes. The assumption that good and bad changes can occur with equal probability is a useful benchmark – if the past pattern instead repeated itself, this would be an additional reason for borrowing to turn out higher than forecast.

[15] This forecast is equivalent to a 'symmetric policy response' scenario, on the assumption that good and bad news come along with equal probability and that good and bad news are (on average) of the same magnitude. It is also equivalent to a 'no policy response' scenario, whereby Chancellors ignore any underlying changes to the PSNB forecast, again under the assumption that good and bad news are equally likely.

behaved since 2010, excluding the COVID-19 period), borrowing would continue to fall after 2024–25 but would remain substantially higher than the OBR's central estimate.

The simulation exercise shows that treating public finance improvements and deteriorations differently can have a substantial impact on the path for borrowing. Our estimates, which anticipate policy responses to future shocks, would suggest that PSNB is likely to be around 1.4% of GDP higher in 2027–28 than under the OBR's forecast – equivalent to £36 billion in today's money.

Figure 5.12. Central borrowing forecasts under different assumptions



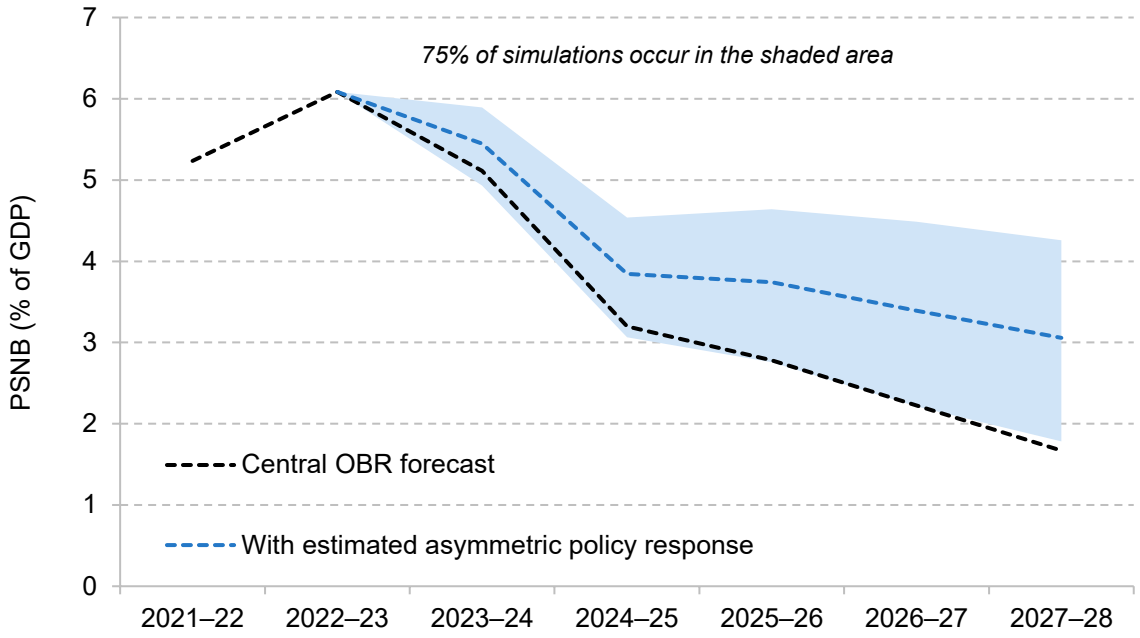
Note: Policy response series are based on 100,000 simulations of forecast errors and subsequent policy responses.

Source: Authors' calculations using Office for Budget Responsibility, 'Forecast revisions database', http://obr.uk/data/.

To further highlight the importance of accounting for policy asymmetry, we plot the likelihood of actual borrowing turning out higher than the OBR's central forecast (Figure 5.13). Under our assumptions, if future Chancellors respond to future economic news in the same way that Chancellors since 2010 have done, then PSNB would end up higher than the OBR forecast on 90% of occasions. Otherwise stated, there is only a one-in-ten chance borrowing would end up lower than forecast.

This estimate is sensitive to modelling assumptions. We assume that good and bad shocks come along with equal probability: if negative shocks occur more often, as they have done over the last 13 years, our future borrowing estimate would be even higher.

Figure 5.13. An overly optimistic borrowing outlook



Source: Authors' calculations using Office for Budget Responsibility, 'Forecast revisions database', http://obr.uk/data/.

We also assume Chancellors will have two fiscal events per year to adjust policy in response to underlying changes. Previous analysis from the 2018 IFS Green Budget (Emmerson and Pope, 2018) shows a single fiscal event would restrict the impact of policy asymmetry on borrowing (by giving Chancellors fewer opportunities to behave asymmetrically), thereby lowering the PSNB outlook by approximately 0.3% of GDP relative to our two-fiscal-event projection (from 1.4% of GDP higher to 1.1% higher).[16]

Lastly, our estimates exclude policy responses during the pandemic, when the size and nature of shocks and policy responses were atypical. Including the pandemic period in our analysis lessens the asymmetry of Chancellors' estimated policy response functions (see Table 5.1). Thus, by including pandemic responses, our borrowing forecast moves closer to the OBR's central estimate reducing the gap to 1.1% of GDP (from 1.4% of GDP).

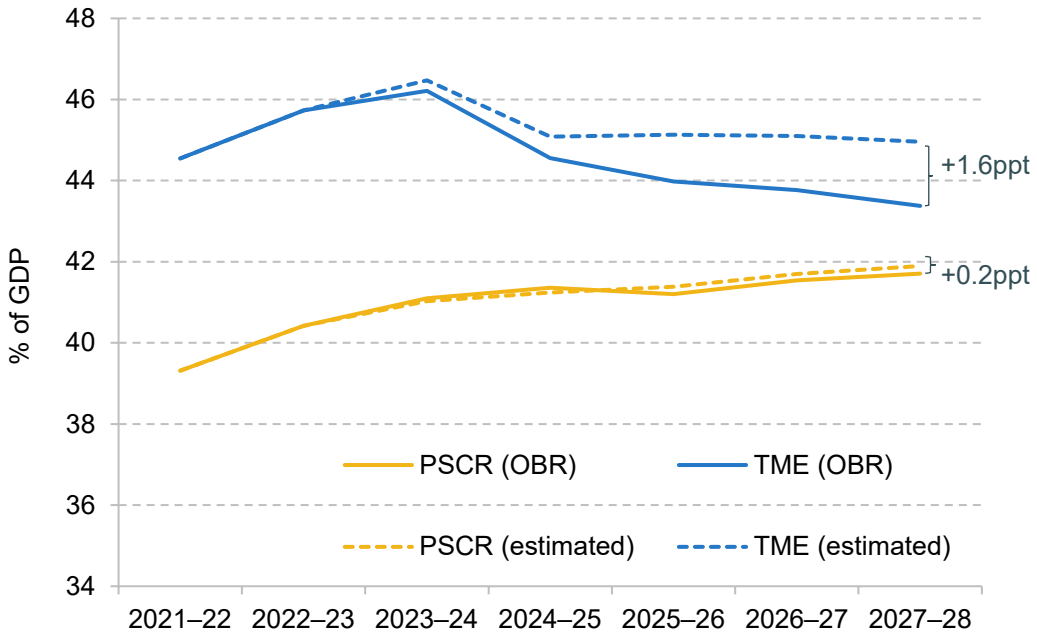
But while the precise figure is sensitive to these assumptions, the broader point is not: once we account for asymmetric policy response functions, the OBR's 'central' forecast no longer seems so central.

[16] The 2018 IFS Green Budget analysis estimates a 19% reduction in the final-year forecast error under a single fiscal event relative to two fiscal events per year, which in our case would equate to a reduction in final-year borrowing of around 0.3% of GDP.

Implications for the size of the state

Finally, we can estimate the implications for future levels of spending and tax revenues. In Section 5.4, we highlighted asymmetry not only in the policy responses, but also in the composition of those responses: Chancellors tend to increase spending following a forecast improvement, and to cut spending *and* raise taxes following a forecast deterioration. In Figure 5.14, we show the implications of that asymmetry for total managed expenditure (TME) and public sector current receipts (PSCR) under our 'estimated asymmetric policy response' scenario (Figure 5.13). We estimate that, if future Chancellors behave like their predecessors, then asymmetric policy responses will act to systematically increase the size of the state relative to forecast. By 2027–28, under our estimates, total spending would be 1.6% of GDP higher than under the OBR central forecast, and taxes would be 0.2% of GDP higher (which combine to give the 1.4% of GDP of extra borrowing in Figure 5.12).

Figure 5.14. Forecasts for the size of the state with asymmetric policy responses



Source: Authors' calculations using Office for Budget Responsibility, 'Public finances databank – July 2023', https://obr.uk/public-finances-databank-2023-24/.

5.6 Conclusion

Since 2010, there has been more bad economic news than good: things have turned out worse than expected, on average. We would expect, as a result, UK government borrowing to have turned out higher than initially planned. This has indeed been the case, as Chancellors have partly accommodated bad news by allowing borrowing to rise. The overall impact of policy over the period was a cumulative net tightening of 1.6% of GDP, because bad shocks came along

more frequently and were larger in magnitude, but this offset only around one-fifth of the total increase in borrowing caused by underlying forecast deteriorations.

But part of the reason borrowing has turned out higher (over and above the impact of negative economic shocks) is that Chancellors have tended to loosen policy in response to good news to a greater extent than they have tended to tighten in response to bad news. That is, had Chancellors behaved symmetrically, the cumulative net tightening would have been even larger (either because of smaller loosenings in response to good news or because of larger tightenings in response to bad news) and the UK government would have cumulatively borrowed substantially less over the 2010s.

This is not to suggest that borrowing *should* have been lower over the 2010s. The point is that whatever the starting point – i.e. even if the post-2010 government had set out to run looser fiscal policy from the outset – the tendency to respond asymmetrically to good and bad economic news would have led to tens or even hundreds of billions of extra borrowing over the course of the decade.

Economic and fiscal forecasting is difficult. For the OBR – whose forecasts matter more than most, given their role in the policymaking process – it is even more difficult, as it is required by Parliament to take governments at their word and to take stated policy as given. As this chapter has demonstrated, the tendency of successive Chancellors to respond asymmetrically to economic news (an asymmetry which the OBR can point out, but cannot build into its forecasts) means that the official 'central' forecast cannot really be thought of as 'central', if future Chancellors behave anything like their predecessors. In fact, our simulations suggest that there is just a one-in-ten chance that borrowing in five years' time turns out lower than under the OBR's central forecast. In our central case, we estimate that government borrowing in 2027–28 will be 1.4% of GDP higher than under the OBR's central forecast – more than enough to miss the government's target for debt to be forecast to fall as a fraction of national income.

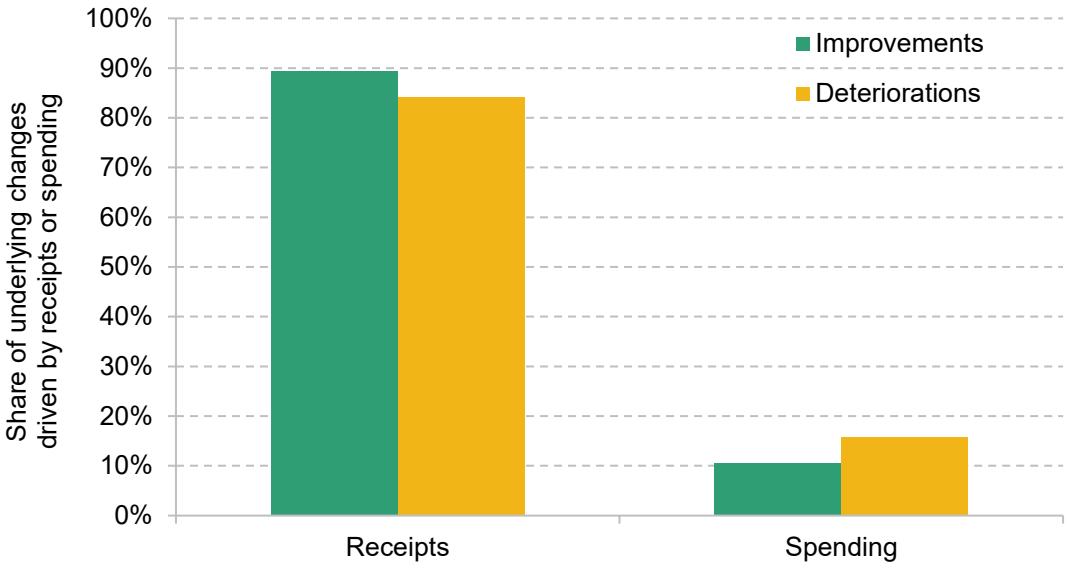
If Chancellors cannot credibly commit to behaving (more) symmetrically, then one option to limit the impact of their asymmetric behaviour would be to provide them with fewer opportunities to adjust policy, by having just one fiscal event per year. By providing fewer opportunities for headline-grabbing policy measures, and potentially freeing up time for longer-term strategic thinking, such a change would likely improve the quality of fiscal policymaking more generally.

Appendix 5A

Automatic stabilisers and underlying changes

Underlying forecast changes are typically dominated by changes in receipts over changes in spending. On average, 87% of final-year underlying forecast revisions are the result of tax receipts changes. This high share holds irrespective of whether the economic news is positive or negative (Figure 5A.1).

Figure 5A.1. Underlying changes are driven by changes in receipts



Source: Office for Budget Responsibility, 'Policy measures database', https://obr.uk/data/; authors' calculations.

These are average figures. There are a small number of exceptions, where underlying changes were primarily driven by spending. These include the two fiscal events either side of the 2015 general election – March and July 2015 – and March 2021, a Spring Budget at the height of the pandemic.

The tendency for underlying changes to be determined by changes in receipts is unsurprising. Tax revenues are typically more cyclical, while large proportions of government spending are, at least in the short term, invariable to the state of the economy (most obviously, departmental budgets, which are fixed in cash terms). It suggests that our measure of 'economic news' is indeed capturing changes to the (forecast) state of the economy.

COVID-19

The pandemic was – we hope – a once-in-a-generation event, and not a typical economic shock. The economic dislocations were of a different magnitude from anything experienced in recent

memory. As well as being atypical in size, they were unusual in being (in expectation) short-term and largely temporary in nature.

The fiscal policy response was similarly atypical. In 2020–21, the government response to the public health emergency increased in-year borrowing estimates between the Spring and Autumn Budgets by 12.8% of GDP. In the period since November 2010, the next largest in-year policy change came in December 2012 (when £3.5 billion of proceeds from a 4G spectrum auction scored as negative in-year capital spending). The discretionary pandemic response, alongside deteriorating economic conditions, increased the forecast for borrowing in 2020–21 from 2.4% of GDP in March 2020 to 19.0% by November 2020.

Because the COVID-19 shock was so different in scale and nature, and because this plausibly meant a very different policy response function, we exclude the period from our main analysis. Our analysis focuses on the medium-term policy response to underlying changes in the medium-term economic outlook, and so it makes sense to abstract away from the (very different) policy responses to a low-probability short-term disruption. We do, however, test the robustness of our estimates to the inclusion of the pandemic period.

Estimating the path of PSNB under a symmetric policy response function

Since 2010, Chancellors have not responded symmetrically to improvements and deteriorations in underlying forecast revisions. Had they, the path of borrowing could have been lower since 2010 (as illustrated in Figure 5.10).

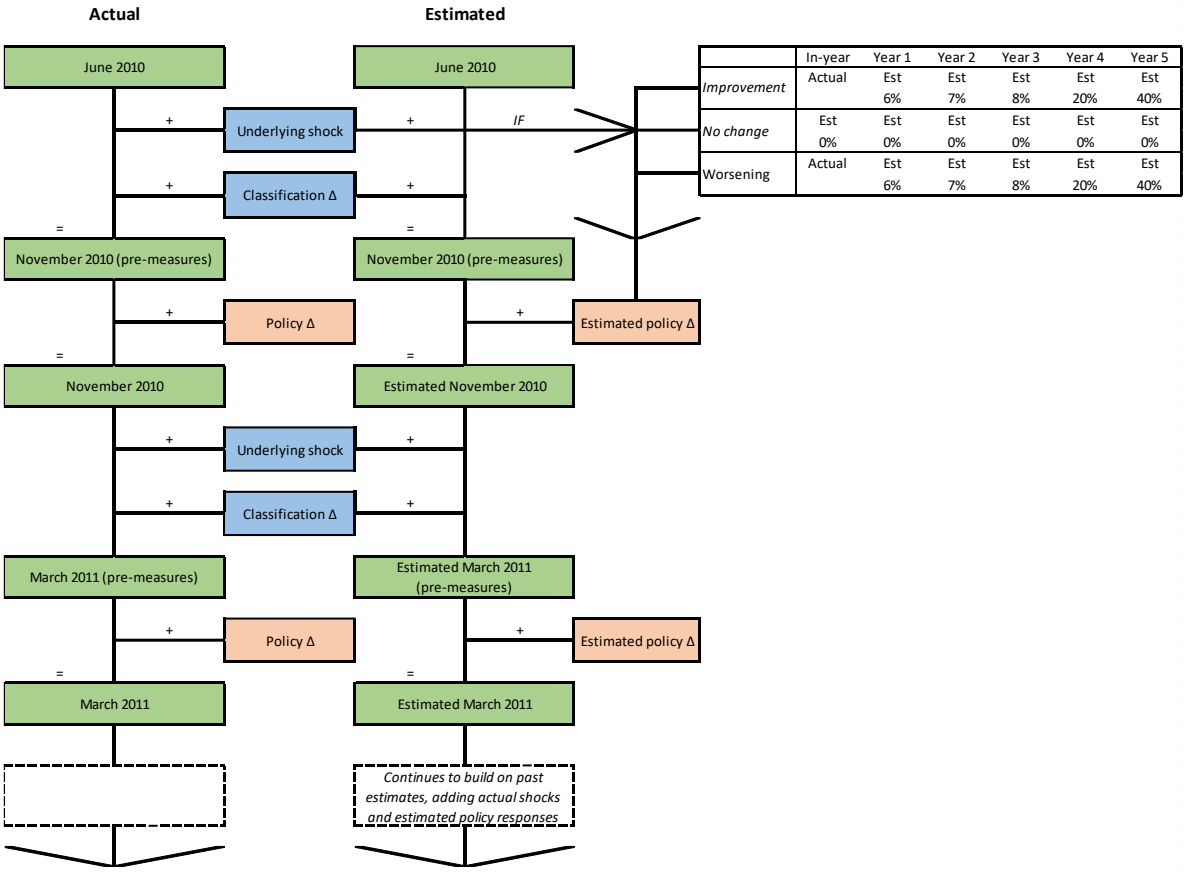
To estimate the difference between actual borrowing and an estimated version of it, we decompose borrowing changes into three parts: underlying changes, statistical classification changes and policy changes.

In our estimated 'symmetric policy response' scenario, we assume the same underlying and classification changes that actually occurred. However, depending on the type of underlying change – whether it was an improvement, no material change or a worsening – we replace the actual policy response with *what the policy response would have been* had Chancellors responded symmetrically to good and bad news (improvements and deteriorations in the underlying forecast). We assume no policy response in cases where there was no material change, i.e. where the underlying forecast change was 0.25% of GDP or less.

There are two further assumptions we introduce. The uncharacteristic nature of economic shocks and the subsequent policy responses during the pandemic means we take the actual policy responses that Rishi Sunak implemented during that time, not a symmetric version of them. We also assume that every new fiscal year entering the forecast takes the same value as estimated by

the OBR. For example, the first forecast of borrowing for 2017–18 entered the OBR's forecast period in December 2012. We take this initial value (which in this case was 1.6% of GDP) to be the starting point, to which future policy changes then apply. The analytical approach is summarised in Figure 5A.2.

Figure 5A.2. Retrospectively estimating PSNB using symmetric policy responses



Note: Classification changes are included to get the most accurate comparison of PSNB. The only difference between the estimated PSNB figure and the actual PSNB figure is the difference between the actual policy response and the estimated (symmetric) policy response, which is a function of whether the latest shock is an improvement, no change or a worsening. When no material underlying changes have occurred, we assume no policy response. During COVID-19, we take the actual policy responses. As a new fiscal year enters the forecast, we take the actual PSNB figure expected from that year.

Simulating PSNB forecasts with asymmetric policy responses

There are three main inputs into our simulations: (i) the fraction of each final-year underlying change offset by the policy response; (ii) the rate at which the final-year underlying change permeates through the forecast horizon; and (iii) the number of fiscal events that we expect to occur over the forecast horizon.

The first input takes the ratios of the average policy responses in years 1 through to 5 to the final-year underlying change. These ratios can be calculated from Figure 5.8. The second takes

the ratios of the average underlying changes in years 1 through to 5 to the final-year underlying change. These ratios are presented in Figure 5A.2. Lastly, we assume there will be two fiscal events per year over the forecast horizon.

Under these assumptions, Chancellors will set policy at 10 fiscal events between Autumn 2023 and March 2028. At each event, they will face a final-year underlying forecast revision. To get an expected policy response, we run 100,000 simulations of what has occurred over the last 13 years. That is, we assume the underlying forecast revisions and subsequent policy responses between now and 2028 will be similar in nature to those that have occurred since 2010, excluding the pandemic.

Averaging the shocks and policy responses at each of the next 10 fiscal events, we are able to build a picture of borrowing. The lines in Figures 5.12, 5.13 and 5.14 represent the mean borrowing outlook from our simulations relative to the OBR's central estimate.

References

Atkins, G. and Lanskey, L., 2023. The OBR's forecast performance. Office for Budget Responsibility, Working Paper 19, https://obr.uk/download/working-paper-no-19-the-obrs-forecast-performance/?tmstv=1692112893.

Emmerson, C. and Pope, T., 2018. Risks to the UK public finances. In C. Emmerson, C. Farquharson and P. Johnson (eds), *The IFS Green Budget: October 2018*. https://ifs.org.uk/books/risks-uk-public-finances

Waters, T. and Wernham, T., 2022. Reforms, roll-outs and freezes in the tax and benefit system. In C. Emmerson, P. Johnson and B. Zaranko (eds), *The IFS Green Budget: October 2022*. https://ifs.org.uk/publications/reforms-roll-outs-and-freezes-tax-and-benefit-system.

6. Public sector net worth as a fiscal target

Ben Zaranko (IFS)[1]

Key findings

1. The government has made a welcome investment in the development of a wider set of measures of the public sector balance sheet. There have been numerous calls for the UK to adapt its fiscal rules to place weight on a particular one of these balance sheet measures, **public sector net worth**. This is a statistical measure that aims to summarise what the government owns and what it owes: it captures both the government's assets (financial and non-financial) and its liabilities. **It attempts to provide a broader and more comprehensive picture of the public finances than commonly used measures of debt and borrowing.**

2. **UK public sector net worth is relatively low by international standards.** This is driven by the UK having unusually low levels of public sector assets and unusually high public sector pension liabilities. **We should be careful, though, not to equate *public sector* net worth with the country's net worth**, and should not over-read into such comparisons (which partly reflect different boundaries of the state and the precise set of assets and liabilities included). Nonetheless, the UK's position at the back of the international pack is often pointed to by proponents of a public sector net worth target.

3. This is a debate worth having. **Public sector net worth is a valuable addition to the set of information about the financial position and assets of the government**, and to the set of measures estimated by the Office for National Statistics (ONS) and forecast by the Office for Budget Responsibility (OBR). **Recent improvements in the**

[1] The chapter benefited from conversations with and comments from several civil servants, to whom the author is extremely grateful. All errors are the author's own.

quality and timeliness of public sector net worth measures have the potential to contribute to better policymaking.

4. In particular, **there are reasons to suppose that a public sector net worth target might be preferable to a simple target for public sector net debt**. Most obviously, by capturing a more comprehensive range of liabilities *and* assets, **it can provide a more complete picture of the impacts of government action (or inaction)**. This is particularly advantageous when the government is considering asset purchases (such as nationalisations) or asset sales (such as of the student loan book), when a narrow focus on debt can be particularly misleading and/or unhelpful.

5. More generally, **a public sector net worth target could helpfully strengthen the incentive for governments to focus on investing in high-quality projects** where the value of assets created is expected to exceed the cost of financing, and could provide a framework for holding the government to account when it promises to 'borrow to invest' (often under the implicit assumption that such investments will pay for themselves). It could also encourage decision-makers to think more about how well public sector assets are managed and maintained, and to confront longer-term liabilities that might otherwise be 'out of sight and out of mind' (such as public sector pension liabilities, or the costs of decommissioning nuclear sites).

6. **There are, however, good reasons to be cautious, and to suppose that – whatever its theoretical attractions – a public sector net worth target might work rather less well in practice.**

7. **One issue is that performance against a public sector net worth target will not necessarily tell us much – if anything – about the government's ability to access capital markets or service its debt.** That is particularly true if the change in net worth is driven by a change in the value of non-financial assets. These assets (such as the road network) are extremely difficult to value, both practically and conceptually. In many cases, the recorded value (the 'replacement cost') bears little relevance to the economic or social value of the asset, or to assessments of fiscal sustainability. **Importantly, these assets cannot generally be sold to meet financing needs** – or if they can, it would presumably be because the new private owners would be able to start charging for something (e.g. driving on a motorway) that was previously free to the public. Put differently, **should an increase in the estimated value of an asset the government cannot sell really be taken as a signal that the government can afford to borrow more?**

8. **For that reason, more traditional measures of debt, debt interest and borrowing will remain important for fiscal policy, and ought to be considered alongside any target for public sector net worth when setting policy.** Under current circumstances, traditional measures of debt and/or debt interest are at such high levels that it is *they* which are likely to be the binding constraint on fiscal policy, irrespective of any target for, or change in, public sector net worth.

9. A further issue is that **choices over definitions and modelling assumptions matter enormously for estimates of net worth** – more so than in the case of a debt target. Different definitions would likely send different signals to fiscal policymakers. Under one measure, rising interest rates (and falling market prices for gilts) have improved the UK's public sector net worth by 40% of GDP over the past two years. On the face of it, and if we were to rely on such a measure alone, that might point to space for a substantial debt-fuelled fiscal expansion – even as borrowing costs surge and markets are being asked to absorb more gilt issuance than at any point in recent history. But under a different measure, net worth has remained effectively flat, suggesting no substantive change in the amount of fiscal headroom.

10. **Whichever measure of public sector net worth is used, it would be complex and difficult to communicate. It also would not be truly comprehensive**: public sector net worth ignores the state's single greatest asset (its ability to tax future generations) and its greatest liabilities (the implicit promise to provide healthcare, pensions, education and security to future generations). For that reason, forecasts of future spending flows on things such as healthcare and pensions – as already produced by the OBR – are a more valuable tool for assessing the long-run sustainability of the public finances. We might also worry about the volatility of forecasts for public sector net worth, and the fact that they can be subject to large shifts in levels following changes in accounting parameters.

11. **In our view, many of the potential advantages of a public sector net worth target stem from the fact that it would reduce the incentives for governments to engage in certain types of 'bad fiscal behaviour'** (such as selling off public sector assets for less than they are worth in an effort to reduce public sector net debt). It would not, however, eliminate all incentives for Chancellors to engage in 'short-termism' or for them to allow accounting treatment to determine economic policy. And it would be possible to improve some incentives (e.g. for governments to invest only in high-return projects) without adopting a net worth target.

12. **The fiscal fundamentals would remain unchanged**, in any case. There would still be a need for a well-designed 'escape clause' to allow for countercyclical fiscal policy in a

crisis; the UK would still face daunting public finance pressures; and there would still be a need for fiscal policy to be tighter in the 'good' times to build up fiscal buffers and provide the space to respond to adverse shocks when they arrive.

13. All things considered, **our view is that the benefits of moving to balance sheet targeting might be insufficient to justify the potential costs involved**. In other words, wholesale adoption of **a public sector net worth target could prove to be a long walk for a small sandwich**: there might be simpler and less complicated ways of achieving some of the policy objectives espoused by its proponents, and it would likely create as many problems as it solved. **There is, nonetheless, a strong case for considering public sector net worth as part of a broader suite of fiscal metrics** – particularly when assessing asset sales and purchases, and other balance sheet policies. The government's Charter for Budget Responsibility already includes a commitment to do this. Labour's proposal to 'take greater account' of public sector net worth appears sensible. But public sector net worth ought not, in our judgement, to be at the centre of the UK fiscal framework.

6.1 Introduction

There have been numerous calls for the UK to alter its fiscal framework to place greater weight on improving the *net worth* of the public sector, rather than overly focusing on the level of public sector debt. Supporters of such a shift include the current Chair of the Office for Budget Responsibility (OBR) and a former Chief Economist at the Bank of England (e.g. Hughes, 2019; Hughes et al., 2019; Haldane, 2023; Wren-Lewis, 2023; Odamtten and Smith, 2023). At the 2019 general election, the Labour party pledged to 'improve public sector net worth over the course of the Parliament' (McDonnell, 2019), and it has more recently made a softer pledge to 'take greater account of public sector assets as well as debt in fiscal policy' (Labour Party, 2022). This comes on the back of more than a decade of work within government to develop better and more timely measures of both sides of the public sector balance sheet.

This debate, and the investment in and development of a broader suite of public sector balance sheet measures, is welcome. Public sector net worth is a valuable addition to the set of fiscal aggregates estimated by the Office for National Statistics (ONS) and forecast by the OBR, and has the potential to contribute to better fiscal policymaking.

There are also several theoretical reasons to suppose that targeting public sector net worth might represent an improvement over a simple target for public sector net debt. Most obviously, by capturing a more comprehensive range of liabilities *and* assets, it can provide a more complete

picture of the impacts of government action (or inaction), and reduce the incentive for Chancellors to pursue certain types of short-term policymaking. It would also provide a better framework for holding governments to account when they promise to 'borrow to invest', often under the implicit assumption that such investments will more than pay for themselves, and could strengthen the incentive for public sector assets to be well managed in the interests of future generations.

Theoretical attractions are one thing, but there are reasons to suppose that a public sector net worth target might work less well in practice. The key difference between a net debt measure and a net worth measure is that the latter incorporates the value of non-financial assets (such as physical infrastructure like roads and buildings).[2] Estimating the value of these assets is fraught with difficulty – how much is a road worth? – and such estimates can be extremely sensitive to changes in accounting parameters, and not especially informative about fiscal sustainability. Choices over definitions and modelling assumptions can be hugely consequential: under one measure, rising interest rates (and falling market prices for gilts) have improved the UK's public sector net worth by 40% of GDP over the past two years. On the face of it, that might point to space for a substantial debt-fuelled fiscal expansion – even as borrowing costs surge and markets are being asked to absorb more gilt issuance than at any point in recent history. Under a different measure, though, net worth has remained effectively flat, suggesting no change in fiscal headroom.

This relates to two broader problems with a net worth target. First, the choice of definition matters hugely – more so than in the case of a debt target. Even the more comprehensive measures, which include unfunded public sector pension liabilities, are not truly comprehensive: a government's greatest asset is its ability to levy future taxes, and its greatest liability is its implicit promise to provide healthcare, education, pensions and security to future generations. These are not captured in public sector net worth. Whatever measure is chosen, it will be complex and difficult to communicate.

Second, changes in a country's public sector net worth will not necessarily tell us much – if anything – about the government's ability to access capital markets or service its debt. That is particularly true if the change in net worth is driven by a change in the value of assets that cannot be sold to meet financing needs. Put differently, should an increase in the estimated value of an asset the government is unlikely to – or simply cannot – sell really be taken as a signal that the government can afford to borrow more? Furthermore, it is not difficult to imagine a world where a deterioration in public sector net worth is disregarded as being caused by a 'technical measurement issue', but where tax cuts and/or spending increases are announced when the

[2] Some measures of public sector net worth also include unfunded public sector pension liabilities and the assets and liabilities associated with public–private partnerships (such as Private Finance Initiative contracts).

reverse happens. That would exacerbate the asymmetric behaviour described in Chapter 5 of this Green Budget.

Together, this ought to give us pause. The UK government's current debt target is poorly designed and should be reconsidered. But rather than disregard debt entirely, a better outcome might be to retain some sort of debt or debt interest target *alongside* a greater focus on public sector net worth – particularly when the government is considering nationalisations or asset sales, at which point a narrow focus on debt can be especially unhelpful. Even if public sector net worth were to be given greater prominence, there would still need to be an 'escape clause' of some kind in the face of major shocks: strict adherence to a public sector net worth target would almost certainly have (inappropriately) precluded borrowing for the COVID-19 furlough scheme, for instance. Labour's proposal to 'take greater account' of public sector net worth therefore appears sensible, but we would urge caution about going much further than that.

More generally, it is worth considering whether there are alternative solutions to the problems a public sector net worth target is intended to address. A wholesale shift to targeting public sector net worth could prove to be a long walk for a small sandwich. It is true that the UK has relatively low public sector net worth by international standards.[3] But we note that governments in other comparator countries have managed to achieve higher public sector net worth without a public sector net worth target. Similarly, other governments have managed to spend more than the UK on public investment over past decades without such a target. And though the UK has unusually large unfunded public sector pension liabilities (by international standards), this is not because it was the only country without a public sector net worth target.[4] Something else has clearly driven those policy decisions.

We might also worry that moving to a net worth target would simply shift the 'fiddling' and creative accounting from one boundary (what is included/excluded from public sector net debt?) to another (what is included/excluded from public sector net worth?). If the ultimate concern is that Chancellors are prone to short-termism and inappropriately letting accounting treatment guide economic policymaking, then perhaps the answer is for independent watchdogs to call this out (even) more forcefully – or for parliament and ultimately voters to demand better behaviour from them.

[3] Though, as we argue later in the chapter, we should be careful not to equate *public sector* net worth with *the country's* net worth, and should not over-read into international comparisons (which partly reflect different boundaries of the state and the precise set of assets and liabilities included).

[4] This partly reflects the fact that the UK is a country with greater reliance on workplace pensions, and less reliance on state pensions. The future liabilities associated with the former (for public sector workers) do appear in public sector net worth, whereas the latter do not.

The aim of this chapter is not to provide firm recommendations about what the ideal set of fiscal rules would look like, but to assess the relative merits of public sector net worth as a fiscal target. We proceed as follows. Section 9.2 provides definitions and both historical and international context for the strength of the UK public sector balance sheet. Section 9.3 outlines the case for targeting public sector net worth rather than public sector net debt. Section 9.4 considers some of the concerns we might harbour about such an approach. Section 9.5 concludes.

6.2 Definitions and context

What is public sector net worth?

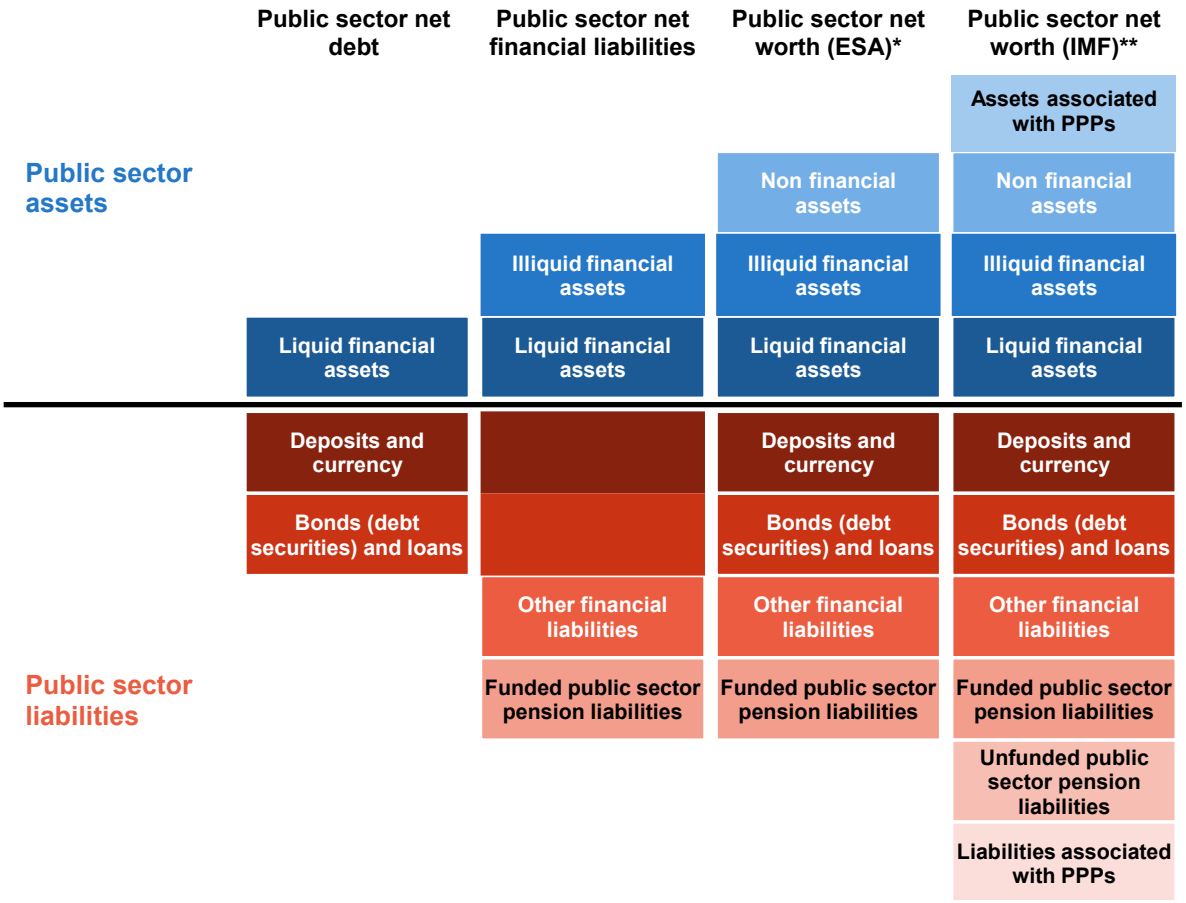
Public sector net worth (PSNW) is an accounting measure that attempts to summarise the total value of public sector assets and public sector liabilities. In simple terms, it attempts to capture the total value of what the government owns (including both financial and non-financial assets), minus the total value of everything it owes. It is therefore a snapshot measure of the government's balance sheet.

PSNW is not the only measure of the public sector balance sheet but it is, in the words of the OBR, 'the broadest balance sheet aggregate that can be produced under existing statistical accounting frameworks' (Ebdon and Khatun, 2021).

The most commonly used balance sheet measure is much narrower: public sector net debt (PSND), which nets off the value of liquid financial assets (such as foreign exchange reserves) from the value of the national debt (defined as the public sector's loan liabilities, debt securities, currency and deposit holdings). Public sector net financial liabilities (PSNFL) provides a slightly broader picture, by also including illiquid financial assets (such as the student loan book) and a broader range of financial liabilities (such as the liabilities associated with funded pension schemes). PSNW provides a broader picture still, by also including the estimated value of non-financial assets (such as buildings and transport infrastructure). The differences between these measures are summarised in Figure 6.1, and the interested reader seeking more detail is encouraged to read ONS's excellent summary (Office for National Statistics, 2021).

In sum, because it brings together both sides of the balance sheet, and because it attempts to capture both financial and non-financial assets, PSNW provides a broader and more comprehensive picture of a government's fiscal position than commonly used 'flow measures' (of, for example, government borrowing) and other measures of the balance sheet. There are two further things worth emphasising at this point.

Figure 6.1. Assets and liabilities included in different public sector balance sheet measures



* Produced in accordance with the European System of Accounts 2010 (ESA 2010).
** Produced in accordance with the International Monetary Fund's Government Finance Statistics Manual 2014 (IMF-GFSM 2014).

Note: 'PPPs' denotes public–private partnerships, which include Private Finance Initiative (PFI) deals; these are considered 'off balance sheet' under the ESA 2010 framework. The ESA 2010 and GFSM 2014 measures also differ in how they value debt securities (the former valuing securities at face value and the latter at market value).

Source: Adapted from Office for National Statistics (2021).

The first is that there is more than one way to calculate PSNW, under different statistical frameworks. The ONS currently publishes two different measures: a measure consistent with the European System of Accounts 2010 (ESA 2010) and a measure consistent with the International Monetary Fund's Government Finance Statistics Manual 2014 (IMF-GFSM 2014).[5] The latter is a broader measure (as summarised in Figure 6.1), because it also includes unfunded public sector pension liabilities, and assets and liabilities associated with public–private partnerships. And,

[5] Since April 2023, the ONS's monthly public sector finances statistical bulletin has published a measure of 'PSNW ex' (PSNW excluding public sector banks), consistent with the ESA 2010 framework.

among other differences, the two measures take alternative approaches in how they value debt securities (an issue to which we return below).

The second is that even PSNW – the broadest and most comprehensive measure available – does not and cannot comprehensively capture the assets and liabilities of a government. The government's greatest asset is its ability to levy future taxes. Its greatest liability is its (implicit) promise to protect the country from attack and to provide public services and social security to future generations. PSNW captures neither of these. An even more ambitiously comprehensive (and complex) measure would be the 'intertemporal public sector balance sheet', which adds the net present value of all future revenue and spending flows to the static, 'snapshot' measure of PSNW (International Monetary Fund, 2018). Estimating this is a useful exercise, and it rightly features in the OBR's long-term fiscal sustainability analysis (e.g. Office for Budget Responsibility, 2023). Assessments of the long-term health of the public finances should absolutely enter tax and spending decisions. But, whatever the merits of such a measure, it is unrealistic to expect it to be re-estimated on a sufficiently frequent basis for it to be of much practical use in real-time fiscal monitoring or decision-making.

Estimates of PSNW, on the other hand, are now published on a monthly basis by the ONS (without long lags), and forecasts are produced by the OBR at fiscal events. This represents a significant advance. A 'quiet revolution in government financial reporting' (Hughes, 2019) has improved the timeliness, comprehensiveness and reliability of government balance sheet data. This has led some to argue that 'balance sheet targeting in fiscal policy is a practical proposition for the first time in our history' (Hughes et al., 2019). This may be so, but it would not be the first attempt to place greater weight and focus on the measurement of public sector assets. William the Conqueror was something of a fiscal trailblazer, having commissioned the Domesday Book in 1086. A further advance came along some time later, in November 1997, when the newly elected Labour government published a National Asset Register to document the fixed assets held by government departments. This was driven by a concern that, as Ed Balls and Gus O'Donnell later recalled:

> **'In 1997 the Government was faced with a large structural deficit, low net investment, rising public debt and *falling public sector net worth*'** [emphasis added]
>
> Balls and O'Donnell (2002, 134–5)

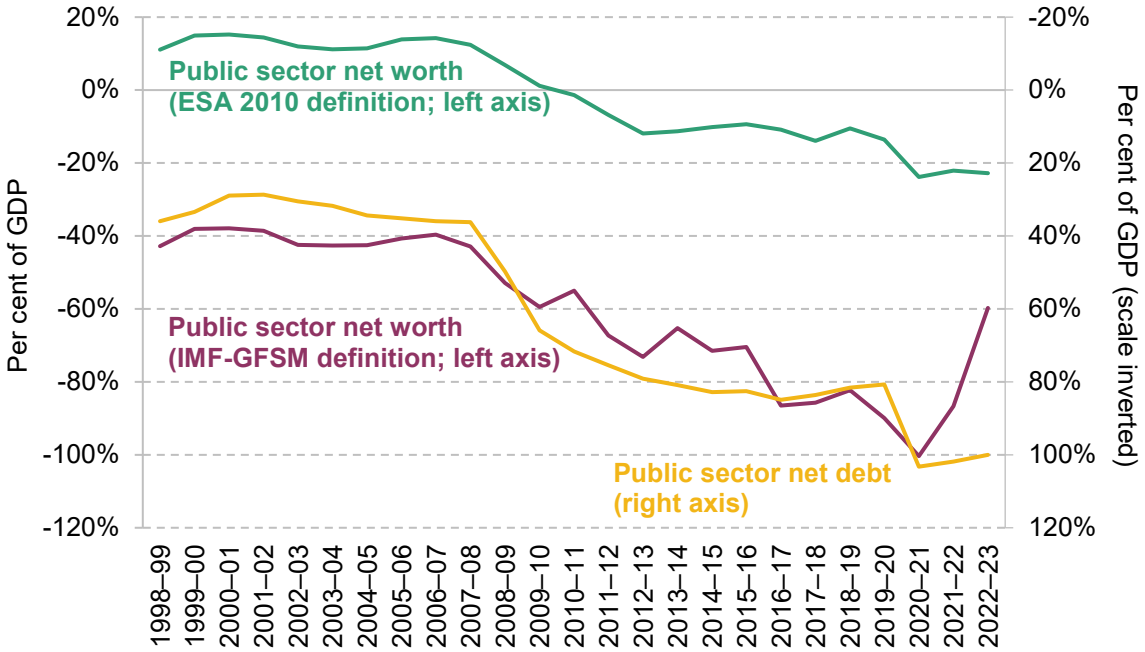
The next subsection explores how public sector net worth is estimated to have evolved since then.

How has UK public sector net worth evolved over time?

Headline figures for public sector net worth

ONS estimates for PSNW (under both the ESA 2010 and IMF GSM 2014 measures) begin in 1998–99.[6] These are presented in Figure 6.2. Both suggest that the net worth position is currently negative – i.e. the estimated value of (included) public sector liabilities exceeds the estimated value of (included) public sector assets. There are three key takeaways.

Figure 6.2. UK public sector net worth and public sector net debt



Note: See Figure 6.1 for further details on the difference between the two measures of PSNW.

Source: Author's calculations using Office for Budget Responsibility, 'Public finances databank', and Office for National Statistics, 'Public sector net worth: Appendix O', both accessed August 2023.

First, PSNW is considerably higher when measured under the ESA 2010 definition. That is primarily (but not only) because the ESA-consistent measure of PSNW excludes unfunded public sector pension liabilities, whereas these are included in the IMF-consistent measure (see Figure 6.1). The ONS estimates that in 2022–23, PSNW stood at minus 23% of GDP (minus £577 billion) under the ESA measure and at minus 60% of GDP (minus £1,513 billion) under the IMF measure.

Second, while the two measures differ in levels, they have (until recent years) followed similar trends. Net worth was more or less flat between 1998–99 and 2007–08, before starting to

6 For estimates of the longer-run evolution of UK PSNW, based on analysis of the National Accounts, see chart 3.1 of Ebdon and Khatun (2021).

steadily deteriorate over the late 2000s and 2010s. By 2020–21, PSNW was 36% (57%) of GDP lower than in 2007–08 under the ESA (IMF) measure.

Third, there is a striking divergence between the two measures in what has happened over the past couple of years. Whereas PSNW has remained essentially flat as a percentage of GDP under the ESA definition, it has improved by a remarkable 41% of GDP under the IMF definition.

Looking under the hood

To better understand these trends in PSNW, and the divergence in recent trends, Figure 6.3 decomposes PSNW into different types of assets and liabilities, under the ESA (Panel A) and IMF (Panel B) measures. The broad picture in both cases is that though both assets and liabilities have grown as a percentage of GDP since the Great Financial Crisis, liabilities have grown more quickly, leading to an overall deterioration in public sector net worth. This increase in liabilities has been driven by an increase in the level of government debt (the two red-shaded bars).[7]

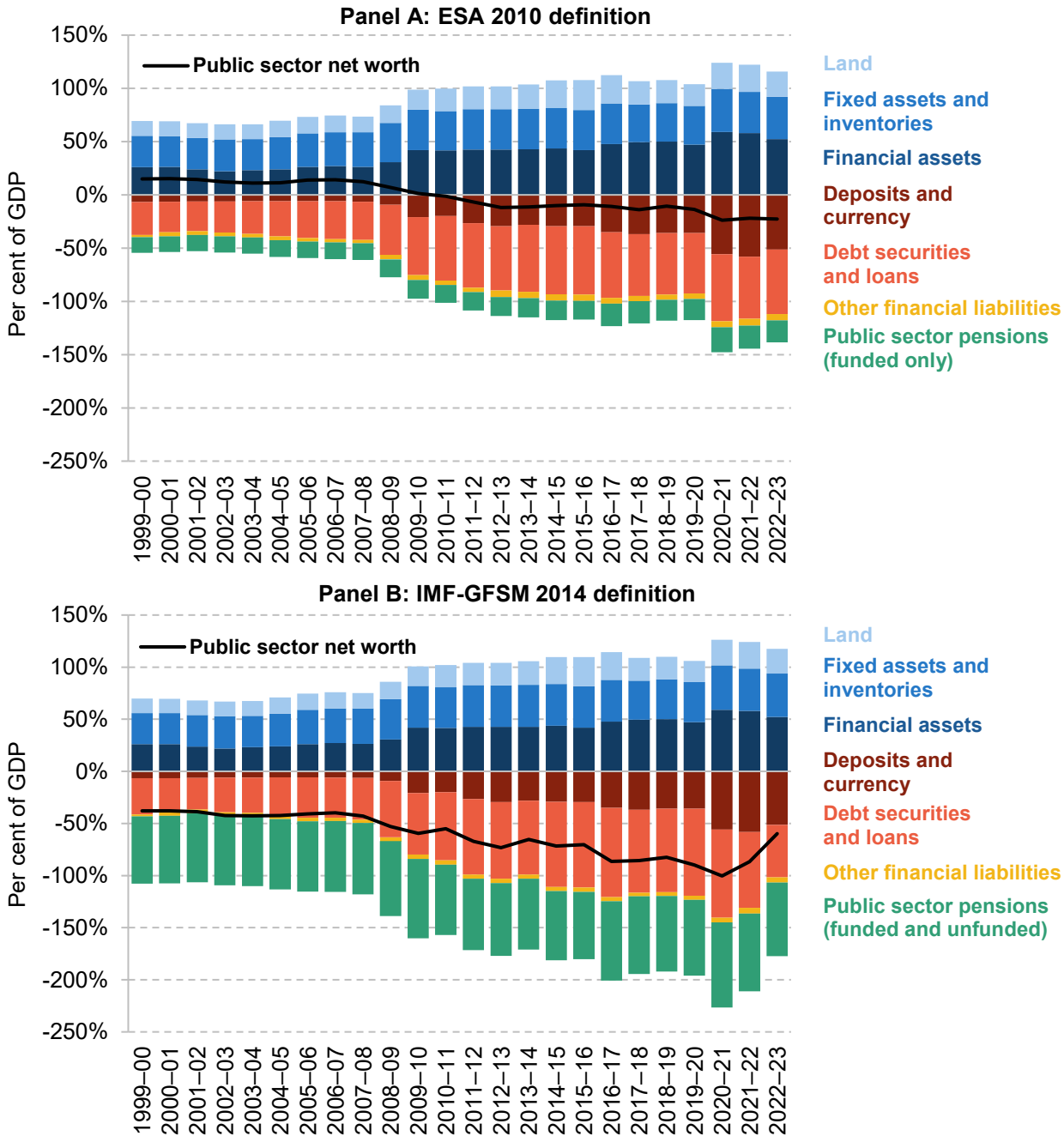
Comparing the two panels, we can also see that the differential post-2020 trends between the ESA and IMF measures have been primarily driven by reductions in the value of debt securities and public sector pension liabilities under the IMF (but not the ESA) measure. Under the ESA-consistent measure, the liabilities associated with debt securities and loans fell by 2.1% of GDP between 2020–21 and 2022–23; under the IMF-consistent measure, they fell by 34.2% of GDP. Similarly, the value of (funded) pension liabilities under the ESA measure fell by 3.0% of GDP over that two-year period; the value of (funded and unfunded) pension liabilities under the IMF measure fell by 11.1% of GDP.

This remarkable divergence is the consequence of the rapid increase in interest rates over the past two years, through two main channels. One, higher interest rates mean a higher discount rate used for the valuation of unfunded pension liabilities (the higher the discount rate, the lower the net present value of those future payments – see O'Brien and Zaranko (2023) for a discussion). Two, higher interest rates reduce the market value of government debt (used in the IMF framework), but not the face value (used in the ESA framework) – see Box 6.1.

The big picture, then, is that the global shift towards higher interest rates has dramatically improved the UK's measured public sector net worth under one statistical definition, but not under another. This illustrates the importance of the choice of definition for the message sent by a PSNW measure. It is difficult to look at the current economic and fiscal environment and conclude that conditions are ripe for a large debt-fuelled fiscal expansion: inflation is high,

[7] 'Government debt' is defined broadly here to include debt securities, loans, currency and deposits. The last of these categories includes the large quantities of reserves issued by the Bank of England as part of its quantitative easing programme, which is why the 'deposits and currency' bar grows from less than 10% of GDP in the late 2000s to more than 50% of GDP in the 2020s.

Figure 6.3. Decomposition of public sector net worth as a percentage of GDP, by types of asset and liability



Note: 'Other financial liabilities' includes special drawing rights, equity and investment fund shares, financial derivatives and employee stock options, and other accounts payable. 'Public sector pensions' is used here as shorthand for insurance, pensions and standardised guarantee schemes. Unfunded public sector pension schemes are excluded from the ESA definition and included in the IMF definition. Under the ESA framework, debt securities are valued at their face value. Under the IMF-GFSM framework, debt securities are valued at their market value.

Source: Author's calculations using Office for Budget Responsibility, 'Public finances databank', and Office for National Statistics, 'Public sector net worth: Appendix O' and 'International Monetary Fund's Government Finance Statistics framework in the public sector finances: Appendix E', all accessed August 2023.

unemployment is low, borrowing costs are high, and – with the Bank of England now selling rather than buying government bonds – the market is already being asked to absorb historically high levels of gilt issuance.[8] Yet that is what a naïve reading of the data might suggest. We return to this issue in Section 9.4.

Box 6.1. Valuing debt securities

Debt securities represent a sizeable chunk of the UK government's overall liabilities. These are bonds issued by the government, often referred to simply as 'gilts' (short for 'gilt-edged securities'), upon which regular payments (known as 'coupons') are paid until the bond's maturity (or redemption) date. At that point, the government repays the principal to the holder of the bond. They can be valued in different ways for the purposes of calculating public sector net worth:

- **Face value**: the amount paid to the bond holder at redemption (i.e. the amount the bond will be worth at maturity).
- **Market value**: the prevailing price of that bond in the market at that particular moment in time (which will depend, among other things, on market interest rates and the time to maturity).
- **Nominal value**: the market price at the point when the bond was issued.

At maturity, the value under all three methodologies is identical. Before that point, the three can and do differ. In the core ONS public sector finance statistics, and under the ESA-2010-consistent PSNW statistics, debt securities are recorded at face value. Under the IMF-GFSM-consistent methodology, debt securities are recorded at market value.

An appraisal of the relative merits of these methodologies is beyond the scope of this chapter (see box 2.1 of Ebdon and Khatun (2021) for a discussion). Here, it is sufficient to note that when market interest rates increase (as they have in the recent past), the *market* value of the government's gilt liabilities will fall, but the *face* and nominal value will not. According to the supplementary statistics published by the ONS, between 2020–21 and 2022–23, as government borrowing rose sharply during the pandemic, the nominal value of gross public sector debt increased by £457 billion; the face value increased by £473 billion; while increases in interest rates were sufficient to push the market value *down* by £239 billion.[a] This explains a large proportion of the divergence in PSNW under the ESA and IMF measures shown in Figures 6.2 and 6.3.

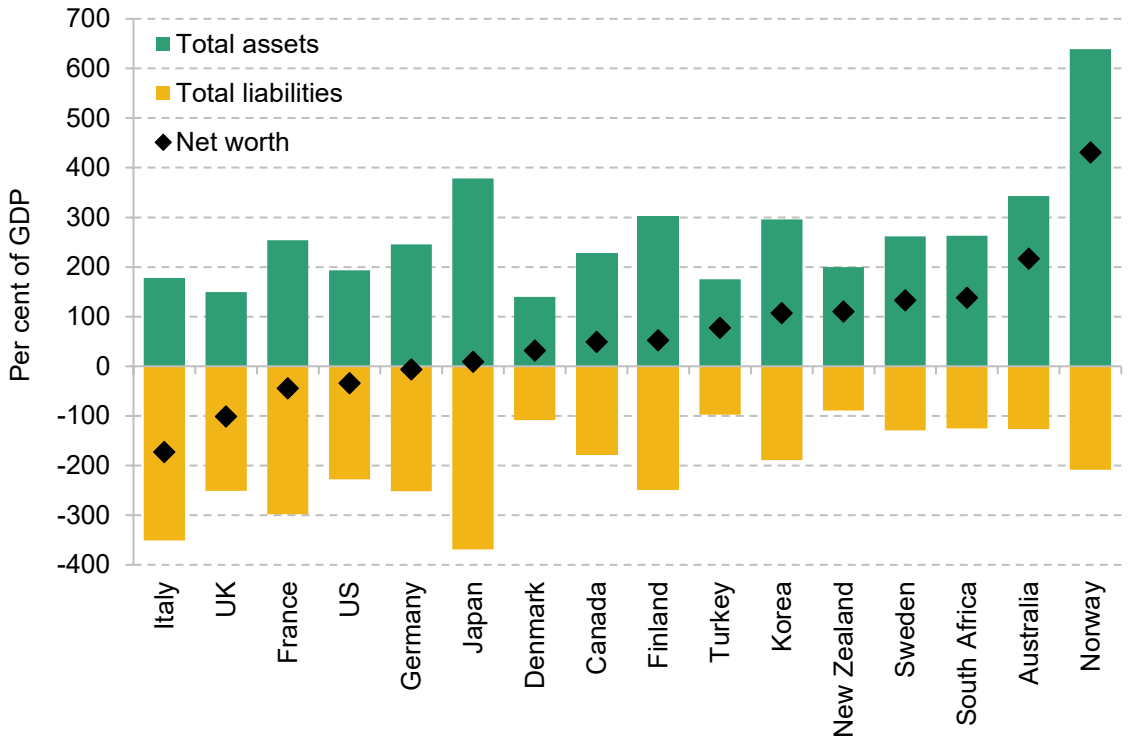
[a] Office for National Statistics, 'International Monetary Fund's Government Finance Statistics framework in the public sector finances: Appendix E'.

[8] In October 2022, Sir Robert Stheeman, Chief Executive of the Debt Management Office, told the Treasury Select Committee that 'we now have a situation where, from now on … net issuance to the market will be the highest in history. It will be even higher than during the coronavirus period when, while our nominal borrowing requirement was much higher, there was quantitative easing going on in the background. There will be an enormous amount of net issuance' (https://committees.parliament.uk/oralevidence/11568/html/).

How does the UK compare internationally?

Figure 6.4 places the UK's PSNW (under the IMF-GFSM definition) in international context. By international standards, the UK's PSNW is low. This is driven both by the UK public sector having relatively low assets (the second-lowest among the countries examined) and by it having relatively high liabilities (the fifth-highest). The precise ordering moves around somewhat depending on which year is chosen for the analysis, but the overall conclusion is robust – for example, Odamtten and Smith (2023) show something similar using 2018 data and a slightly broader set of countries.

Figure 6.4. UK public sector net worth in an international context (selected countries, 2020)

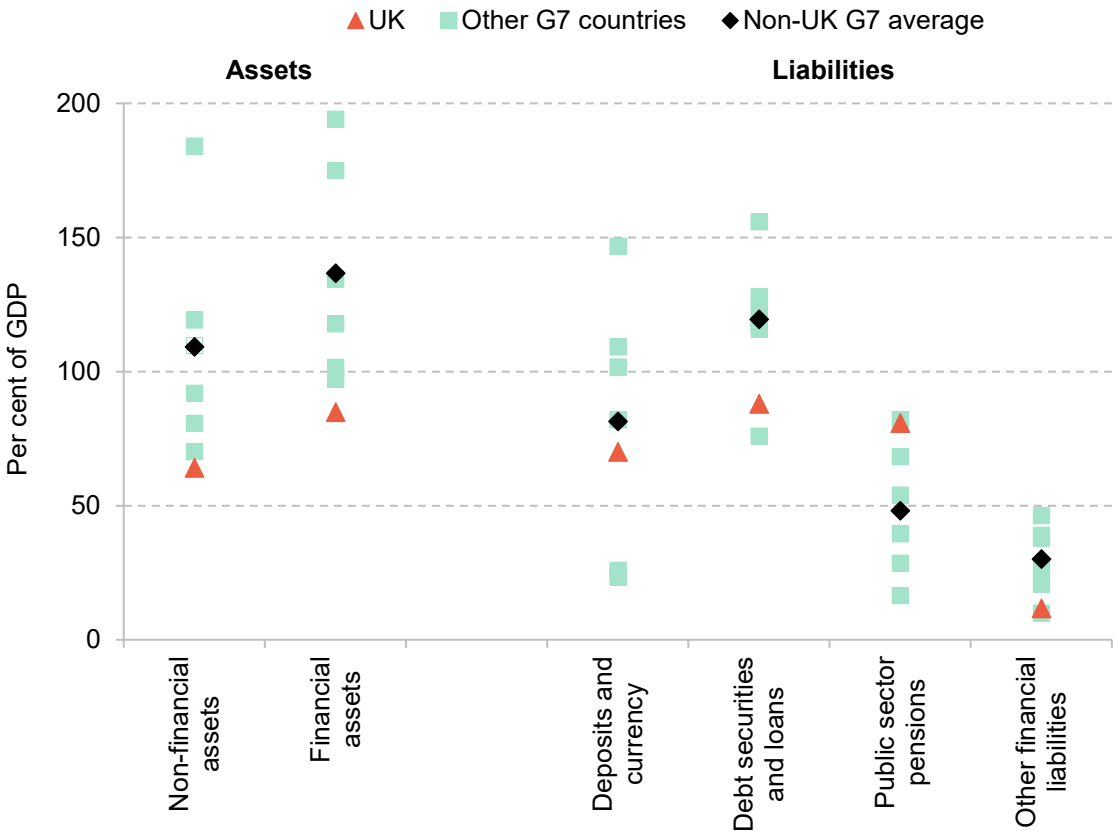


Note: Data for 2020 used for consistency, as 2021 data are available only for a subset of countries.

Source: IMF Public Sector Balance Sheet Database, accessed August 2023.

What explains the UK's comparatively poor net worth position? To examine this, Figure 6.5 shows how the levels of different types of public sector assets and liabilities compare across G7 countries. The UK is an outlier in two respects. First, it has unusually low levels of both financial and non-financial assets. Second, the UK has unusually high public sector pension liabilities. It is these two factors – and not an unusually high level of government debt – which account for the UK having a lower PSNW than its international peers.

Figure 6.5. Public sector assets and liabilities in G7 countries (2020)



Note: G7 countries are Canada, France, Germany, Italy, Japan, the UK and the US. The non-UK G7 average is the unweighted mean of the six countries other than the UK. Values shown are for 2020, because 2021 data were unavailable for France and Japan at the time of writing.

Source: Author's calculations using IMF Public Sector Balance Sheet Database, accessed August 2023.

These international comparisons are helpful and informative, but we should be careful not to over-read into the UK's position at the back of the pack, and should not equate *public sector* net worth with the net worth *of the country as a whole*. Differences in the level of public sector assets are likely, in part, to reflect different boundaries of the state: the UK is relatively unusual, for instance, in having a privately owned water industry (in England and Wales) – at least compared with Western Europe (EurEau, 2020). The assets of this (infrastructure-heavy) industry will largely sit outside of the public sector in the UK, whereas they would appear as additional non-financial public sector assets in many EU countries. (The substantial liabilities of the private water industry will not appear on the public sector balance sheet either.) The decision to privatise the water industry may or may not have been a wise policy choice. But the decision of whether or not to have a publicly owned water industry should not be made on the basis of whether it would improve the UK's position in the international PSNW rankings.[9]

[9] Section 9.3 discusses nationalisation policy and its relationship with PSNW.

Furthermore, the precise set of assets and liabilities that are included (or not) could skew the comparisons. The UK is more reliant on occupational and personal pensions for pensioner income than many other advanced economies (Cribb et al., 2023); this is reflected in its large unfunded public sector pension liabilities (the liabilities associated with the occupational pensions of government employees, past and present). The UK also (and relatedly) devotes a smaller percentage of its GDP to state pensions than most other advanced economies (Harker, 2022; Cribb et al., 2023). But the fact that the UK has, in effect, smaller state pension liabilities than many other countries is not reflected in PSNW. A simple comparison between the UK and, for example, France would not therefore provide a complete picture of each state's 'true' fiscal position. We ought not, therefore, to view the UK's low PSNW relative to other countries as necessarily casting past policy choices in a negative light.

6.3 Advantages of a public sector net worth target

We now consider some of the arguments for why a PSNW target might be a desirable feature of UK fiscal policy. Perhaps the most convincing case for targeting PSNW was made by a team at the Resolution Foundation, including Richard Hughes, prior to his appointment as Chair of the OBR (Hughes et al., 2019). This built upon some of the arguments made in the October 2018 IMF Fiscal Monitor (International Monetary Fund, 2018). Here, we provide a less comprehensive summary of the key points.

Advantages over a debt target

All else being equal, we might think that aiming for higher PSNW is a 'good thing'. For example, there is some evidence that countries with stronger public sector balance sheets face lower borrowing costs and experience shorter and shallower recessions (Yousefi, 2019). It is certainly difficult to think of a good reason why we would wish to deliberately aim to *reduce* net worth over an extended period.

But beyond that, many of the 'pro-PSNW' arguments could instead be cast as 'anti-PSND' arguments. In particular, there are four key reasons to suppose that a net worth target might be more desirable than a debt target.[10]

It is more comprehensive

As outlined in Section 9.2, PSNW provides a more comprehensive picture of the government's fiscal position than PSND. It additionally captures financial assets (such as student loans), non-

[10] This subsection draws heavily on the arguments made by Hughes (2019) and Hughes et al. (2019).

financial assets (such as the road network) and a broader set of (non-debt) liabilities (such as unfunded public sector pension liabilities, under some definitions of PSNW). PSND captures none of these (see Figure 6.1).

For proponents, this is one of the key attractions of a PSNW target. In 2019, the then Shadow Chancellor John McDonnell adopted a PSNW target 'so that when we [borrow to] invest in the infrastructure our country desperately needs it's recognised both as a cost and as a benefit … adding to the government's debt, but also adding to the government's assets' (McDonnell, 2019). On the opposite end of the political spectrum, Julian Jessop notes that 'fiscal conservatives are attracted [to PSNW] by the hope that it would encourage governments to face up to longer-term liabilities that might otherwise be hidden "off-balance sheet", such as the future cost of some public sector pensions' (Jessop, 2023). The hope is that expanding the fiscal information available to decision-makers will result in better policy.

It better captures the fiscal implications of financial transactions

When the government sells or purchases an asset, this has an impact on PSND. Governments might be tempted to sell assets to improve their measured debt position, and be discouraged from purchasing assets that would mean adding to debt (see the next subsection for examples). By capturing both sides of the balance sheet, PSNW allows such transactions to be considered under more appropriate tests, and eliminates certain 'fiscal illusions'. It also better captures policies such as loans and loan guarantees, which have become increasingly common in recent years (e.g. the Mortgage Guarantee Scheme aimed at promoting homeownership) and are excluded from PSND but (largely) included in PSNW.

It provides a framework for assessing the quality of government investment

Fiscal targets often treat investment spending differently from day-to-day spending. Gordon Brown's 'Golden Rule', for instance, stipulated that the government would only borrow to invest over the economic cycle. Governments have at various times targeted a current budget surplus, whereby all day-to-day spending would be funded out of revenues but borrowing would be permitted for investment. This is also current Labour party policy.

The implicit – and sometimes explicit – assumption underpinning promises to 'borrow to invest' is that these investments will bring future benefits. Indeed, the assumption is often that these investments will be done so well that they will more than pay for themselves – particularly when borrowing costs are low. In theory, by showing both sides of the balance sheet, PSNW would show how the value of the assets acquired through public investment compare with the value of

the debt liabilities used to finance said investment.[11] In other words, PSNW targeting would provide a framework for holding such promises to account (on the assumption that these assets are accurately valued in PSNW). This might be more desirable than excluding investment spending from the fiscal rules and then simply hoping for the best.

It can provide better incentives

Relatedly, because the value of assets created through government investment shows up in PSNW, it creates a greater incentive for governments to pursue only high-quality (net-worth-enhancing) investment, or to invest where the returns are greatest. Richard Hughes suggested that, to promote such incentives, the government could publish the cost–benefit analyses for all projects, mandate a National Infrastructure Commission assessment of the value-for-money case for all large projects, and require a minimum benefit–cost ratio for all major investment projects (Hughes, 2019). That might help provide the information necessary for the government to invest only where there is a compelling economic case that the value of assets created would exceed the cost of financing.[12]

In addition, a PSNW target could increase the incentive to manage and maintain public sector assets (to the extent that the measurement of individual asset values actually reflects how well they are being managed – for instance, the extent to which a deterioration in the condition of the further education estate is felt in declining PSNW). If the government opted for a more comprehensive measure of PSNW, it would also create a greater incentive for policymakers to reckon with growing non-debt liabilities, such as unfunded public sector pensions and clinical negligence claims against the NHS.[13]

[11] 'Value' is something of a nebulous concept and can mean different things in different contexts. For example, when it comes to the 'value' of public-sector-specific assets such as prisons, international statistical standards generally call for these to be recognised at replacement cost. Other assets are recognised at market value. These might be what appears in PSNW. But when deciding whether to invest in an infrastructure project, the government might be more interested in something akin to the net present social value, as per the Green Book (HM Treasury, 2022a). These methodological questions and challenges would matter a great deal for how a PSNW target worked in practice.

[12] Note, however, that this would not require the government to adopt a PSNW target – whatever the government's fiscal rules, it could commit to investing in all projects where there is a compelling case that doing so would have a net present value for the public sector, and could commit to publishing the information that would help it do so. In other words, there might be simpler routes to encouraging the government to invest wisely; we return to this later in the chapter.

[13] It is worth noting, however, that the government is already taking steps to improve the management of the public sector balance sheet, without having adopted a formal PSNW target. The 2022 Autumn Statement, for example, included a commitment to publish periodic balance sheet reports on how public sector assets and liabilities are being managed, with the first report due by the end of 2024.

Some concrete examples of when a net worth target would be preferable to a narrow focus on debt

We now consider some specific examples of where a narrow focus on public sector net debt might be especially unhelpful, and where a greater focus on public sector net worth might encourage better policymaking (or discourage bad policymaking).

Nationalisations

At the 2017 and 2019 general elections, the Labour party proposed a large programme of nationalisations. The 2019 manifesto, for example, pledged to 'bring rail, mail, water and energy into public ownership', alongside 'the broadband-relevant parts of BT'.[14] Analysis at IFS at the time suggested that this would have added at least £150 billion of debt to the public sector balance sheet (Crossman, Emmerson and Kraftman, 2019).

The impact on public sector net debt is not a helpful guide to assessing the merits of such a policy programme. If the government were to acquire (for instance) an energy company for what it is worth, then the addition to debt would be offset by an increase in public sector assets, leaving PSNW unchanged. The company could always be re-privatised in future, which would reduce public sector assets and liabilities. And if one believes that the asset would be better managed in the public sector, the value of the asset might even increase post-nationalisation, leading to an improvement in PSNW (the converse is true if one thinks that the public sector would do a worse job than the private sector of running the company).

The key question, in short, is whether the asset would be better managed in the public or private sector. A PSNW target cannot tell us the answer to that, but it at least accounts for the acquisition of the assets of the company as well as the debt, and provides a framework for assessing whether those assets were being well managed over time. In that sense, it is a more useful tool than a simple debt target for determining whether nationalisations are a 'good idea'.

Selling off the student loan book

During the 2010s, the government sold £3.6 billion of student loans as part of a dedicated student loan sale programme. This policy was explicitly motivated by a desire to 'reduce public sector net debt, while not having a significant impact on public sector net borrowing' (HM Treasury, 2020a). In other words, the government deliberately decided to sell off a financial asset (the right to an uncertain flow of future revenue, as students repay their loans) in return for an up-front sum which would reduce public sector net debt. This was couched in terms of restoring the public finances to health. Yet, as the OBR noted in 2018, '[selling student loans] does not strengthen the public finances in any meaningful sense – it is simply an alternative way

[14] https://labour.org.uk/wp-content/uploads/2019/11/Real-Change-Labour-Manifesto-2019.pdf.

to finance the budget deficit, and a relatively expensive one at that given current borrowing costs' (Office for Budget Responsibility, 2018). The government was instead guided by its desire to reduce the headline measure of public sector net debt.

Had the government of the day instead focused on the impact on PSNW, it would have faced different incentives: a reduction in debt would have been offset by a corresponding reduction in financial assets. If the asset was intrinsically worth more in the hands of the private sector, and the sale price reflected that, the sale could still have improved the net worth of the public sector. But in this case, the ownership would not be expected to affect the economic value of the asset – the future loan repayments of former university students will not depend on who ultimately owns the loan book. If anything, because the government (as a highly creditworthy and immortal entity) has a lower discount rate and lower borrowing costs than private sector institutions, the value of the student loan book could in fact be greater in the hands of the public sector. It was also subsequently alleged (e.g. Public Accounts Committee, 2018) that the government received too little in its student loan sales: another reason to think that the policy might even have decreased PSNW.

A subsequent HM Treasury Balance Sheet Review rightly recommended that the government ought also to consider how selling student loans (and other assets) would affect the broader balance sheet (HM Treasury, 2020b). Policy might have evolved differently and more sensibly if the government had done so sooner.

Public sector pension reform

Public sector pensions are considerably more generous than what is available in virtually all of the private sector, and a far greater share of overall public sector remuneration is deferred compared with the private sector. In the face of recruitment and retention challenges in many public services, last year's IFS Green Budget concluded that there is a strong case for rebalancing public sector remuneration away from pensions and towards pay (Boileau, O'Brien and Zaranko, 2022). This could be done in an actuarially fair way, such that the overall generosity of the package is unchanged, but is composed of higher up-front pay and lower pension payments in retirement.

Aside from the challenge of agreeing such a change with public sector employees and their unions, one reason HM Treasury might resist such a change is that the increase in pay would show up immediately in the pay bill (and in departmental budgets), but the savings from reduced payments would not materialise for many years. Although fiscally neutral in the long term, the short-term effect would be higher spending and (unless offset by higher taxes) higher borrowing and debt. A reduction in the generosity of public sector pensions would, however, show up as lower (unfunded) public sector pension liabilities, which are captured in some measures of PSNW. A government focused on its net worth might therefore be more likely to pursue such a

policy – one that would leave the government's long-run fiscal position broadly unchanged, but could help address recruitment issues in the short term.

Summary

There are compelling theoretical reasons to suppose that targeting PSNW might improve (at least some aspects of) UK fiscal policymaking, relative to a target for PSND. These would, in large part, come from discouraging certain kinds of what we might call 'bad fiscal behaviour' – such as selling off public sector assets for less than they are worth, due to a motivation to reduce debt. Because it captures assets as well as liabilities, it is easy to see the appeal of a PSNW target to a government wishing to embark on a nationalisation programme, or a large programme of debt-financed investment. PSNW and other balance sheet metrics could provide a framework for assessing the case for those programmes, and for holding politicians and policymakers to account over the quality of their investment decisions and their management of public assets.

6.4 Reasons to be cautious

We now consider a range of (related) arguments for why we might wish to be cautious about the adoption of a PSNW target.

It is not necessarily informative about the government's ability to access capital markets or service its debt

Fiscal rules are a means to an end. The government's fiscal policy is ultimately constrained by the need to service its debt. While a sovereign country with an independent central bank could in theory print money to meet debt servicing costs, there are good reasons not to do so. This means that the government is constrained by what financial markets are willing to lend it and at what price. Fiscal rules are one (imperfect) means of trying to ensure that government policy remains consistent with that constraint.

It is questionable, though, whether a target for PSNW would help serve that purpose, because a change in net worth does not necessarily contain useful information about the government's ability to service its debt. This is perhaps the fundamental problem with a net worth target, at least if not set alongside other targets, rules or constraints which take account of this purpose. An increase in the estimated value of non-financial assets (such as land or buildings, which make up the majority of government assets – see Figure 6.3) would increase PSNW, and thus could be taken as a signal that the government is able to borrow more and take on more debt. But those assets cannot, in many cases, be sold to meet the financing costs associated with that

debt.[15] If they could be sold, it would presumably be because the new private owners would be able to start charging for something (e.g. driving on a motorway) that was previously free to the public (Giles, 2023). And, as discussed below, an increase in the estimated value of (for instance) the road network does not necessarily mean that it will be making a greater indirect contribution towards the government's ability to service its debt, via economic activity and growth, nor that the government's fiscal position has meaningfully improved.

A PSNW target could, as a result, send perverse signals about what a government can 'afford' to borrow. Section 9.2 described how rising interest rates and falling gilt values have, under one measure, led to an improvement in the UK government's PSNW of some 40% of GDP over the past two years. Does that point to space for lots more borrowing? That would disregard rising government borrowing costs, and the fact that a combination of elevated borrowing and the Bank of England's quantitative tightening programme means that the market is being asked to absorb what one market participant described as a 'cataclysmic' volume of gilt issuance this year.[16] While PSNW offers a more comprehensive picture of the public finances, it might tell us less about what is most relevant for real-time fiscal policymaking.

At a minimum, this suggests that assessments of PSNW need to come alongside traditional assessments of debt, debt interest and deficits (International Monetary Fund, 2018).

Valuing non-financial assets is difficult

The most significant difference between PSNW and other balance sheet measures is its inclusion of non-financial assets. Putting a value on these assets is complicated and fraught with difficulty.

One particular issue for the suitability of PSNW as a fiscal target is that, depending on which methodology is chosen, changes in the recorded value of non-financial assets might be of limited relevance for an assessment of fiscal sustainability. Ebdon and Khatun (2021) point to the fact that statistical manuals generally call for non-financial assets to be recognised at their 'replacement value' – how much it would cost to replace the asset in its current condition. An increase in either land prices or building costs would increase the replacement value of the rail and road network (because replacing them would require the government to spend more on land and construction). But, as noted by Ebdon and Khatun, the government cannot (or is at least highly unlikely to) take advantage of higher land prices by selling off the road or rail network, and higher building costs will make future infrastructure investments more expensive (meaning that

[15] This is also true of many illiquid financial assets. The problem would be even more acute if the net were cast more widely still, and net worth defined to include natural assets (e.g. 'clean water, air and a thriving biosphere', as proposed by Haldane (2023)). In a funding crisis, such as the UK almost found itself in last year, the government cannot sell off its cleaner air or its burgeoning bumblebee population to meet financing needs.

[16] Quoted in *Financial Times*, 6 December 2022, 'Who is going to buy? UK set to unleash historic debt deluge', https://www.ft.com/content/6446220c-41e8-4937-9860-8d075d297aa8.

the government will be forced to spend more in future). In this case, an increase in the measured value of non-financial assets could not be said to have improved the government's fiscal position – or, as argued above, to have increased the amount the government can afford to borrow.

The previous section noted that a PSNW target could, in theory, provide a framework for assessing the quality of government investment, and encourage the government to borrow to invest only where the value of assets created would be greater than or equal to the cost of financing. The crux is that we might like to encourage the government to invest wherever there is a compelling case that the present economic (or social) value of the investment is greater than the costs of financing it (or perhaps where the benefit–cost ratio is above some minimum level). But the 'value' recorded in PSNW might have little relevance for such an assessment, if in many cases it instead just reflects the replacement cost. If an infrastructure project turned out to be a 'white elephant', would that be captured, or would it still be recorded at its replacement cost? Or, in the happier case where a project yields unexpectedly high returns, would that enter PSNW in any meaningful sense? We could adopt measures to promote investment in high-quality projects with high returns without adopting a PSNW target.

The previous section also noted that a PSNW target could, in theory, increase the incentive to manage and maintain public sector assets. This rests on the assumption that the condition of those assets can (and would) be regularly, rigorously and accurately assessed. If the government chose to cut the deficit by ceasing to spend anything on road maintenance, would that affect the valuation of the asset, or would it continue to be depreciated in line with whatever methodology was decided when it was constructed? A rigorous, bottom-up valuation of all public sector assets seems unlikely to occur on a regular basis, and so a government's decisions around maintenance might have limited impact on the valuations used for the calculation of PSNW (at least over the forecast period).

There are two further concerns worth noting here. The first is that changes in asset values could be correlated with the economic cycle (International Monetary Fund, 2018), meaning that asset values (and so net worth) could fall at the point when a fiscal expansion or stimulus might make most sense, and vice versa. The second is that these changes are likely to be complex, unintuitive and difficult to communicate. We therefore ought to be cautious about letting changes in such valuations govern fiscal policy.

PSNW is highly sensitive to definition and modelling choices

A broader and related concern is the sensitivity of PSNW estimates to definitional and modelling choices. That is true of all fiscal metrics, to an extent, but it is particularly acute for PSNW, where choices over accounting parameters can have enormous impacts. Section 9.2 discussed how different methodologies for valuing debt securities have painted very different pictures in recent years. To complicate matters, the ESA 2010 measure and the new measure recently

developed by the ONS (to be consistent with other fiscal aggregates – see Office for National Statistics (2021)) use the face value of debt; the IMF-GFSM measure uses the market value; and the OBR uses the nominal value in its preferred measure. This rather obscure and technical choice could have big implications if the change in PSNW were used as a guide for policy.

To give another example, the largest single liability on the government balance sheet is its unfunded public sector pension promises. Relatively small changes to the actuarial assumptions used to place a present value on these (e.g. around life expectancy, or future GDP growth) can have big effects (O'Brien and Zaranko, 2023). Changes in the level of pension liabilities, driven by changes in the discount rate, are usually the single largest moving part in the government's balance sheet (Ebdon and Khatun, 2021). The choice of discount rate, and how often it is updated, therefore matters hugely and could easily prove to be the difference between a government meeting and missing a PSNW target. These changes in the estimated level of liabilities might be less useful for fiscal policymaking than an analysis of future flows (e.g. forecasts for future spending on public service pension payments each year, as a share of national income, already produced regularly by the OBR).

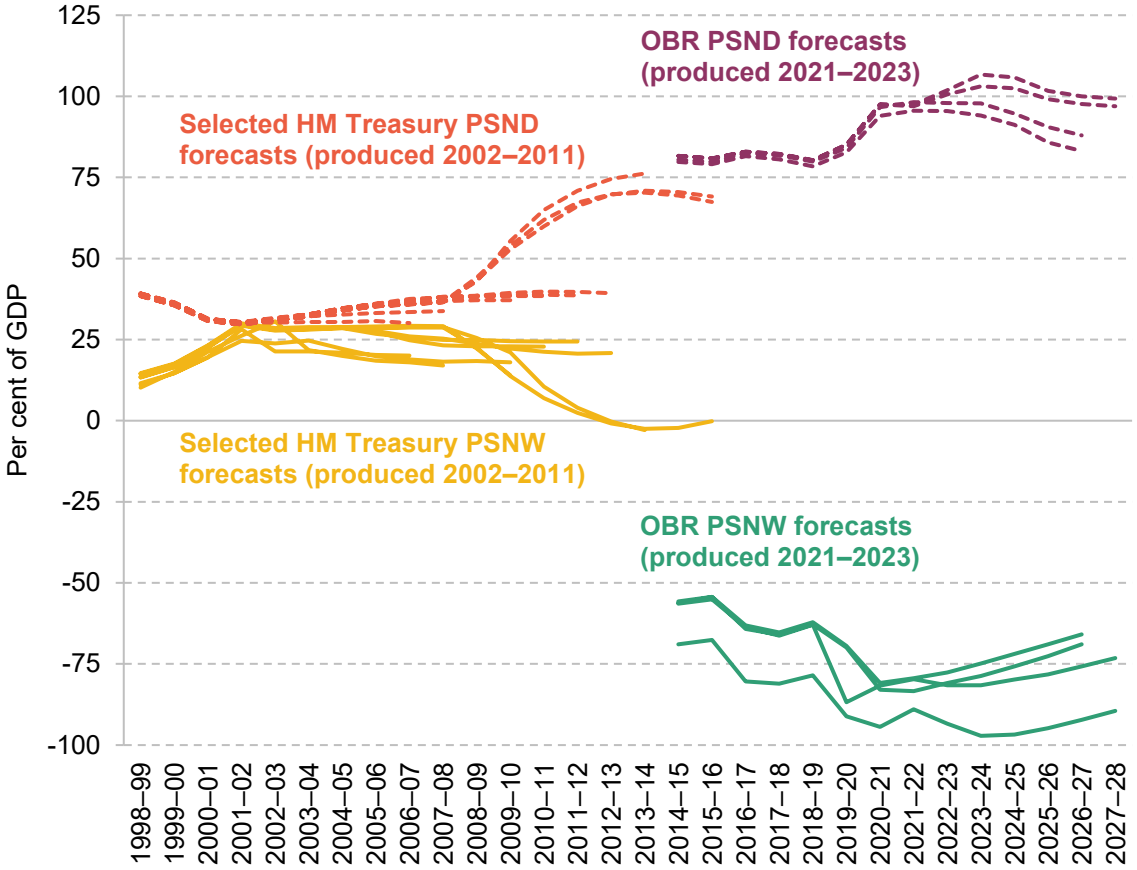
It ignores the biggest state assets and liabilities

Regardless of which definition of PSNW is used, there is a more fundamental critique. As noted in Section 9.2, measures of PSNW do not capture the government's single most important asset (its ability to tax) or its most important liabilities (the implicit promise to provide healthcare, state pensions, schooling, child benefits, etc. in future). Estimates of the 'intertemporal public sector balance sheet' aim to capture this, but these are even more fiendishly complicated than estimates of PSNW, are highly sensitive to assumptions around things such as population growth, and are even more sensitive to the choice of discount rate. This is another reason why an analysis of future spending flows might be more useful.

PSNW forecasts are volatile and subject to large level shifts

One concern with targeting a balance sheet measure such as PSNW is that it could be more volatile than a conventional measure such as PSND because market values can oscillate (the change in the value of debt securities in Panel B of Figure 6.3 is a case in point) and because changes in accounting parameters can cause large valuation changes. Previous work has argued that year-on-year changes in PSNW (in the out-turn) have in fact been less volatile than those in

Figure 6.6. Successive forecasts for PSND and PSNW since 2002



Note: Different series are based on different methodologies and so should not be directly compared. OBR PSNW forecasts value debt securities at their nominal value (versus market value under the ESA framework and face value under the IMF-GFSM framework). HM Treasury forecasts are from August of each year between 2002 and 2011, apart from 2004 (no data available), 2005 (September) and 2011 (March). HM Treasury stopped publishing estimates for PSNW in April 2012. OBR forecasts are from each Economic and Fiscal Outlook between October 2021 and March 2023.

Source: HM Treasury Public Sector Finances Databank (discontinued); OBR Economic and Fiscal Outlook (various); and all sources for Figure 6.2.

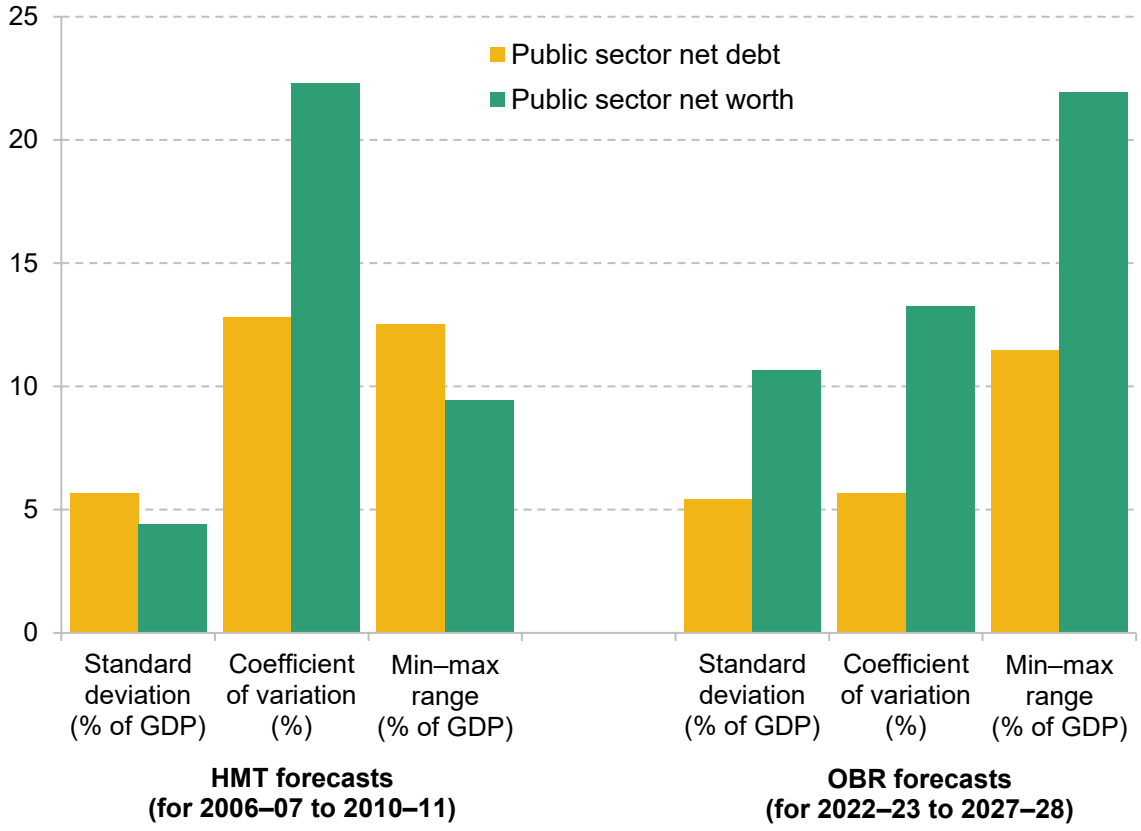
PSND (Hughes, 2019).[17] But if PSNW is to be used for real-time fiscal policymaking, this is perhaps less important than the volatility of *forecasts*. A lack of data makes it difficult to draw firm conclusions on this question. But what data there are suggest that PSNW forecasts might be more volatile than forecasts for PSND – especially in the recent past.

[17] The reasons for this are threefold. One, under the ESA 2010 definition at least, market values are only used for a small portion of assets and liabilities; nominal values are more common, and these are less volatile. Two, changes in accounting parameters often have offsetting impacts on assets and liabilities: an increase in interest rates (and thus discount rates) might reduce the estimated value of some non-financial assets, but also reduce public sector pension liabilities. Three, PSNW is less sensitive to classification shifts into and out of the public sector, because entities generally come with both assets and liabilities (whereas PSND would capture only one side of that). It is worth noting that the Hughes (2019) analysis used a definition of PSNW that excludes unfunded public sector pension liabilities and that values debt securities at face (or nominal) value.

Between 2002 and 2011, HM Treasury compiled a monthly Public Sector Finances Databank, which included forecasts for PSNW and PSND.[18] And since 2018, the OBR has produced forecasts for PSNW (under a different definition), alongside the usual forecasts for PSND. These successive forecasts are shown in Figure 6.6; Figure 6.7 then compares several measures of the volatility of these forecasts. This is, by necessity, an incomplete and imperfect exercise. But because these forecasts were produced at the same time, by the same institutions, comparing them tells us something about their relative volatility.

The analysis suggests that forecasts for PSND were more volatile than forecasts for PSNW on two out of the three measures during the 2000s (the left-hand side of the charts). But in the more recent period, when the OBR has produced 'proper' forecasts for both measures, PSNW forecasts have been considerably more volatile on all three measures (the right-hand side).

Figure 6.7. Volatility of forecasts for PSND and PSNW as a percentage of GDP



Note: Displayed values denote the mean value of each measure for the period in question. Coefficient of variation is defined as the standard deviation over the mean.

Source: Author's calculations using data underlying Figure 6.6.

[18] It is possible that earlier editions also included a PSNW forecast, but the author was not able to recover editions of the databank going back any further than 2002.

To illustrate this, consider the forecasts for the 2026–27 financial year. The OBR's forecasts for PSND have ranged from 83.1% of GDP (in March 2022) to 100.0% of GDP (in November 2022), with a standard deviation of 8.0% of GDP and a min–max range of 16.9% of GDP. For PSNW, forecasts have ranged from minus 65.9% of GDP (in March 2022) to minus 92.2% of GDP (in November 2022), with a standard deviation of 11.7% of GDP and a min–max range of 26.3% of GDP. In other words, PSNW forecasts for that year have been more volatile than those for PSND. The same is true for the recent period as a whole (summarised in Figure 6.7).

We ought to be cautious about targeting something that is subject to large shifts in levels. Hughes (2019) recognises this concern, and argues that the government should therefore express its PSNW target in terms of direction of travel over the medium term. Hughes et al. (2019) subsequently recommended that the government target an improvement in PSNW over the fixed five-year period from 2020–21 to 2024–25. But if a level shift were to occur *during that five-year period* (due, for instance, to changes in interest rates and discount rates, as have been seen in recent years), then that would affect the direction of travel. The fact that PSNW estimates are likely to be more subject to large shifts in levels (and the fact that these level shifts are likely to be difficult to communicate) might reduce the usefulness of PSNW as a fiscal target.

It will simply shift the boundary around which 'fiscal fiddling' takes place

As described in Section 9.3, some of the potential benefits of a PSNW target could come from discouraging governments from taking poor fiscal decisions in the pursuit of a reduction in measured headline debt – that is, allowing accounting treatment to determine economic policy. But switching to a more comprehensive measure such as PSNW would by no means eliminate this sort of behaviour. Instead, it might merely move the boundary around which 'fiscal fiddling' takes place.

Ebdon and Khatun (2021) use the example of the reclassification of housing associations in 2017 to demonstrate this point. The government of the day relaxed regulation of housing associations with the explicit objective of convincing the ONS to reclassify them as being in the private, rather than public, sector.[19] It was successful: the ONS, after being 'invited' to do so, reclassified housing associations as private sector entities. Although (as noted by the OBR at the time) this had no meaningful effect on the underlying health of the public finances (as the government would presumably still feel an obligation to intervene if a housing association ran into difficulty), this did have an impact on a range of fiscal metrics. The reclassification resulted in a reduction in headline PSND (reflecting the fact that loans taken out by housing associations

[19] The Department for Communities and Local Government stated that 'the only reason these regulations have been introduced is to seek ONS to reclassify housing associations to the private sector. In preparing [them], we have ensured that these only go as far as we have to, to reclassify housing associations'; see paragraph 4.176 of Office for Budget Responsibility (2017).

were removed from the total). But it also shifted the (non-financial) housing assets of the housing associations out of the public and into the private sector. The net result was a *deterioration* in public sector net worth (because the assets were larger than the liabilities). So, because the government was motivated by the impact on PSND, it chose to deregulate housing associations to have them reclassified as being in the private sector; if it had been focused on PSNW, it would have faced the opposite incentives. Some future government, armed with a PSNW target, might decide to re-regulate housing associations to have them reclassified as being public sector bodies, and improve PSNW in the process.

The point is that the temptation for governments to allow accounting treatment to govern economic policy would not be eliminated upon adoption of a PSNW target. Instead, it might just create incentives for new and different types of 'bad fiscal behaviour'.

It could exacerbate Chancellors' tendency to respond asymmetrically to shocks

In Chapter 5 of this Green Budget, we describe how Chancellors since 2010 have displayed a tendency to respond asymmetrically to economic shocks. In particular, they have displayed a tendency to loosen in response to 'good news' to a greater extent than they tighten in response to 'bad news'.

A PSNW target might exacerbate this asymmetric behaviour, owing to the technical nature of some of the changes likely to occur between fiscal events. In particular, one can easily imagine a Chancellor disregarding a deterioration in PSNW driven by 'an obscure technical change' to how the government values its non-financial assets or pension liabilities, arguing that this should not govern tax and spending decisions in the real world. But when handed an improvement in PSNW from a 'technical change' in the opposite direction, Chancellors may not be able to resist the temptation to use this as justification for a tax cut or a spending increase. Whatever the right response to such changes, the response function should be symmetric. The additional complexity of a PSNW target, and the difficulty in communicating the reason for changes, could open the door to even more asymmetric behaviour.

It is just as likely to get discarded in a crisis

A common challenge in the design of fiscal rules is to avoid them being discarded in a crisis (or at the first sign that they might be missed). A PSNW target would suffer from the same challenge. Countercyclical fiscal policy is likely to add to liabilities (in the form of higher debt), but may not create any counterbalancing public sector assets, and so lead to a deterioration in PSNW. The COVID-19 furlough scheme is a case in point: the government borrowed large sums to fund the scheme, but the enhanced labour market attachment of the employees covered by the scheme does not appear as an asset on the public sector balance sheet. And though the furlough scheme might have been expected to boost future tax revenues, these are not captured in PSNW.

Accordingly, PSNW deteriorated in 2020–21 (as per Figure 6.2).[20] Strict adherence to a PSNW target would likely have precluded such borrowing (though, in reality, such a target would almost certainly have been abandoned).

There would, therefore, be a need for some sort of 'escape clause' in the face of a crisis. Hughes et al. (2019) proposed that their PSNW target be suspended in any years in which the OBR pre-measures forecast showed spare capacity in excess of 1% and Bank Rate below 1.5%. We note that such an escape clause would not have applied last year, and consider it highly likely that the net worth target would have been abandoned given the government's desire to support households and firms with the elevated cost of energy. The challenge of designing an appropriate 'escape clause' is not specific to a PSNW target; the point is rather that moving towards a PSNW target would not change the fact that designing a fiscal framework that is suitable for all seasons is devilishly difficult, and building in an escape clause in the case of downturns would (further) complicate any PSNW target.

It does not change the fiscal fundamentals

More generally, moving to a PSNW target would not change the fundamental fiscal challenges facing the UK. Many proponents of a net worth target also advocate higher levels of government borrowing and investment spending. To listen to some commentary, one would think that the UK government could, with one simple trick, shake off its fiscal shackles and borrow to its heart's content. But adopting a PSNW target would do nothing to change the facts and constraints described in the OBR's recent Fiscal Risks and Sustainability report (Office for Budget Responsibility, 2023). It would do nothing to change the fact that with elevated debt, rising interest rates and sluggish growth, Chancellors now need to run a larger primary surplus to stabilise debt-to-GDP (Office for Budget Responsibility, 2023). It would do nothing to change the fact that in the face of demographic pressures and geopolitical risks, fiscal policy will need to be tighter in the 'good' times to build up fiscal buffers and provide the space to respond to adverse shocks. Those shocks are coming along with alarming frequency; the IMF has argued that the fiscal buffers needed to manage shocks might be larger than previously thought as a result (Caselli et al., 2022). That is true whether the government is targeting PSND, PSNW or something else. One can argue that a PSNW target would be an improvement on the existing framework, but adopting one would not magically alter the difficult fiscal reality facing the UK.

[20] This relates to a broader point: investments in human capital (or the supply side of the economy more generally) would not result in an increase in public sector assets. For those who are concerned that the main issue with the existing fiscal rules is their bias towards physical infrastructure over other types of investment (e.g. Justine Greening MP, in a parliamentary debate on Treasury reform on 11 June 2019 – see Hansard), a PSNW target is not the answer.

6.5 Conclusion

All else being equal, we might think that aiming for higher public sector net worth is a 'good thing'. There is certainly no reason why we should deliberately aim to *reduce* net worth over an extended period. Some caution is needed, however. Bringing more of the economy into the public sector might well increase public sector net worth (at least in the short term). But that does not in itself make it a desirable outcome. In an extreme case, consider a scenario in which the government used compulsory purchase powers to acquire (say) the water industry for half of its market value. Public sector net worth would shoot up. But the UK's economic prospects might materially worsen, given the likely impact on private investment and wider investor confidence. The immediate impact on public sector net worth will not necessarily be a good guide for policy.

Nonetheless, having a broad objective to increase public sector net worth over time seems sensible, as does Labour's promise to 'take greater account' of it. There are definite cases where looking at net worth is more useful than a narrow focus on debt. Considering the impact of decisions on both sides of the balance sheet as part of the policymaking process could reduce the incentive for governments to engage in certain types of 'bad fiscal behaviour', such as selling off assets for less than they are worth. A more comprehensive picture of the benefits and costs of government action and inaction is valuable.

Yet there are, in our view, strong reasons to doubt the usefulness of a public sector net worth target as a fiscal rule. Provided that the government borrows and purchases assets for what they are worth (leaving net worth unchanged), a net worth target by itself puts no constraint on what the government can borrow and spend. That might be desirable, if the government borrows only to invest in high-return projects where the net economic benefits will comfortably exceed the costs of financing – but the value used for public sector net worth estimates will not necessarily inform such an assessment.

The most significant feature of public sector net worth, relative to other balance sheet measures, is its inclusion of non-financial assets. But there is no reason to expect changes in the recorded value of those assets (which make up the majority of government assets and in many cases cannot realistically be sold) to provide useful information about how the government's ability to service its debt, or the appropriate stance of fiscal policy, has changed. There might be good reasons for the government to invest more in the country's physical infrastructure. It does not mean that complex estimates of the value of that infrastructure should directly enter the government's fiscal rule.

Changes in net worth could even provide perverse signals about fiscal sustainability, and basing policy on those changes could prove unwise: a sharp increase in construction costs that pushes

up the 'replacement value' of the road network could increase public sector net worth, and so permit additional borrowing for day-to-day spending or tax cuts – even though the government's fiscal position would, if anything, have weakened. On one definition, rising interest rates (and falling market prices for gilts) have improved the UK's measured public sector net worth by 40% of GDP over the past two years, similarly pointing to space for debt-fuelled tax cuts, even as borrowing costs soar. Choices over definitions and modelling assumptions would, in other words, have huge effects, and valuations would likely be subject to large shifts in levels. The government could strip out the most volatile and difficult-to-value elements, but that would beg the question 'Why bother with a net worth target at all?'.

All things considered, our view is that the benefits of moving to balance sheet targeting might be insufficient to justify the potential costs involved.

There is also an argument that it would be the fiscal equivalent of using a sledgehammer to crack a nut. There might be simpler ways, for example, of encouraging the government to invest more when borrowing costs are low, or to invest where the returns are highest. On the latter, for instance, there is nothing to stop the government from imposing a minimum benefit–cost ratio for all infrastructure projects above a certain size, transparently publishing said ratios, and requiring the underlying cost–benefit analyses to be assessed by the National Infrastructure Commission (as recommended by Hughes (2019)) *without adopting any sort of net worth target*. Other countries seem to have managed to invest more, and build up higher public sector net worth, without the need for a formal target. If there are specific problems with the UK's policymaking process or institutional set-up, adopting (what is in our view) a badly designed fiscal rule might not be a good way of going about fixing them.

As a final point, our argument is not that the government's existing debt target is perfect (it is not) or that the government need necessarily retain a debt target at all (it need not). Some variant of a target for *debt interest* might make more sense (as per Furman and Summers (2020)). Our argument is that public sector net worth ought not to be at the centre of the UK fiscal framework. It could – and indeed should – be included as part of a broader suite of measures, but that would need to include traditional measures of debt, debt interest and deficits. This is, broadly speaking, the approach already outlined in the government's Charter for Budget Responsibility.[21] In the short term, the key point is that with elevated debt, rising interest rates and a weak outlook for growth, it is the 'traditional measures' which are likely to be the binding constraint on fiscal policy, irrespective of any target for or change in public sector net worth.

[21] The Charter states, for example, that 'effective management of fiscal policy needs to be based on the use of a broad set of indicators and tools. Alongside the fiscal mandate and supplementary targets [for borrowing and debt], the Treasury will also consider wider data, analysis and evidence on the affordability of public debt and the strength of the public sector balance sheet' (HM Treasury, 2022b).

References

Balls, E. and O'Donnell, G. (eds), 2002. *Reforming Britain's Economic and Financial Policy*. Palgrave Macmillan.

Boileau, B., O'Brien, L. and Zaranko, B., 2022. Public spending, pay and pensions. In C. Emmerson, P. Johnson and B. Zaranko (eds), *The IFS Green Budget: October 2022*. https://ifs.org.uk/publications/public-spending-pay-and-pensions.

Caselli, F., Davoodi, H.R., Goncalves, C., Hong, G.H., Lagerborg, A., Medas, P.A., Nguyen, A.D.M. and Yoo, J., 2022. The return to fiscal rules. IMF Staff Discussion Note 2022/002, https://www.imf.org/en/Publications/Staff-Discussion-Notes/Issues/2022/10/11/The-Return-to-Fiscal-Rules-523709.

Cribb, J., Emmerson, C., Johnson, P., Karjalainen, H. and O'Brien, L., 2023. Challenges for the UK pension system: the case for a pensions review. Institute for Fiscal Studies Report 255, https://ifs.org.uk/publications/challenges-uk-pension-system-case-pensions-review.

Crossman, S., Emmerson, C. and Kraftman, L., 2019. Labour's nationalisation policy. Institute for Fiscal Studies Briefing Note, https://election2019.ifs.org.uk/article/labour-s-nationalisation-policy.

Ebdon, J. and Khatun, F., 2021. Forecasting the balance sheet: public sector net worth. Office for Budget Responsibility, Working Paper 16, https://obr.uk/download/working-paper-no-16-forecasting-the-balance-sheet-public-sector-net-worth/?tmstv=1693490694.

EurEau, 2020. Governance of water services in Europe: 2020 edition. https://www.eureau.org/news/478-governance-of-water-services-in-europe.

Furman, J. and Summers, L., 2020. A reconsideration of fiscal policy in the era of low interest rates. Discussion draft, https://www.brookings.edu/wp-content/uploads/2020/11/furman-summers-fiscal-reconsideration-discussion-draft.pdf.

Giles, C., 2023. Beware fiscal rules that are easy answers to complicated problems. *Financial Times*, 27 September, https://www.ft.com/content/792f598a-5f94-4c53-a8b8-1bc3a704df04.

Greening, J., 2019. Parliamentary debate on Treasury reform, 11 June 2019, https://hansard.parliament.uk/Commons/2019-06-11/debates/68FD84E1-67A8-4354-BE69-0D632C89C445/SocialMobilityTreasuryReform#contribution-C091E057-D98D-4B99-A3B0-B3D64D1E9C33.

Haldane, A., 2023. The case for rethinking fiscal rules is overwhelming. *Financial Times*, 16 May 2023, https://www.ft.com/content/d57567c3-cd97-4cbe-be00-6cf50886b308.

Harker, R., 2022. Pensions: international comparisons. House of Commons Library Research Briefing, CBP 0290, https://commonslibrary.parliament.uk/research-briefings/sn00290/.

HM Treasury, 2020a. Review of the student loan sale programme. https://www.gov.uk/government/publications/review-of-the-student-loan-sale-programme.

HM Treasury, 2020b. The Balance Sheet Review Report: improving public sector balance sheet management. https://www.gov.uk/government/publications/the-balance-sheet-review-report-improving-public-sector-balance-sheet-management.

HM Treasury, 2022a. The Green Book: appraisal and evaluation in central government. https://www.gov.uk/government/publications/the-green-book-appraisal-and-evaluation-in-central-governent.

HM Treasury, 2022b. Charter for Budget Responsibility: Autumn 2022 update. https://www.gov.uk/government/publications/charter-for-budget-responsibility-autumn-2022-update.

Hughes, R., 2019. Seeking public value: the case for balance sheet targeting in fiscal policy. Resolution Foundation, https://www.resolutionfoundation.org/publications/seeking-public-value/.

Hughes, R., Leslie, J., Pacitti, C. and Smith, J., 2019. Totally (net) worth it: the next generation of UK fiscal rules. Resolution Foundation, https://www.resolutionfoundation.org/publications/totally-net-worth-it/.

International Monetary Fund, 2018. Fiscal Monitor: managing public wealth. https://www.imf.org/en/Publications/FM/Issues/2018/10/04/fiscal-monitor-october-2018.

Jessop, J., 2023. How valuable is 'public sector net worth'? UK in a Changing Europe, https://ukandeu.ac.uk/how-valuable-is-public-sector-net-worth/.

Labour Party, 2022. Labour sets out plans for responsibly rebooting the economy – as it emerges Tory tax plans would rip up fiscal rules and cause public sector debt to rise. Labour party press release, available from https://policymogul.com/key-updates/23804/labour-sets-out-plans-for-responsibly-rebooting-the-economy-as-it-emerges-tory-tax-plans-would-rip-up-fiscal-rules-and-cause-public-sector-debt-to-rise.

McDonnell, J., 2019. McDonnell pledges fiscal rules shake-up. Labour party press release, https://labour.org.uk/press/mcdonnell-pledges-fiscal-rules-shake-up/.

O'Brien, L. and Zaranko, B., 2023. A reduced discount rate for public sector pensions will add billions to employer costs. Institute for Fiscal Studies, Comment, https://ifs.org.uk/articles/reduced-discount-rate-public-sector-pensions-will-add-billions-employer-costs.

Odamtten, F. and Smith, J., 2023. Cutting the cuts: how the public sector can play its part in ending the UK's low-investment rut. Resolution Foundation, Briefing Note, https://economy2030.resolutionfoundation.org/reports/cutting-the-cuts/.

Office for Budget Responsibility, 2017. Economic and fiscal outlook – November 2017. https://obr.uk/efo/economic-fiscal-outlook-november-2017/.

Office for Budget Responsibility, 2018. Economic and fiscal outlook – October 2018. https://obr.uk/publications/economic-and-fiscal-outlook-october-2018/.

Office for Budget Responsibility, 2023. Fiscal risks and sustainability – July 2023. https://obr.uk/frs/fiscal-risks-and-sustainability-july-2023/.

Office for National Statistics, 2021. Wider measures of the public sector balance sheet: public sector net worth. https://www.ons.gov.uk/economy/governmentpublicsectorandtaxes/publicsectorfinance/methodologies/widermeasuresofthepublicsectorbalancesheetpublicsectornetworth.

Public Accounts Committee, 2018. Sales of student loans. https://publications.parliament.uk/pa/cm201719/cmselect/cmpubacc/1527/152702.htm.

Wren-Lewis, S., 2023. Why nationalisation can be a gift to a future Conservative government. https://mainlymacro.blogspot.com/2023/07/why-nationalisation-can-be-gift-to.html.

Yousefi, S.R., 2019. Public sector balance sheet strength and the macro economy. IMF Working Paper WP/19/170, https://www.imf.org/en/Publications/WP/Issues/2019/08/06/Public-Sector-Balance-Sheet-Strength-and-the-Macro-Economy-48529.

7. Reforming inheritance tax

Arun Advani (IFS and University of Warwick) and David Sturrock (IFS and UCL)[1]

Key findings

1. **Inherited wealth is growing – and set to continue to grow – compared with earned incomes, and it will have a growing impact on inequalities by parental background.** While inheritances will remain small for those with the least wealthy fifth of parents, for those with the wealthiest fifth of parents they are set to rise from averaging 17% of lifetime income for those born in the 1960s, to averaging 30% of lifetime income for those born in the 1980s. If the annual flow of non-spousal inheritances next year was equally shared across those aged 25, this would imply each receiving around £120,000.

2. **Exemption thresholds, which allow many couples to pass on up to £1 million tax-free, mean that the share of deaths resulting in inheritance tax is small, at around 4% in 2020–21, but a larger and growing proportion are potentially affected by the tax.** The proportion of deaths resulting in inheritance tax is set to grow to over 7% by 2032–33. The number of people affected by inheritance tax will be still larger. By 2032–33, one in eight people (12%) will have inheritance tax due either on their death or their spouse or civil partner's death.

3. **Inheritance tax revenues are small, at £7 billion (or 0.3% of GDP) a year. However, we forecast that by 2032–33 they will rise to just over £15 billion in today's prices (0.5% of GDP),** driven by increasing levels of wealth held by subsequent generations of retirees. It is of growing importance that this tax is well designed.

[1] Advani acknowledges funding from his Nuffield 'Broad Shoulders' grant (WEL/FR-000023787) and a grant from the Economic and Social Research Council (ES/W012650/1). Sturrock acknowledges funding from an ESRC grant (ES/V001248/1). Both authors thank Stuart Adam and Emma Chamberlain for comments.

4. **The current cost of abolishing inheritance tax would be £7 billion. Around half (47%) of the benefit would go to those with estates of £2.1 million or more at death**, who make up the top 1% of estates and would benefit from an average tax cut of around £1.1 million. The 90% or so of estates not paying inheritance tax would not be directly affected by such a reform.

5. **There are several problems with the current design of inheritance taxation. Reliefs for agricultural and business assets and certain classes of shares, and the total exemption of pension pots from inheritance tax, open up channels to avoid the tax** and are consequently costly and inequitable and distort economic decisions. The residence nil-rate band, which gives special treatment to property passed to direct descendants, raises similar types of problems and is of greater benefit to those in London and the South. There is a clear case for eliminating the special treatment of all of these types of assets.

6. **Abolishing agricultural and business reliefs and bringing pension pots within the scope of inheritance tax could raise up to around £1½ billion a year.** How much revenue would be raised is uncertain and depends on various factors including whether other channels are used to avoid inheritance tax. Making these changes together would reduce the scope for substituting one avoidance channel for another.

7. **Four-fifths of the tax revenue from reform to business relief could be captured just by capping the relief at £500,000 per person, rather than outright abolition.** Most business wealth is concentrated among those with high wealth, so the fiscal cost of an additional half a million pounds threshold for business wealth would be low, though the special treatment would remain unfair and distortionary. Around 90% of business wealth bequeathed is given as part of an estate worth over £2 million.

8. **Removing the special treatment for residential property, by abolishing the residence nil-rate band (currently set at £175,000) and extending the nil-rate band from £325,000 to £500,000 would cost around £700 million a year and hold the proportion of deaths resulting in inheritance tax down at around 4%**, while making the tax system fairer.

9. **A reform that capped agricultural and business reliefs, brought pension pots within the scope of inheritance tax and abolished the residence nil-rate band could fund an increase in the nil-rate band to around £525,000 or a cut in the inheritance tax rate from 40% to around 25%.**

10. **Increasing the nil-rate band to hold the share of deaths resulting in inheritance tax down at its long-run average of 4% would require a nil-rate band of £380,000 and cost around £900 million a year.** The cost of limiting the scope of the inheritance tax system in this way would grow over time, reaching £2.7 billion by 2032–33.

11. **There are other changes to taxation at death that would improve efficiency and fairness, and raise revenue.** Levying capital gains tax at the point of death would raise around £1.6 billion a year. Levying income tax on withdrawals from inherited pension pots regardless of the age at which the giver passed away would also raise further revenue.

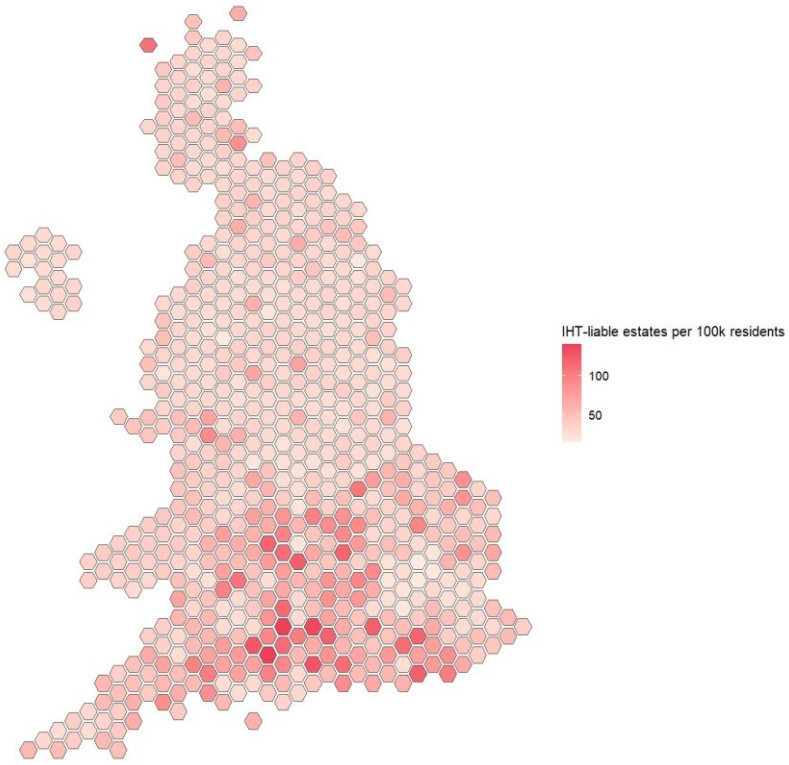
12. **Inheritance tax as currently designed has only a small impact on the distribution of inheritances received and therefore on intergenerational wealth mobility.** The wealthiest fifth of donors will bequeath an average of around £380,000 per child, and pay inheritance tax of around 10% of this amount. By contrast, the least wealthy fifth of parents will leave less than £2,000 per child. To have a larger impact on intergenerational mobility, inheritance tax would have to be substantially expanded in scope.

13. **By the time inheritances are received, wealth inequality is already substantial.** Inheritances are most often received when people are in their late 50s or early 60s. Around the ages of 50–54, children of the wealthiest fifth of parents have an average of £830,000 in wealth, while children of the least wealthy fifth have on average £180,000. While a reformed inheritance tax could do more to promote intergenerational mobility, big wealth inequalities by parental background already exist before inheritances are received.

7.1 Introduction

Inheritance tax is arguably the UK's most disliked tax. A recent YouGov poll found that just 20% of people deemed inheritance tax 'fair' (see Ansell (2023)). This compared with almost 60% for National Insurance contributions. There is near-universal agreement that inheritance tax in its current form needs reform, but no consensus about what that reform should be. Complaints range from saying that the tax is far too easy to avoid – because of exemptions for certain types of assets and for gifts made more than seven years before death – and so needs to be expanded, to claims that there is no justification for (further) taxing those who choose to pass on their wealth to their children and that the tax should be abolished.

Figure 7.1. Number of inheritance-tax-liable estates per 100,000 residents, by parliamentary constituency



Source: Authors' calculations using HM Revenue and Customs (2023a, table 12.9).

There are a number of well-noted and established issues with the current design of inheritance tax and indeed with the way that the tax system treats death more generally. These have been set out by, for example, the Office of Tax Simplification (2019) and the All-Party Parliamentary Group for Inheritance and Intergenerational Fairness (2020). There is good reason to think that reform could make the tax system fairer and more economically efficient.

Reform of inheritance tax is a topic worth considering now for multiple reasons. In the immediate term, a group of Conservative MPs, in consort with a Daily Telegraph campaign, have sought to push the Chancellor to commit to abolishing the tax. Looking to the near future, governments of all stripes may seek to raise more revenues from taxing wealth and wealth transfers in order to meet fiscal pressures. There are many political considerations that bear on choices around inheritance tax, not least its unequal effects across the country. Figure 7.1 shows that there are far more inheritance-tax-liable estates per resident in the South of England.

Taking a longer-term view, the rapid growth of wealth compared with earnings over the past several decades has brought with it questions about the balance of taxation across generations and the growing role of parental wealth transfers in driving differences in life outcomes within

today's working-age generations. Inheritances have grown, and are expected to continue to grow, faster than earnings, meaning that they are projected to have a growing negative impact on intergenerational mobility (van der Erve et al., 2023). Put simply, it is becoming harder to use savings from earnings to make up for a lack of inheritance relative to others born at the same time. Questions around how inheritances should best be taxed will become more pressing with time.

In this chapter, we consider problems with the current design of inheritance tax, examine the revenue and distributional consequences of potential reforms, and discuss some wider issues about how the tax system operates at death. Our focus is on incremental reforms which build on the current structure of inheritance tax, although we note areas where more fundamental reform could be considered. We consider some reforms that expand the tax base and eliminate exemptions for certain types of assets. We also analyse the effects of reforms that would take some estates out of paying inheritance tax, including increasing tax-free thresholds and complete abolition of the tax. We show combinations of reforms that would bring certain assets into the inheritance tax base while at the same time reducing the tax liability for some. Our options encompass some that raise revenue, some that would reduce it and some that are revenue-neutral. While our focus is on inheritance tax, we also note some other ways in which taxation around the point of death should be reformed.

Section 7.2 sets out how inheritance tax currently works and Section 7.3 discusses the economic trends relevant to inheritances and inheritance tax. Section 7.4 outlines some principles of how an inheritance tax should be structured, with Section 7.5 discussing some problems with the current system's design. Section 7.6 quantifies the impacts of reform options. Readers should note that our policy costing estimates are quite uncertain and should in general be treated as indicative, because (i) the data we use have less good coverage of the very wealthiest, (ii) assets in the data do not map directly onto some of the reliefs present in inheritance tax, and (iii) we do not directly observe all gifts and transfers that people make. Section 7.7 lays out our recommendations for reform and concludes. Readers interested only in the effects of reforms and policy recommendations could begin reading at Section 7.6.

7.2 How does inheritance tax work?

Inheritance tax is a tax on the value of the 'net estate' when someone dies, i.e. it is a tax on the value of all the assets they own, less all the debts that they have, after accounting for exemptions. Gifts made within seven years of the death of the giver are also counted as part of the giver's estate, while those made more than seven years before death are not. There is no tax on the first £325,000 of net assets, while a 40% rate applies above this 'nil-rate band' (with

lower rates applicable for gifts made three or more years in advance of death). Where assets are transferred to a spouse or civil partner, they are generally exempted.

There are two common reliefs that mean that in practice the threshold for many is much higher than £325,000. First, there is a 'residence nil-rate band'. This provides an additional exemption for the first £175,000 of residential property, as long as the property is passed to direct descendants. The implication is that for many older people, there is no tax on the first £500,000 of net assets. For more valuable estates, worth more than £2 million, the residence nil-rate band is tapered away. For every additional £1 the estate is worth above £2 million, the residence nil-rate band is reduced by 50p, effectively increasing the marginal tax rate on each £1 of assets to 60p between £2 million and £2.35 million.

Second, there is the 'transferable nil-rate band'. Where assets are transferred on death to a spouse or civil partner, any unused portions of the ordinary and residence nil-rate bands are also transferred to the surviving partner. This means that on the death of the second spouse, for the vast majority, up to £1 million in assets can be passed on tax-free. Largely as a consequence of these reliefs, HMRC statistics show that only 2.1% of estates at death worth under £1 million paid any inheritance tax in 2020–21.

The complexities of the treatment of these various exemptions mean that the practical threshold of £1 million for the vast majority of couples is not always understood. While 16% of adults have individual non-pension wealth exceeding £325,000, only 8% of adults live in a family with non-pension wealth above £1 million. That said, among those in their 60s, 13% have family non-pension wealth of £1 million or more. Some of these assets will be spent prior to death, but, in conjunction with the fact that the nil-rate band threshold has generally been increased over time – or other reforms that take individuals out of tax introduced – this might mean that a higher proportion of people consider themselves potentially subject to inheritance tax than actually end up paying the tax.

As will be further discussed below, transfers of certain types of assets either are not counted as part of estates for inheritance tax purposes or are given further exemptions. This means that the effective tax rate can be lower – and in some cases much lower – than would be implied if only the above exemptions applied.

7.3 The outlook for inheritances and inheritance tax

The growth of inheritances

Recent decades have seen the flow of inheritances increase substantially compared with national income. The annual flow of non-spousal inheritances is estimated to have increased from 5% to 8% of GDP between the early 1980s and mid 2000s (Alvaredo et al., 2017; Atkinson, 2018) and has likely continued growing since then. If the annual flow of inheritances was equally shared across those aged 25, this would imply a transfer to each person of around £120,000.

This increase in inheritances happened partly because of the expansion of private ownership of housing over time and across generations. While only 40% of those born around the turn of the 20th century owned their own home at age 70, this increased to over 70% of those born from the 1930s onwards (Corlett and Judge, 2017). This means that, over time, a greater share of those dying have had some property wealth to bequeath. In addition, the value of wealth has increased rapidly compared with GDP in recent decades, meaning the value of assets passed on at death has risen compared with people's incomes. Average house prices increased from around four times average household incomes in the early 1990s to around eight times at the eve of the financial crisis and have stayed around this level since then.

Recent research at IFS has found that in the coming decades, the size of inheritances is likely to increase further, as compared with the incomes of receivers (Bourquin, Joyce and Sturrock, 2021). There are several reasons to expect this further increase in the importance of inherited wealth in future years. First, subsequent generations of older households are significantly wealthier than those that went before them, even when compared at the same point in their life cycle. For example, those who were born in the 1940s, and therefore aged between 73 and 83 today, on average had almost £100,000 or about 30% more household wealth (in real terms) when in their early 70s than did those born in the 1930s. Similarly, the 1950s-born generation, now largely into retirement, is about 25% wealthier, on average, than the 1940s-born generation (Sturrock, 2023). As the drawdown of non-pension wealth at older ages is typically modest (Crawford, 2018a and 2018b), we can therefore expect more wealth to be passed down by each generation that comes to the end of life in the coming decades.

The second reason that inheritances can be expected to increase compared with the incomes of receivers is that the number of children per person is decreasing as we look across the generations of older people. That is to say that each generation of younger people, i.e. future inheritors, will have to share their parents' estate with fewer siblings. Those born in the 1980s have on average 1.8 siblings, compared with 2.0 and 2.5 for those born in the 1970s and 1960s respectively (Bourquin, Joyce and Sturrock, 2020). Even without an increase in the value of

estates at death then, assuming all wealth is given to a direct descendent, this would drive a 25% increase in the average inheritance received between those born in the 1960s and those born in the 1980s.

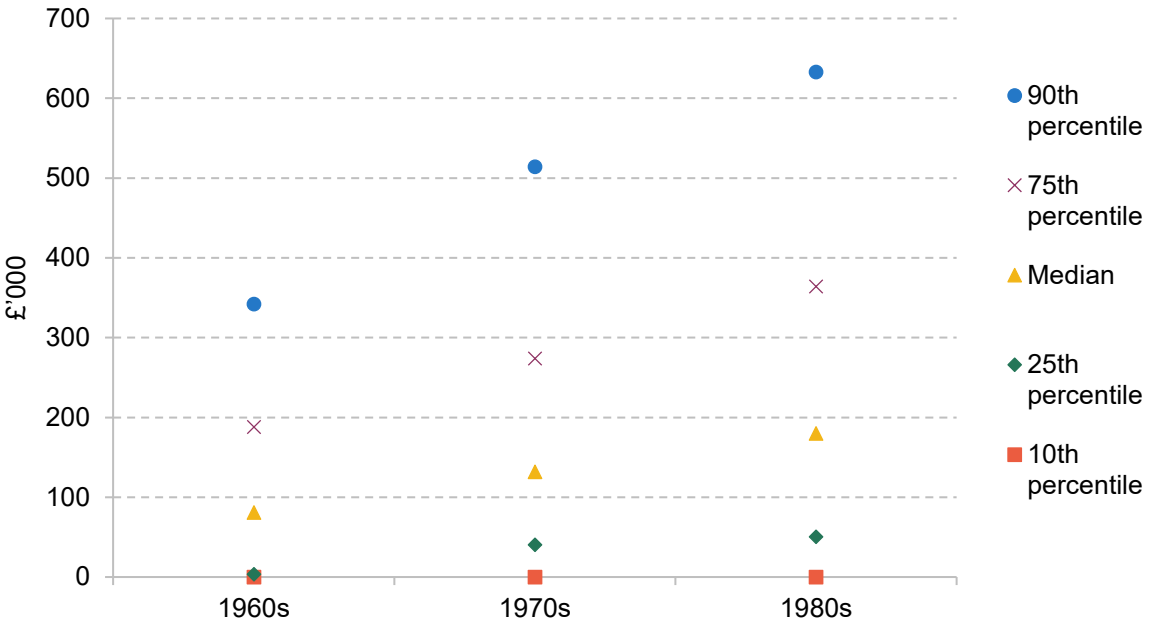
Finally, while these two aforementioned factors would be expected to drive an increase in the size of inheritances received in absolute terms, a lack of growth of non-inherited wealth and earnings across receiving generations will mean that these inheritances are set to be an increasing share of lifetime resources for subsequent generations of inheritors (Bourquin, Joyce and Sturrock, 2021). In other words, it is becoming more difficult for younger generations to accumulate wealth through non-inherited means. While earnings during working life were around 30% higher in real terms for the 1940s-born generation than for the 1930s-born on average, this rate of increase has stagnated in recent decades and the 1980s-born generation has remarkably started working life with lower average earnings than their predecessors (Sturrock, 2023). This has driven a similar stagnation in wealth accumulation of younger generations. Consequently, inheritances are expected to double in importance in the coming decades, rising from 9% of lifetime income for someone born in the 1960s to 16% for someone born in the 1980s (Bourquin, Joyce and Sturrock, 2021). There is, of course, huge uncertainty around any such projections. The last year has, for example, seen the outlook for interest rates and asset prices change substantially, such that the wealth to income ratio is now expected to decline in the coming years (Broome, Mulheirn and Pittaway, 2023). Nevertheless, it would take huge changes in the economic outlook or in individual behaviour to offset the trends that are expected to lead to an increased importance of inheritances. While the magnitudes are uncertain, it is probably safe to say that, absent a very large shock, inherited wealth will be of growing importance across generations of young people in the coming years and decades.

Implications for inequality and social mobility

One of the commonly discussed concerns about the growth of inheritances, and one of the main normative justifications given for an inheritance tax, is that inheritances will reduce social mobility.

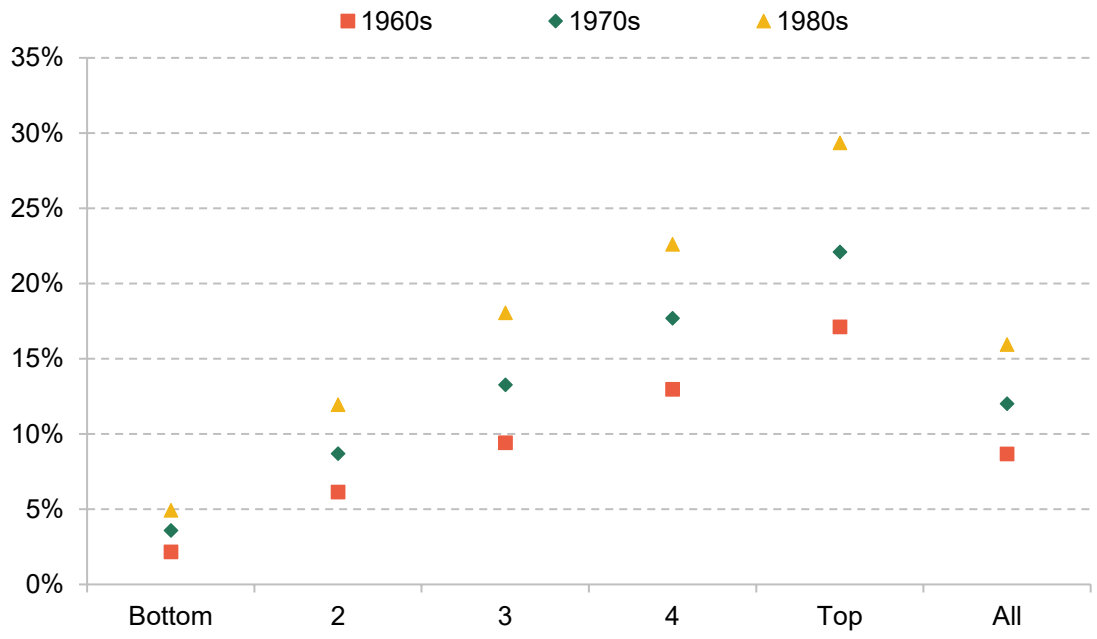
Younger generations are expected to inherit increasingly large sums as a whole. However, these will not be equally spread. Within each generation of older people, there is a substantial minority who do not own their own home and have minimal other bequeathable wealth. Their children therefore cannot expect to receive any substantial inheritance. As shown in Figure 7.2, while the parents of someone born in the 1980s has wealth per heir of around £180,000 at the median, over 10% of parents have no wealth to bequeath. At the upper end, 25% of individuals have parents with wealth per heir of over £360,000, with the top 10% richest parents having over £600,000 to potentially leave to each heir.

Figure 7.2. Distribution of per-heir parental wealth at parental age 65, by decade of birth



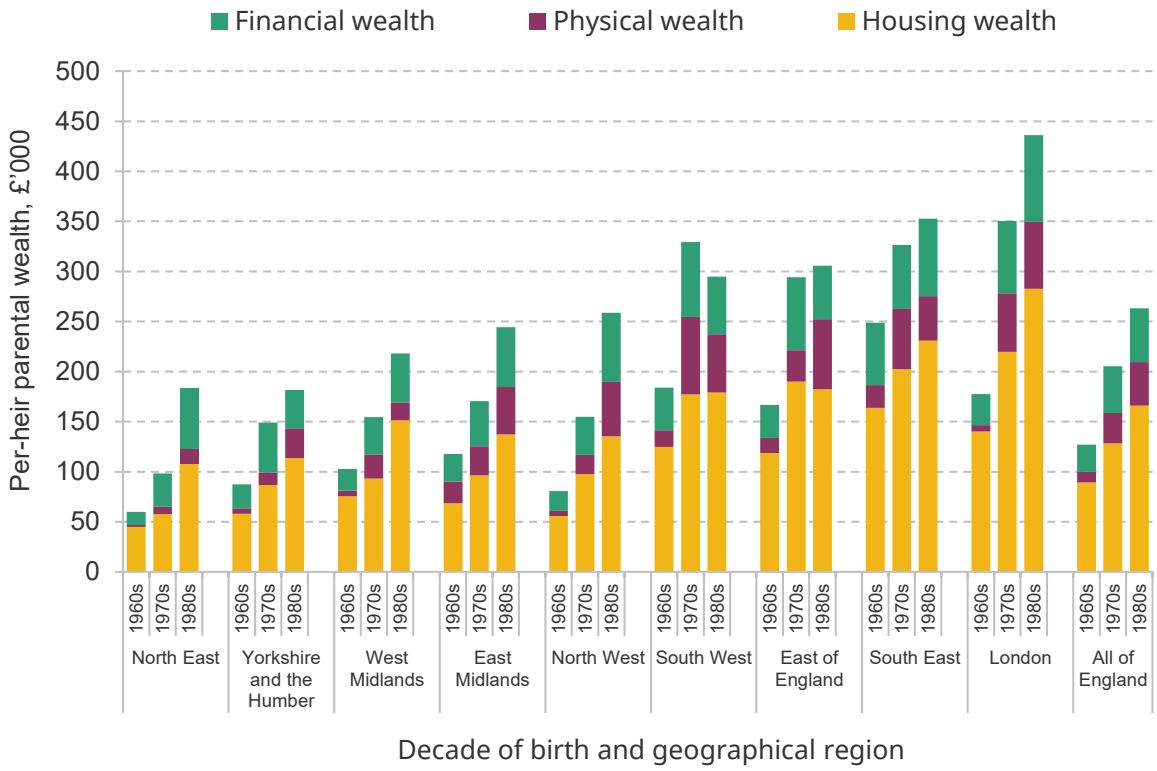
Source: Bourquin, Joyce and Sturrock, 2020. Uprated to 2023 prices.

Figure 7.3. Median inheritance as a percentage of lifetime (excluding inheritance) net income, by parental wealth quintile and decade of birth



Source: Bourquin, Joyce and Sturrock, 2021.

Figure 7.4. Per-heir parental wealth by decade of birth and region



Source: Bourquin, Joyce and Sturrock, 2020. Uprated to 2023 prices.

Together with the growing importance of inheritance as a part of lifetime economic resources, this inequality in future inheritances means that parental wealth is set to be a greater driver of lifetime income across younger generations. Figure 7.3, taken from Bourquin, Joyce and Sturrock (2021), shows the growing impact that inheritances are projected to have on differences in lifetime income between those with wealthy and less-wealthy parents. Bourquin et al. projected that while inheritances would make up less than 5% of the value of non-inheritance lifetime income for those with the least-wealthy fifth of parents in each of the 1960s-, 1970s- and 1980s-born generations, they will be of growing importance for those with the wealthiest parents, rising from 17% of lifetime income for those born in the 1960s and with parents in the wealthiest fifth to almost 30% of lifetime income for those born in the 1980s. In other words, whether you have high or low lifetime income is set to become more related to your parental background in the future than it is today or was in recent decades.

Inheritances will also vary substantially by where you grew up because of the strong geographical pattern to wealth levels. According to Nationwide regional house price data, average house prices in London in the second quarter of 2023 were £517,000. This compares with £154,000 in the North-East of England. Figure 7.4 shows that the expansion of parental wealth, combined with this geographical difference in wealth levels, means there is an expanding gap in parental wealth – and therefore potential future inheritances – between those

with parents living in different parts of the country. Notably, the gap between those with parents in London and the rest of the country has opened up across generations. Among those born in the 1960s, total parental wealth per heir was around £175,000 for those whose parents lived in London. This was comparable to figures for the East of England and the South West and was only around £50,000 more than the figure for the whole of England. For the 1980s-born generation, wealth per heir for those with parents living in London is around £440,000, by far the highest of any English region. This is over £170,000 higher than per-heir wealth for England as a whole and £250,000 higher than the figure for the North-East.

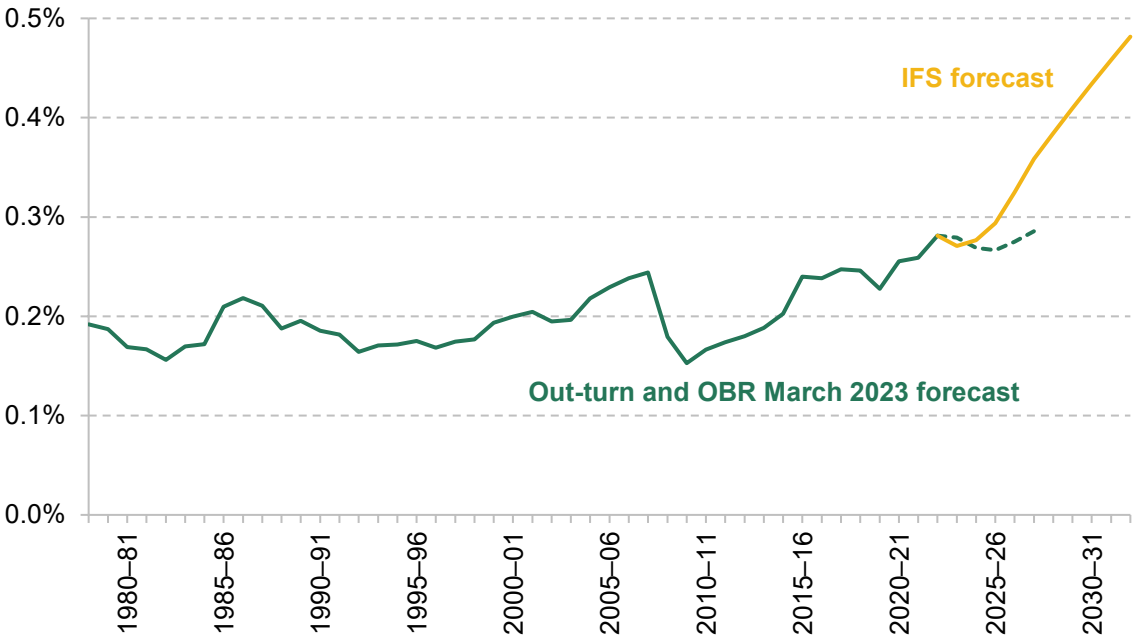
There are also important ethnic differences in parental wealth. Among those aged 25–39, around 75% of white individuals and around 85% of Indian individuals have homeowning parents, compared with less than 50% of black Caribbean young people (van der Erve et al., 2023). Ethnic minority groups are under-represented at the upper end of the wealth distribution. Just 6% of Indian people are in the top 15% of the wealth distribution, as are 4% of black people and 2% of Pakistani and Bangladeshi people. While part of these differences is accounted for by the different age distributions of ethnic groups, significant gaps from the white majority remain even once this is accounted for (Bourquin, Brewer and Wernham, 2022).

Implications for inheritance tax revenues

Inheritance tax revenues are modest in size and only a small portion of overall government revenues (0.7% of revenues in 2022–23). As inheritances have risen compared with GDP, inheritance tax revenues have also risen modestly as a share of GDP. They have risen from around 0.2% of GDP in the 1980s and 1990s to 0.28% of GDP in 2022–23 (Figure 7.5). The increase in inheritance tax revenues has been tempered by changes to the parameters of inheritance tax that have made the system more generous. In 2007, the transferable nil-rate band was introduced, meaning that spouses (and civil partners) could transfer unused portions of their nil-rate band to their surviving partner. The residence nil-rate band was phased in from April 2017, moderating the increase in revenues between 2017–18 and 2020–21.

Looking forward, over the next five years, the Office for Budget Responsibility (OBR) forecasts that inheritance tax revenues will be broadly flat as a share of GDP, falling then rising slightly, in line with the outlook for house prices. In order to look further into the future, we make a projection of inheritance tax revenues up to 2032–33. We find that the increase in wealth levels held by successive generations of older people can be expected to translate into rising revenues as a share of GDP. While the OBR forecasts that revenues will rise from £7.2 billion in 2023–24 to £8.4 billion in 2027–28 (worth £8.2 billion in 2023 prices), we forecast that they will rise to £10.3 billion (in 2023 prices) by 2027–28, a difference of £2.1 billion in 2027–28 or 26% of revenues. In other words, the additional revenue that we forecast would, if correct, be sufficient for the Chancellor to cut the rate of inheritance tax from 40% to 32%. Without that change, we forecast that revenues will then continue to rise to £15.3 billion (in 2023 prices) by 2032–33, or 0.48% of GDP.

Figure 7.5. Inheritance tax revenues as a percentage of GDP



Note: Includes estate duty and capital transfer tax, the predecessors of inheritance tax. Dashed line indicates OBR forecast. Yellow line indicates IFS forecast.

Source: OBR's March 2023 Economic and Fiscal Outlook, IFS revenues composition spreadsheet, and authors' calculations using the Wealth and Assets Survey.

In terms of the number of people affected by inheritance tax, the most recent HMRC statistics show less than 4% of estates paid inheritance tax in 2020–21. However, the rapid growth in wealth among older individuals means this number is set to rise to over 7% by 2032–33. The number of people affected by inheritance tax will be still larger. One in eight people (12%) will have inheritance tax due either on their death or their spouse or civil partner's death by 2032–33. This varies dramatically between the different regions of the country: in London, around 23% of people (or their surviving spouse or civil partner) will pay inheritance tax in 2032–33, almost twice the national average and five times higher than in the North East.

In making this projection, we use the OBR's assumptions for the growth in asset prices and nominal GDP to project forward the wealth holdings of older people that are measured in the Wealth and Assets Survey. In addition to changes in wealth due to asset price changes, we assume modest drawdown on wealth as households age, at a rate of 2% per year for housing wealth and 3% for other taxable wealth. We use Office for National Statistics (ONS) mortality rates that vary by age and sex to project which individuals will pass away and bequeath their wealth, assuming that the first of those to die in couples bequeaths all wealth to their surviving spouse or civil partner. We apply the inheritance tax system to projected estates, assuming that the nominal freeze of inheritance tax thresholds comes to an end in April 2028 and that thresholds are uprated in line with CPI inflation thereafter, in line with stated government policy. The main reason that we project substantially more growth in inheritance tax revenues than the

OBR is that we take account of the fact that subsequent generations have higher wealth holdings whereas the OBR forecast does not. We further discuss our method and compare it with the OBR's forecast in Appendix 7A.

7.4 Principles of inheritance taxation

The arguments for and against taxation of wealth transfers – and around how and to what extent these transfers should be taxed – are complex. The economic issues that bear on this question include why people make wealth transfers and how transfer choices respond to taxation, and the evidence here is far from conclusive. What policy should be implemented also depends heavily on the normative principles of policymakers. We do not seek to review all of the arguments here. Instead, we outline what economic principles would suggest about the design of a system of taxation of wealth transfers, if one is in place. For comprehensive discussion of the issues around wealth transfer taxation, see Boadway, Chamberlain and Emmerson (2010) and Kopczuk (2013).

The treatment of different types of assets

There is a strong case that if there is an inheritance tax then it should apply in the same way across all forms of wealth inherited. There are two reasons for this. The first is one of equitable treatment between those who do (and perhaps are more able to) transfer wealth in some forms rather than another. The second is an argument from economic efficiency. When choosing the form in which to hold their wealth, people will consider a range of factors including the ease of access or hassle involved with holding wealth in some forms, the financial return they can obtain, including how risky that return is, and the tax treatment of that asset. When some assets are treated differently by the tax system from others, this has the potential to distort decisions so that wealth is not held in the way that will maximise its economic returns, subject to the needs of the holder of that wealth. This may mean that investment decisions in the wider economy are also impacted, with the potential for investments with higher societal benefits to be forgone because others are more favourably treated by the inheritance tax system. Arguments are sometimes made in favour of exempting some assets, such as businesses, but on balance we do not believe the arguments here are strong, as discussed in the next section. Efficiency arguments for exemptions, based on a desire to encourage investment in particular asset classes, are also inconsistent where they do not apply to the asset returns, merely on transfer.

The treatment of transfers made at different points in time

On the face of it, there is a strong case that the tax system should treat gifts made while alive in the same way as wealth transfers at the point of death, and that is the approach taken in many countries with some form of wealth transfer taxation. The arguments come from equity of treatment of those able and not able to make such gifts, and from efficiency, because of the

potential for gifts to be used to avoid inheritance tax, if not taxed. There are also arguments in favour of a lower tax rate on lifetime gifts than on inheritances. First, at least some of the wealth left at death may not be intentionally left to heirs but instead be merely wealth unspent as a result of uncertainty about the lifespan of the deceased or their inability to access and run down housing equity. Taxing such inheritances will not lead to a change in economic behaviour and will therefore be a way of the government raising revenue without causing costly economic distortions. The same cannot be said of gifts which are intentionally made. Second, gifts may respond to the needs of the receiver to a greater extent than inheritances and so discouraging them may be more costly. However, the extent to which bequests are left intentionally or unintentionally is hard to estimate – using whether or not they are made at death is a rather crude proxy – and large gifts do not appear to respond substantially to receivers' financial circumstances (Boileau and Sturrock, 2023b; Groot, Möhlmann and Sturrock, 2022). There is therefore a strong case in practice for preventing lifetime gifts from being used for inheritance tax avoidance by including them within estates (or taxing them when made).

Whether tax should be levied on estates bequeathed or on inheritances received

Inheritance tax is oddly named because it is a tax on the estate of the deceased rather than being levied on the wealth received (the 'inheritance'). The distinction is important because levying a tax on the receiver allows the tax to vary by their circumstances, including their other sources of wealth and income. That is, it would allow for a transfer of £500,000 to a millionaire to be taxed differently from a transfer of £500,000 from the same estate to someone who is poor. There are arguments in favour of taxes levied on estates and in favour of taxes levied on inheritances, and these depend on the ultimate justification for taxing wealth transfers. We note here that if the aim of an inheritance tax is to reduce the effect of inherited wealth on inequalities in economic resources between those with richer and poorer parents, then it would make sense for that tax to vary according to the other economic resources of the receivers of inheritances. Under such a system, one might wish to levy taxes based on the lifetime receipt of wealth transfers. Such a change in the tax structure would be a significant departure from the current system and, despite the fact that it has been recommended as the most appropriate way of taxing inheritances and *inter vivos* transfers by numerous economic analyses, commissions and reports (e.g. Meade, 1978; Intergenerational Commission, 2018), does not appear to be presently under consideration, and so we do not consider it further here.

Relationship between inheritance tax and other taxes

Inheritance tax should not be seen as a replacement for other taxes, such as taxes on returns to wealth. Where taxes would apply when someone did not die, such as capital gains tax on increases in the price of assets or income tax on pension pots when drawn down, the occurrence of death should not lead to any relief from the paying of these taxes. Where this leads to two

taxes being paid at the same point, sometimes described as 'double taxation', it is only making explicit the fact that (at least in some cases) inheritance tax will represent taxing assets that are taxable for some other reason apart from their transfer between individuals. The case for having an inheritance tax rests on being able to justify such double taxation (Summers, 2021). However, it is also worth noting that the two biggest asset classes in the UK – (main) homes and pensions – are exempt from taxes such as capital gains tax. Any special treatment of assets inherited would again give rise to equity and efficiency issues. Some may – unfairly – avoid these taxes, if they held their wealth in a form that was given special treatment. The potential to avoid tax at death may lead some assets to be held onto past the point where this would otherwise be of economic benefit to the holder or their heirs.

7.5 Problems with the current system of inheritance tax and taxation at death

In its current form, inheritance tax has a number of problems, each leading to different forms of unfairness and inefficiency. This section discusses these issues in some detail. Those interested in our recommendations and impacts of reforms may wish to proceed to Sections 7.6 and 7.7.

Many of the issues with inheritance tax relate to privileged treatment given to particular classes of assets: residential property, pensions, agricultural land, and businesses all have special treatment. The treatment given to lifetime gifts – important to consider in conjunction with the taxation of inheritances – also has problems, as does the treatment of gifts made to charities. In some ways the UK system of wealth transfer taxation shares some similar problems with other countries but in some ways it is unusual (see Box 7.1).

Box 7.1. International experience of wealth transfer taxation

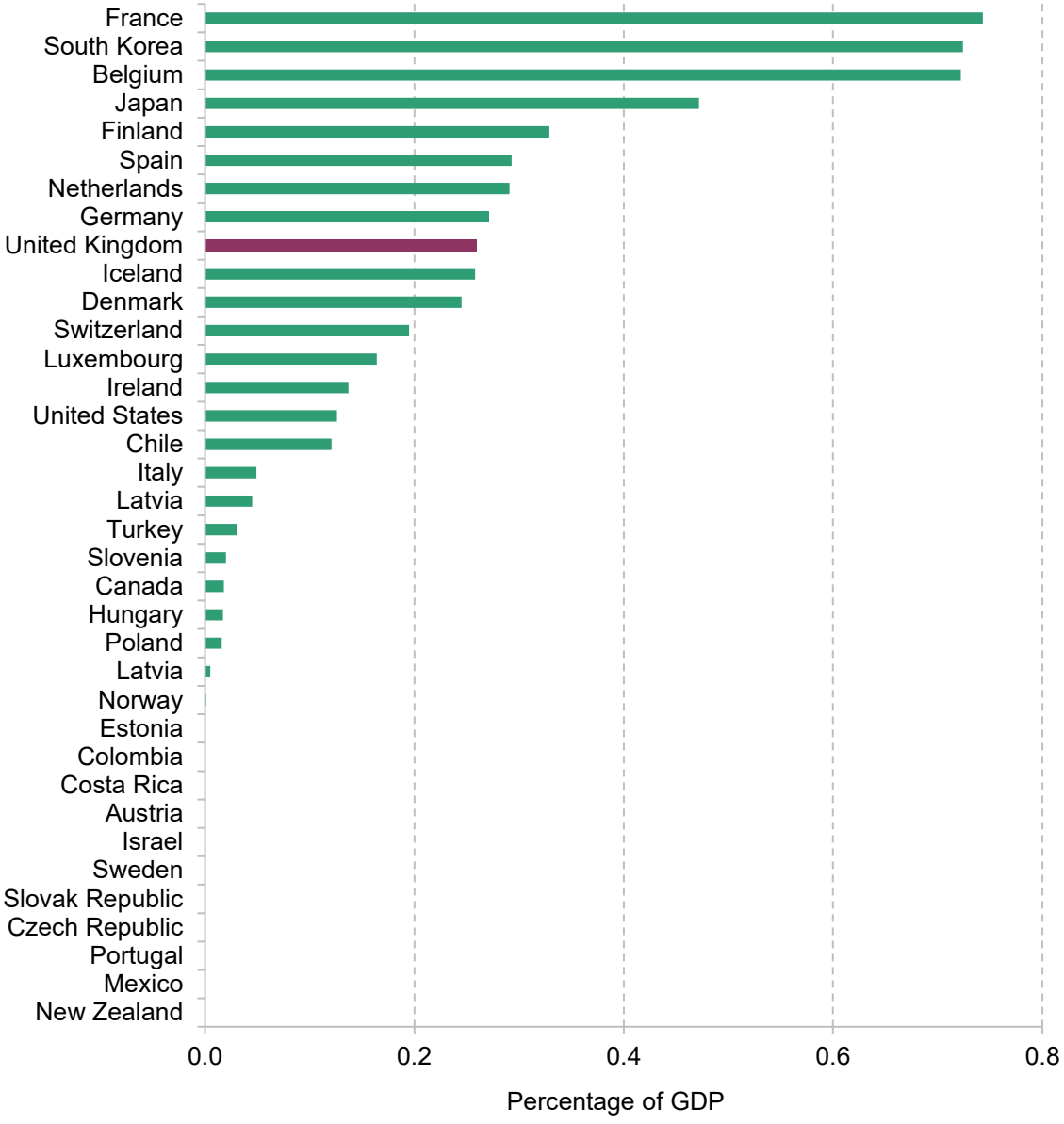
The design of inheritance, estate and gift taxes varies considerably across developed countries. In two key respects, the UK is unusual in how it structures inheritance tax.

First, while most advanced countries levy recipient-based inheritance taxes, the UK is one of just four OECD countries to levy taxes on estates passed on by donors (OECD, 2021). Recipient-based taxes allow for differential tax treatment based on the size of each recipient's inheritance and other personal characteristics, and a majority of OECD countries use this flexibility to apply graduated inheritance tax rates. The UK is one of only seven to apply a flat rate above an exemption threshold (OECD, 2021).

Second, the UK is unusual in completely exempting all gifts from taxation, provided that they are made sufficiently far in advance of death. Other countries that treat *inter vivos* gifts differently from inheritances tend to implement tax-free thresholds, which may be renewed at intervals or applied at the

lifetime level. The UK's approach is also distinctive in that gifts must be made a relatively long time before death (seven years) in order to avoid being recharacterised as inheritances. Among OECD countries applying such restrictions, most choose periods from one to three years.

Figure 7.6. Revenue from inheritance, estate and gift taxation in OECD countries as a share of GDP, 2021



Source: https://stats.oecd.org.

In terms of how heavily inheritances are taxed, one can consider the tax-free threshold, rates schedule and, at a more macro level, the proportion of inheritances or estates taxed and the revenues from the inheritance tax as a share of GDP. Exemption thresholds vary dramatically, with some countries, including Belgium and the Netherlands, having exemptions in the low tens of thousands of euros. The UK's exemption threshold puts the proportion of wealth transfers being taxed at the lower end by

international experience, but its single tax rate of 40% is relatively high. Consequently, among OECD countries with taxation of inheritances, the UK is in the upper-middle of the pack in terms of revenues as a share of GDP (Figure 7.6). Revenues are substantially higher than in the US or Ireland, for example, but less than half as much as what is raised in Belgium, France and South Korea. Overall, in all advanced economies, revenues from wealth transfer taxes are quite small, at less than 1% of GDP.

A number of countries do not have an estate or inheritance tax and some advanced economies have abolished the tax in recent years. Austria, Portugal, Sweden and Norway all abolished their inheritance taxes within the last 20 years. Other countries have seen permanent or temporary reductions in the scope or rate of the tax (e.g. Italy and the US) or the introduction of substantial new reliefs (e.g. Germany).

Finally, one aspect that is common across most countries that have an inheritance tax is capital gains uplift being applied to assets at death.

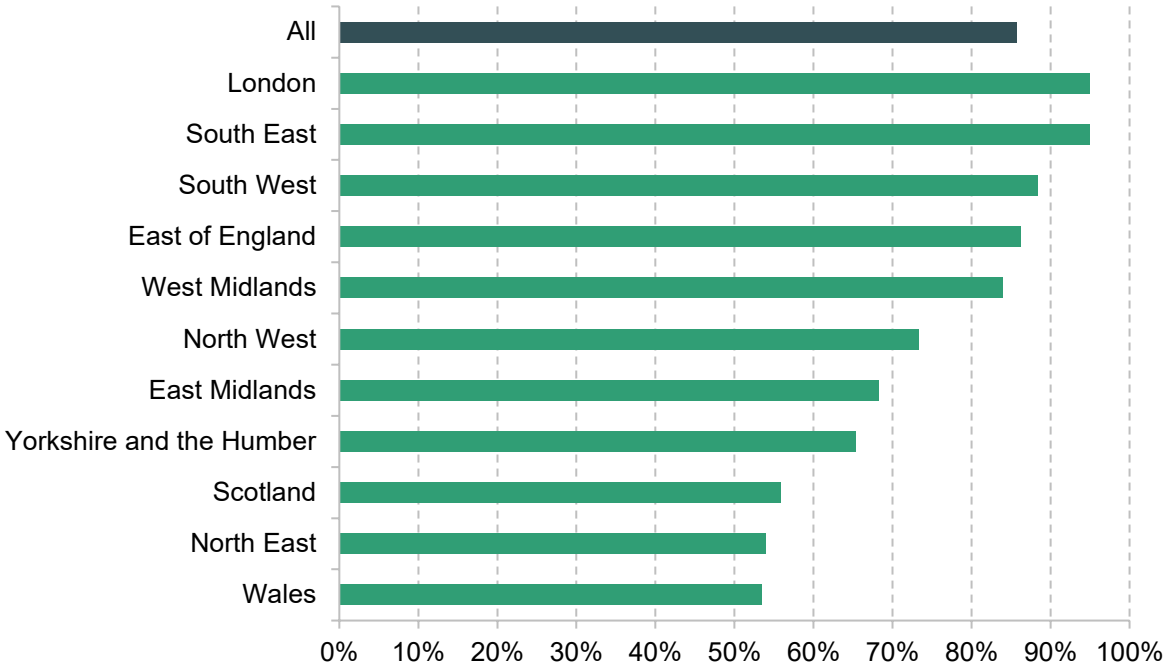
Treatment of property

The residence nil-rate band means that residential property wealth is treated distinctly from most other assets. In particular, as described above, there is an additional amount of wealth that is not taxed if an individual owns a residential property and they pass it on to a direct descendant. This residence nil-rate band can be claimed on at most one property that the deceased individual lived in at the time it was included in their estate.

This creates two obvious sources of unfairness. First, since it applies only to residential property, it disadvantages the small share of individuals who die with more than £325,000 in net assets but less than £175,000 in residential property assets. Given the huge variation in house prices across the country, the residence nil-rate band is effectively much less generous to those living outside London and the South East of England. As shown in Figure 7.7, 86% of individuals with over £500,000 in non-pension assets own property worth more than £175,000, but this varies from 95% in both London and the South East, to just 53% in Wales.

Second, since the residence nil-rate band only covers assets passed to direct descendants, those without children or grandchildren will have a larger amount of tax taken before the assets are passed to inheritors. This would apply a higher effective tax rate on assets someone chose to pass to their siblings, nephews and nieces, or friends, even where those individuals may already live in the property with them. Having a rich uncle or aunt is therefore less advantageous than having a rich parent.

Figure 7.7. Percentage of individuals across Great Britain in 2018–20 who, conditional on non-pension wealth over £500,000, have housing wealth of over £175,000, by region



Source: Wealth and Assets Survey round 7.

Together these restrictions mean that in 2020–21 almost 5,000 estates worth between £325,000 and £500,000 had to pay inheritance tax, making up 18% of all estates paying inheritance tax. It is hard to see the rationale for this special treatment of residential property passed to direct descendants. One might think that it relates to some special value of the family home. But there is no necessity for the residence passed on to be one that has been in the family for any amount of time. There is also no necessity for the inheritors to keep the property; as the HMRC guidance highlights, the lower tax rate applies even if the deceased's will explicitly calls for the home to be sold and the cash from the home to be divided between his or her children. To prevent the tax benefits of homeownership encouraging people to stay in an unsuitably large home, there is downsizing relief, which allows the tax benefit to remain even where a property has been sold, highlighting the lack of connection between the tax break and transfer of the actual home itself. It also adds additional complexity into the tax system.

A sensible reform would therefore be to combine the nil-rate band and residential nil-rate band into a single tax-exempt amount which does not depend on what assets are held or who they are passed to. If there is a desire not to extend this higher nil-rate band to high-wealth individuals, a taper could remain in place removing 50p for every additional £1 of wealth between £2 million and £2.35 million.

Treatment of pensions

Defined contribution (DC) pensions are one of the lowest-taxed routes to making a bequest. On death, funds remaining in DC pension pots can be inherited by heirs but are not counted as part of the deceased's estate. These funds therefore escape inheritance tax entirely. In combination with the introduction of the 'pension freedoms' reforms of 2015 – which removed the requirement to use accumulated DC funds to purchase an annuity – and the abolition at Budget 2023 of the charge on pensions exceeding the lifetime allowance of £1,073,100, this means DC pensions are a highly effective vehicle for passing on wealth to heirs in a tax-favoured fashion.

In addition, generally no income tax is levied on withdrawals from inherited pension pots if the giver dies below the age of 75. Income tax is, however, payable by the recipient if the pension is inherited from someone who died at 75 or older. Given that pension contributions are relieved of income taxation when made, this means that DC pensions bequeathed by those dying under age 75 escape income taxation at any point. Recent government documentation setting out the implementation of the lifetime allowance abolition suggests that this exemption will be curtailed for those taking withdrawals as regular income (HM Revenue and Customs, 2023b). We estimate that around £1 billion in pension pots will be bequeathed by those who die under age 75 without a surviving spouse in 2024–25. Assuming that these pension pots were spent over a period of several years, the amount of additional income tax generated by this reform would initially be in the tens of millions per year, but would grow over time.

As set out in detail in Adam et al. (2022), there is no good justification for this exceptionally generous tax treatment of pensions bequeathed. Sensible reform would bring pension pots into inheritance tax and apply income tax on all withdrawals from inherited pension pots. Adam et al. discussed some issues around how exactly this could be implemented. If inherited pensions face income tax on withdrawal, their inheritance tax treatment should recognise the fact that they are less valuable than the equivalent amount inherited in cash or other assets that do not attract income tax. Adam et al. proposed applying inheritance tax to 80% of the value of bequeathed pension pots (equivalent to applying inheritance tax to the value of the pension after basic-rate income tax has been deducted), or levying income tax at the point of death rather than withdrawal, in which case 100% of the post-income-tax value should be subject to inheritance tax. The latter reform would bring forward the levying of income tax to the point of death rather than subsequent withdrawal but it is primarily a re-timing of revenues so we do not estimate the income tax revenue effects of implementing one version of the reform versus the other.

The growing importance of DC wealth in households' portfolios means that reforming the taxation of DC pension pots at death would have a growing impact over time. Undertaking reform sooner rather than later would therefore be wise. There is a particularly strong case for taking action as soon as possible if the government deemed it appropriate to phase in such a

reform gradually (which could be done by gradually increasing the rate of inheritance tax according to the date of birth of the deceased).

Agricultural and business reliefs

Agricultural relief completely exempts from inheritance tax the value of all farms, after a minimum holding period. Land farmed 'in hand', i.e. by the owner, is exempted after two years. After seven years, it is exempted even if let out to someone else.

The latter criterion makes it clear that this exemption cannot be justified by reference to the protection of small family farms, since it does not require the benefiting estate to have ever actually farmed the land. The uncapped nature of this exemption also means it is poorly targeted if the intention is to protect small farms.

Business relief completely exempts from inheritance tax the value of interests in a business and of shares in an unlisted company, as long as the business is not merely a holding company for other investments. Business relief therefore covers both private businesses and partnerships where the deceased exercised control over the business, and shares of unlisted businesses where the deceased was merely an arm's-length investor – for example, AIM shares.

Again, the rationale for the structure of this relief is difficult to understand: if the intention, as is sometimes suggested, is to protect small family firms, then it should not cover businesses owned at arm's length. In fact, by value, around 80% of all business relief applies to shares in unlisted traded businesses (most notably AIM shares) where the deceased most likely did not exercise any control. If the focus is on small businesses, it would also seem natural to limit the total benefit from this relief to target small firms better.

More broadly, it is not clear that protection even for small farms or businesses is a sensible rationale at all. The existence of agricultural and business reliefs currently means an equivalent amount of revenue needs to be raised from some other source. By not taxing inheritors of these assets, potentially to make it easier for them to retain control of the assets, those who consequently face higher tax are less able to purchase or invest in these assets. It is also worth noting that the empirical evidence suggests that family-owned firms that have non-family management perform similarly to those with dispersed shareholders, and both perform better than businesses that are both owned and managed by a family (Bloom, Sadun and Van Reenen, 2010). From a productivity standpoint, there is therefore little case for trying to maintain family ownership.

One objection made to the taxation of agricultural land and of privately held businesses is that their value may be hard to ascertain, and hence they should be fully relieved. This is inconsistent with the fact that such assets have to be valued in many other contexts, such as on divorce or

when there are shareholder disputes. The 100% relief applicable to these assets has also only existed since 1992, before which valuations were needed for inheritance tax purposes. Looking internationally, across the OECD only Germany, Ireland and the Netherlands have reliefs similar to agricultural relief. Other OECD countries that have reliefs like business relief also have far greater restrictions on when relief is available, and the conditions often require the business to be continued.

In 2020–21, 1,300 estates benefited from agricultural relief, relieving almost £800,000 of wealth from inheritance tax per claimant, on average, and reducing government revenues by £400 million. In the same year, 3,380 estates benefited from business relief, with an average of £950,000 in assets relieved and a loss of £730 million in revenues. These averages mask substantial variation, which we will see below means for businesses that much of the benefit goes to only a small number of recipients. Similar figures can be seen in previous tax years, so these numbers are not unusual despite the potential for higher deaths because of the pandemic. These figures also do not take into account lifetime giving, where use of agricultural or business relief may be substantial. For example, these reliefs can be used to avoid the 20% entry charge for gifts into trust, as well as not using up any of the nil-rate band were the giver to die within seven years.

Together these reliefs are estimated to cost £1.1 billion for transfers on death, or 20% of the total revenue raised by inheritance tax from deaths in 2020–21. This is a large sum and, as we show below, revenue from reforms to inheritance tax that restricted these reliefs could be used to substantially reduce the headline tax rate or increase the nil-rate band in a revenue-neutral way.

Charity exemption

Money left to a registered charity or club in a will is exempt from inheritance tax (as are gifts to political parties). Since 2012–13, if at least 10% of the value of the estate is left to registered charities, the headline tax rate applying to the remaining assets falls from 40% to 36%. Almost 10% of taxpaying estates make use of this 10% rule to reduce their tax rate, but these estates make up more than 95% of all gifts to charity on death (Office of Tax Simplification, 2019).

As with in-life charitable reliefs, these two measures provide a subsidy for charitable giving. In this case, these subsidies are targeted at those with estates over the inheritance tax threshold but it is unclear why this group should benefit from a higher subsidy for charitable giving than those with less wealth. If the government wishes to incentivise gifts to charities, it would be better to do this by offering a flat rate of matching of individuals' donations. In the case of inheritance tax relief, the benefits accrue particularly to charities that older individuals support.

A further downside of the current structure for the tax break is that it disincentivises giving to charity in older age, as individuals with low incomes but high wealth will benefit more by

delaying the gift until death, when their estate will benefit from the reduction in the inheritance tax rate.

In 2020–21, the exemption of charitable giving from inheritance tax meant a loss of £0.8 billion in revenue. The fiscal cost of the reduced inheritance tax rate on estates where 10% or more of the estate is donated to charity is relatively small. Around £50 million of tax revenue was lost in 2020–21 as a result of estates benefiting from a reduced tax rate due to charitable giving. On average, this is worth around £25,000 per estate that made use of the reduced rate.

Treatment of gifts

Overall, the annual flow of gifts is around 20% of the annual flow of inheritances (Boileau and Sturrock, 2023a). Gifts are currently tax-free if made seven years or more before death and count towards the estate and nil-rate band if given less than seven years before death. There are exemptions for some gifts even within this seven-year period. There is an 'annual exemption' for up to £3,000 in gifts, and other exemptions apply for gifts made for particular purposes (such as weddings) and regular gifts 'out of income'. Gifts can be taxed more lightly than inheritances (given 'taper relief') if given between three and seven years before death; shorter than three years and they receive no relief. Gifts also count towards the nil-rate band in the order they were given. That means that an individual with £325,000 in nil-rate band needs to give over £325,000 in gifts in the period between seven and three years before their death before they begin getting this 'taper relief' on further gifts.

The complete exemption for gifts that are 'normal expenditure out of income' exists because forerunners to inheritance tax were concerned with the transfer of wealth rather than income. The distinction is a difficult one to maintain, because if income were saved rather than gifted, it would ultimately become part of wealth. Many of the gifts covered by this exemption are large: 45% of claims for this relief were for gifts exceeding £25,000 in 2015–16 (Office of Tax Simplification, 2019). If the rationale for inheritance tax relates to the transmission of resources across generations, gifts out of income should be treated no differently from any other gifts. We therefore recommend removal of this exemption. We acknowledge that implementation of this would require further work given that this exemption gives licence for some individuals to not have to track some frequent small purchases (e.g. spending on cohabiting non-spouses).

The form of taper relief may be considered odd. One might expect that a gradual reduction in the tax rate applied to gifts as they are further away from death would be designed so that the effect of a gift on inheritance tax liability gradually diminishes as that gift gets further from death. But under the current system, whether a gift up to £325,000 is made just after or just before seven years before death results in a change to the inheritance tax bill for a taxpaying estate by the full 40% of the gift amount. And gifts have this full effect for taxpaying estates regardless of when they are given within the seven years before death.

As a simple example, someone giving away £325,000 of cash to their child, and then leaving a further £325,000 in cash (and no other assets) on death would have £130,000 tax paid on their estate if their death were 6 years and 364 days after the gift: the gift uses up their nil-rate band, and 40% is payable on the remaining estate. This would also be true if the person had died just a day after the gift, or anywhere in between. But if they had instead died 7 years and 1 day after the gift, the gift would fall entirely out of the estate, and so their estate would pay nothing at all. If the government wanted a system where gifts are gradually less important for inheritance tax bills as they are made further from death, the proportion of the gift that is counted as part of the estate could be tapered down to zero, for example. But it is hard to see any rationale for the current set-up of taper relief. However gifts are taxed, we agree with the Office of Tax Simplification's (2019) recommendation that taper relief be abolished.

Abolishing taper relief would mean an increase in inheritance tax paid by those making large amounts of gifts before death, which exceed their nil-rate band. Even among individuals covered by inheritance tax, those who have liquid assets large enough that they are able to give away more than £325,000 are unusually wealthy, making taper relief regressive.[2] Other individuals would not see any increase in the tax paid by their estate if taper relief were abolished.

A wider question is how gifts prior to death should be taxed. One reason to tax them is to reduce the scope for 'deathbed giving': giving away assets shortly before death, to get them outside the taxable estate. The current seven-year look-back period is likely to be successful in preventing tax planning of this nature based on specific knowledge of mortality risk: there are few medical conditions where an individual will have more than seven years' warning of death. However, advancing old age is clearly a predictor of mortality, and so much tax planning can be done as individuals age on the basis that their mortality risk is rising sharply. One response to this would be to increase the look-back period further: perhaps to doubling it to 14 years (it is currently already 14 in certain circumstances), or even much longer.

The core trade-off at the heart of this choice, given the current structure of inheritance tax, is between ideal design and administrative burden. It is not clear why gifts at any point should fall outside the scope of inheritance tax. There are two major problems with setting a fixed window where gifts are taxable. First, it creates unfortunate boundaries based on bad luck: for any fixed period where gifts are taxable, there will be cases where someone dies a few days before, and so their estate has to pay tax on the gift, while other similar individuals live a bit longer and so no inheritance tax is payable. Second, as set out in Section 7.3, there are substantial gifts given much earlier in life that are likely, for many individuals, to fall outside of even a 14-year period

[2] For most individuals, housing is the most valuable non-pension asset (Advani, Bangham and Leslie, 2021). Rules around 'reservation of benefit' mean gifts of the main home do not reduce the size of the estate for tax purposes, unless the giver retains no benefits whatsoever. While there are tax avoidance schemes that attempt to get around these rules, gifts of the main home are generally not possible for individuals who need it as a place to live.

before death. To the extent that the rationale for inheritance tax is to reduce inequalities between individuals based on the wealth of their parents, and thereby enhance social mobility, the most significant gifts – such as those aimed at getting a child onto the housing ladder – may happen much earlier in life (see Box 7.2 for more detail). Without a very large increase in the look-back period for gifts, these are likely to continue to be outside the tax window for many people. The look-back period may even increase the perceived unfairness if it extends to a period that covers these major gifts for only some people, depending on how long they survive, both because of the randomness of who ends up paying and because less well-off individuals tend to die earlier and so are likely to have more of their gifts be taxable.

Box 7.2. Gifts made during life

The annual flow of transfers made by living individuals is around one-fifth of the value of inheritances (Boileau and Sturrock, 2023a). Over a two-year period, around 5% of adults report receiving one or more gifts worth £500 or more. Less than 2% of individuals report receiving a loan from family (which may become a gift if not repaid). Most of these transfers are modest in size, with their median value being £2,000. But gifts are very unequally distributed, with the largest 10% of transfers being worth over £20,500. Gifts are most frequently received by people in their late 20s and early 30s, with 1 in 10 of that age-group receiving a gift over a two-year period, compared with rates of receipt of less than 5% for ages of 50 and older. Over four-fifths of the flow of gifts is from parents to their adult children.

It is likely that only a small proportion of these transfers would ever be liable for inheritance tax. Each individual can give away £3,000 per year without these transfers ever being counted as part of their estate. Furthermore, given that transfers are primarily received from parents and given when the child is in their 20s and 30s, it seems likely that in the vast majority of cases these transfers will be made further than seven years from the giver's death. The number of estates reporting lifetime gifts within seven years of death and the value of these gifts, are small. The Office of Tax Simplification (2019) reported that in 2015–16, 4,860 estates included such gifts, with the total value of these gifts being £870 million. This compares with total net estates in that year being worth £79 billion, with 24,500 taxable estates.

A potential solution to these boundaries is to instead include gifts over the entire lifetime. This has been implemented previously in the UK, and is the system currently used in the US. Between 1975 and 1986, under inheritance tax and its forerunner capital transfer tax, lifetime gifts were potentially taxable however long before death they were given. This raises a different set of issues, most notably around administration and record-keeping. Finding old records going back over a lifetime is unlikely to be feasible for an executor, and so non-compliance is likely to be high. This covers both inadvertent non-compliance, where old gifts are missed, and deliberate cases, where they are intentionally unreported because they will be hard to trace. The solution used in the US is to require contemporaneous declarations of large gifts (in excess of $16,000),

which can later be tallied up on death. An objection may be that HMRC will have little incentive to focus compliance resource on these records at the time they should be made, since nothing is immediately taxable. This can be ameliorated by use of third-party reporting to automate checks where transfers go via bank accounts, along with prompts on large transfers to remind givers of their obligation to report. Higher penalties could now also be applied to the estate for incorrect declarations by the deceased if and when these are uncovered. Taxing lifetime gifts may also raise difficulties around determining what is considered to be a gift to, for example, minor children: the tax system and case law already draw boundaries here, but the pressure on defining and policing these boundaries may increase if such gifts could be used to remove assets from an estate.

A larger reform would be to go beyond extending the look-back period for gifts, and instead restructure the way in which gifts are taxed to largely tax them on an annual basis. Part of the difficulty with the present structure of inheritance tax is that it is 'cumulative' in nature: the amount of tax depends on the value of the full estate, including assets that left the estate in the years preceding death. This was particularly important historically, when there was a much larger range of tax rates, up to 85%. Without any contemporaneous tax liability (usually) attaching to gifts prior to death, there is little to incentivise accurate reporting in these years. If instead there were an annual gift tax, where tax liability depended on the amount given within-year (above some threshold), it would be clear that an administration and enforcement mechanism should be resourced. Gifts (and tax paid) in the final few years before death could be cumulated into the estate on death, as now, to prevent deathbed planning over this window, as is seen in other jurisdictions (OECD, 2021).

Whether or not such a tax is a good idea depends partly on what the goal of the tax is. Some will clearly feel that a regular tax on gifting is overly intrusive. On the other hand, an important period for the transmission of wealth between generations is likely to be when the younger generation in a family is in their 20s and 30s and making decisions on investing in education and housing (Davenport, Levell and Sturrock, 2021). This may therefore be perceived as a key time for policy to redistribute wealth transfers, with the aim of promoting social mobility. Inheritance tax as currently designed is unlikely to affect these transfers, creating the possible impetus for some approach to tax such gifts made earlier in life. However, the effects of such policies are not yet well understood.

We do not make any recommendations on the preferred structure for the taxation of gifts, although the status quo could clearly be improved upon. Design questions here are difficult, and the form of taxation would inevitably alter the types of gifts made. Evidence from the Netherlands, where there is an annual gifts tax, shows substantial bunching around the tax thresholds (Groot, Möhlmann and Sturrock, 2022). More work is needed on both the legal design aspects and the quantitative effects of reform before any particular design could be recommended.

Spouse exemption

By far the biggest relief in the inheritance tax system is spouse exemption: a complete exemption on transfers made between spouses or civil partners. In 2020–21, the total value of assets transferred under this exemption was £15.7 billion.

At a conceptual level, there are arguments for and against such an exemption. A possible justification is a desire to treat couples as a single economic unit for the purposes of wealth taxation, as happens in some other parts of the tax system, although more generally the UK has individual taxation. An exemption on the first death within a married (or civil partnered) couple ensures that tax does not create a necessity to sell the marital home, or create other major financial impacts on the survivor's standard of living. It might also be claimed that transfers between spouses cannot have the same consequences for inequality of opportunity as transfers to the next generation. This is because the exemption is often assumed to be effectively a deferral of tax: when the surviving spouse (or civil partner) dies, the assets will then be taxed.

However, there is evidence that on the death of the first spouse, surviving partners increase their giving, particularly if they are a woman (Boileau and Sturrock, 2023b). These gifts may be made free of inheritance tax: small gifts, gifts relating to weddings and regular gifts are all free of inheritance tax. Where the surviving spouse lives more than seven years, any gifts, however large, are also tax-free; where the surviving spouse lives at least three years, there can be a reduced tax rate on those gifts.

For the very wealthiest, spouse exemption opens up a number of routes for reducing tax bills. For example, currently on death, the value of any capital gains is wiped out. Couples who have assets with large gains can therefore pass them between spouses on death free of inheritance tax and of capital gains tax. The assets can then be sold free of capital gains tax, and used to purchase AIM shares – covered by business relief – which will be free of inheritance tax when passed on, assuming the second spouse holds these at least two years before death.

Both of the above issues are indicative of wider problems in taxation at death, and could – and should – be tackled through modifications to the taxation of gifts and business assets and the removal of capital gains tax uplift (see Box 7.3). However, spouse exemption creates other issues which cannot be tackled anywhere else in the tax system. The core issue is that liability for inheritance tax depends on the domicile (permanent home) of the individual.[3]

[3] For people who are not domiciled in the UK, there can still be liability based on ownership of UK-located ('situs') assets, most notably land.

Box 7.3. Capital gains tax at death

Capital gains tax (CGT) is a tax on the increase in asset value for most assets other than the main home and assets held within an ISA or pension. Capital gains are taxed not when they arise, but at the point when the asset is sold. Since 1971, when someone dies, the accumulated ('accrued') gains are generally disregarded for tax purposes. The individual's estate is not liable for CGT on the accrued gains, and the beneficiaries of the estate are deemed to acquire the asset at market value, meaning that when the asset is later sold, only gains from the date of death may be taxable.

The effect of this treatment is to incentivise individuals who have assets with large accrued gains to hold those assets until death, so that the tax that would otherwise be due is wiped out. This creates obvious inefficiency, since it encourages the holding of assets (e.g. a rental property or private business) even when they can no longer be managed well or are no longer the best investment, simply because of the tax advantage.

Forgiveness of CGT on death is also likely to be extremely regressive. Little information is available about gains on assets passed at death precisely because they are not taxable. However, gains realised in life are very concentrated among the wealthy, with 88% of all taxable capital gains going to individuals with more than £100,000 in gains (Advani, 2022). Over 70% of taxable gains come from unlisted businesses, which are skewed towards the very top of the distribution even among those who have taxable gains, and which can benefit from a lower CGT rate as well as exemption from inheritance tax (Advani and Summers, 2020). A reduction in the CGT relief for these assets in Budget 2020 will have increased the incentive to retain assets until death, by making the forgiveness more valuable.

The revenue consequences of CGT forgiveness at death are difficult to estimate because no data on these gains are available. Corlett, Advani and Summers (2020) used HMRC figures to estimate that in 2017–18, gains forgiven at death amounted to around £5 billion. Uprating this to 2021–22 in line with the growth of aggregate taxable gains implies that around £8 billion worth of gains were forgiven on death last year. Assuming these would all be taxed at 20% – the higher CGT rate for non-housing assets – this implies £1.6 billion in tax forgone. This number is similar to the estimate provided by the Office of Tax Simplification (2020) in its review of CGT.

One solution to these problems is to treat death as a disposal event. CGT can be applied as though the individual sold their assets just before death, and the CGT liability can then be passed to the estate to pay. Inheritance tax would then apply on the value of the net estate after the CGT was paid. This creates a consistent tax treatment between whether someone sells before they die or holds until death, so there is no reason for them to distort this choice for tax purposes. Unlike in the case where an asset is sold, there is not necessarily an increase in cash flow at the point when the asset is inherited. If the

executor does not have access to savings to pay the CGT bill, they may therefore need to sell the asset. This is also largely true of gifts of assets during life.

Other solutions are sometimes proposed, such as inheriting the assets with the base cost (see Advani (2022) for a wider discussion of CGT reform issues). This means that when the asset is ultimately sold, CGT will then be due on the full value of the gain since the deceased purchased it. Like treating death as a disposal event, this means that capital gains do not escape tax at death. While this proposal sidesteps the issue of a potential lack of cash flow for the receiver, it has a number of problems. First, it leads to complex interactions between CGT and inheritance tax to ensure inheritance tax is not paid on the part of the accrued gain that will be paid in tax. Second, it has the administrative difficulty of requiring the inheritor to, potentially many years later, have records of what the base cost was. Third, there is more scope for avoidance – for example, by the inheritor of a very large gain leaving the UK for a few years to receive the gain free of CGT. Fourth, given the frequency with which CGT has been reformed in the past 40 years, there would also be an incentive to hold onto the asset until some more favourable reform takes place.

One objection sometimes made to the abolition of forgiveness at death is that both CGT and inheritance tax are then payable at the same time. This is both correct and intentional. CGT and inheritance tax are serving different purposes. CGT taxes the increase in value of assets, and for administrative convenience is only payable when there is a transaction: at this point the asset needs to be valued anyway, and on a sale the seller has cash with which to pay the tax. Inheritance tax taxes the transfer of assets between individuals at death, or in the seven years before. On death, if an asset has accrued gains, it is appropriate to tax these just as much as it would be if the asset were sold the day before death, where it is currently being taxed. A valuation for the asset is anyway needed at this point, and any future recipient of the asset can either sell it to pay the tax, or can borrow or dip into savings if they want to retain the full value of the asset where it is indivisible.

There is no obvious way to define potential liability for inheritance tax based on how a couple is connected to the UK, particularly since an individual may end up married or civil partnered to more than one person over the course of a lifetime. This creates problems where, for example, one member of a couple dies, and the other later leaves the UK and settles abroad. Spouse exemption means no tax is paid on the first death, and if the survivor makes a permanent home elsewhere, they will generally not pay UK inheritance tax. A related problem can arise where members of a couple have different domiciles. For example, in the case of a couple where the husband is UK-domiciled and wife has a domicile in Switzerland, if the husband dies first and

leaves all assets to his wife, they can then fall outside the scope of UK inheritance tax.[4] These concerns are not merely theoretical. Foreign-born individuals are very prevalent at the top of the UK income and wealth distributions (Advani et al., 2022; Advani et al., 2023).

To tackle this, and other ways in which spouse exemption can lead to assets being removed from the UK inheritance tax base, one option would be to entirely remove spouse exemption. This would revert us to the structure of estate taxation before 1972, when the exemption was first introduced. However, the reason for its introduction was the concern that, otherwise, the surviving spouse might have their entire lifestyle change upon the death of the first spouse, and this concern remains. While tax always affects the choices that are available, many would see it as an unreasonable outcome for the death of a spouse or civil partner to create major financial hardships. A second concern might be that the assets may be taxed on the death of both members of the couple. It is worth noting that both of these issues are currently experienced by unmarried cohabitees (including siblings, for whom marriage / civil partnership is not an option).

One possible solution to ensuring the surviving spouse does not face hardship caused by the inheritance tax due would be to retain spouse exemption, but set a very high cap on the total value of assets that could be covered by it. This is the approach taken by most countries that have an equivalent to spouse exemption. The intention would be to set this at something sufficiently large that it clearly does not create hardship for the surviving spouse, but which still ensures some of the tax is collected on the first death in the case of extremely wealthy couples. A cap of £2.5 million, for example, would affect less than 1% of couples. Existing provisions already mean that, where estates have liquidity issues in paying the inheritance tax – for example, where the only asset is a house – the tax can be paid in instalments over 10 years (Loutzenhiser and Mann, 2021); this would continue to apply.

Merely introducing a cap on spouse exemption would mean that, in some circumstances, the same assets are subject to inheritance tax twice: assets in excess of the cap would be taxed on the first death, and then again on the second death, assuming the survivor lived long enough that quick succession relief did not (fully) apply. Whether or not this double inheritance taxation is a good thing will be a matter of individual judgement. Some might find it unreasonable for the same assets to be taxed again, even where the survivor had many years of benefit from the assets. Others might consider this a useful increase in the progressivity of inheritance tax: in the absence of other reliefs or tax planning, the assets in excess of the threshold would be taxed

[4] Partly to address this, the UK historically had a cap on transfers to non-dom spouses. Since 2013, non-dom spouses can elect to be treated as UK domiciled for inheritance tax purposes, which allows them to benefit from full spouse exemption but means that if they die in the subsequent four years the assets are still taxable in the UK (Deloitte, 2023). In the reverse case in the example, where the non-dom wife dies first, she could gift the assets directly to any children, so that inheritance tax is not payable on these assets when her husband dies (as would happen if they were left to him).

twice, making an effective rate of 64%, although if a more progressive rate is the aim then it could be achieved more simply by introducing higher tax bands directly. An objection to having some assets taxed on both deaths is that it would in practice probably lead to assets in excess of the cap being left to children / other beneficiaries, to prevent them being taxed on the death of the survivor. Wealthy individuals taking tax advice will likely be offered a trust structure that allows the survivor to retain benefits without having ownership, to prevent taxation on the second death. Those with less access to planning advice, and the public at large, will legitimately be unhappy that the system does not work as apparently intended for those who are very wealthy.

One attractive option that would remove the 'double tax' without requiring individuals to engage in complex planning would be to introduce a cap on spouse exemption, but combine this with a rise in the survivor's nil-rate band. The appropriate increase would be the amount of post-tax assets in excess of the cap. For example, suppose the cap were set at £2.5 million. A wife dies with an estate worth £3.5 million, leaving everything to her husband, and her nil-rate band was fully used by an earlier gift (and no other reliefs apply). The husband gets spouse exemption on the first £2.5 million, and then 40% tax is applied to the remaining £1 million, so that he gets a further £600,000. To ensure the assets in excess of the cap are not taxed on his death, he would also get an effective increase in his nil-rate band of £600,000. This addition would only apply on death – i.e. not to gifts – to ensure other potential avoidance opportunities are not created. The effect of this is that the inheritance tax paid on the first death is effectively a prepayment in most circumstances: if the husband's estate is subject to UK inheritance tax when he dies, it will have tax relief on the value of these assets. If for some reason his estate is not subject to inheritance tax, then this reform ensures tax is paid that otherwise would not have been.

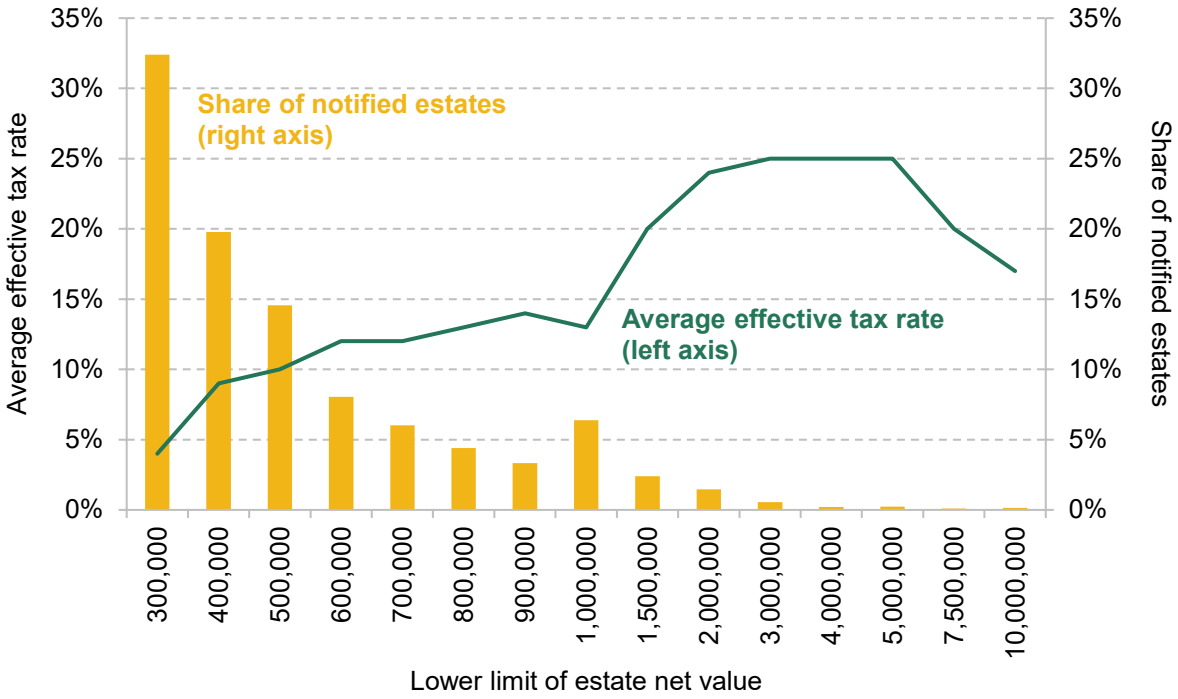
The inheritance tax treatment of couples needs to strike a balance between allowing for the sharing of assets between couples (ideally both married / civil partnered and cohabitees) and the individual-specific conditions for one's estate being liable for inheritance tax. Anecdotally, spouse exemption is used by some in ways which ultimately fully avoid, rather than merely defer, inheritance tax. However, existing data sets do not provide any way to measure this quantitatively. In the absence of data on these issues, it is difficult to make any firm recommendations on whether and how reform should be done, but this is clearly an area where further investigation is needed.

Implications

This set of reliefs mean that the *effective* average tax rate – the total tax paid divided by the value of the estate – is much lower than the headline rate of 40% (Figure 7.8). Among estates that owe tax, the effective tax rate rises slowly from 9% to 14% between £400,000 and £1 million, then rises more steeply to 25% for those above £2 million, as more and more of the estate exceeds the various nil-rate bands, and therefore comes into tax, and the residence nil-rate band is tapered

away. However, above £2 million, the effective tax rate is essentially flat, until around £7.5 million, when it begins to actually fall. Work by the Office of Tax Simplification shows that this is because larger estates make more use of exemptions and reliefs: more than 70% of the estate is covered by an exemption or relief other than the nil-rate bands, for estates above £10 million (Office of Tax Simplification, 2018). These observed rates are also higher than they would be if all lifetime gifts were included, since gifts made more than seven years before death are not included in the estate. Wealthier people with more liquid resources will be better able to make lifetime gifts and survive seven years. Those whose wealth is tied up in their homes will not be able to do so.

Figure 7.8. Average effective tax rate of taxpaying estates and share of notified estates of at least £300,000, by lower-limit net value, 2020–21



Note: Not all estates must be notified (reported to HMRC) and therefore the share of notified estates does not fully represent the distribution of estates, especially for those worth less than £1 million.

Source: HM Revenue and Customs, 2023a, table 12.1.

Other issues

The problems set out above relate to the tax base for inheritance tax: the existence of numerous exemptions and reliefs means that this base is narrow and inconsistent. They only scratch the surface of the complexity of inheritance tax, where the tax rate for a gift can depend simultaneously on a combination of who the recipient is, gift amount, timing of gift relative to death, asset type of gift, amount of other gifts given, source of the funds for the gift, whether the value of the gift changed after the gift was made, and further criteria. Our recommendations in relation to the tax base, discussed in detail below, focus on treating different asset classes more

equally. While these would be an improvement to the structure of inheritance tax, and would have clear revenue and distributional effects, they alone would not solve all of this complexity.

We also do not in this chapter make any recommendations on three other important issues that should be considered in any wider reform of inheritance tax, which we briefly mention here.

First, the treatment of trusts. Since trusts do not die, lifetime gifts into trust made more than seven years before death are free of inheritance tax paid on death provided the donor is wholly and permanently excluded from any possibility of benefit. To account for this, they instead face an 'entry charge' of 20% on gifts into trust above the nil-rate band, and then a 10-yearly charge of 6%. However, they can benefit from many of the same reliefs that apply to individuals, so that gifts of AIM shares (or other exempted assets) are free of the entry charge, and of 10-yearly charges if still retained at that time. Reforms to the asset base for inheritance tax would therefore raise additional revenue from tax that would be paid by trusts, although this is outside the scope of our modelling.

Second, the 'connecting factors' which determine who is covered by inheritance tax. Currently, individuals are covered by UK inheritance tax if they are domiciled – have their permanent home – in the UK, or are deemed domiciled in the UK for tax purposes (Chamberlain, 2020). 'Non-doms' only owe inheritance tax in respect of UK-situated assets, such as land, that they own. The concept of domicile is a contested one, since one's permanent home cannot be independently verified (Advani et al., 2022). Other countries that have inheritance taxes base liability for inheritance tax on length of residence. This is a direction the UK may wish to look into, particularly in the context of the pledge by the opposition Labour party to abolish non-dom status for tax purposes.

Finally, while most households with wealth below £1 million will not have to pay any inheritance tax, they nevertheless typically need to get a 'grant of representation' to be able to access the assets of the deceased; when the deceased left a valid will, this is also known as 'probate'. Filing an inheritance tax return is a necessary part of this process, so that 40% of estates have to file, though only around 4% actually pay any inheritance tax. Of those non-taxpaying estates, more than 88% were worth less than £500,000. This need to file imposes substantial costs, both in terms of time spent and in terms of financial outlays for professional services. Burgherr (2021) estimates that professional services firms charge 1.9–2.8% of the gross value of the estate in probate costs. While many executors will not use a professional firm, they then bear the time cost of the entire process, which took at least 50 hours for almost 4 in 10 respondents to a survey by the Office of Tax Simplification (2018). Actions that reduce the need for non-taxpayers to file would therefore represent a significant saving for citizens without any fiscal cost – unless it leads to evasion or unintentional non-compliance – and perhaps a small fiscal benefit in terms of the number of returns that need processing.

7.6 Options for reform

We present several possible reform options and estimate their effects on aggregate inheritance tax revenues and the distribution of inheritance tax paid. We describe how we estimate the effects of these reforms in Box 7.4. The reforms we analyse are as follows:

1 **Abolish or restrict business relief.** We present options to abolish this relief and to restrict the total assets that can be relieved to £500,000 per estate, with unused exempt amounts being transferable to a spouse or civil partner.
2 **Abolish agricultural relief.** We consider only abolition of this relief, since we do not have access to data allowing us to model a cap.
3 **Bring pension pots into estates.** 80% of the value of defined contribution pension pots becomes potentially subject to inheritance tax, equivalent to applying inheritance tax to the value of the pension after basic-rate income tax has been deducted.
4 **Abolish the residence nil-rate band and increase the nil-rate band to £500,000.** The effect of this is also to remove the tapering away of the residence nil-rate band for estates worth more than £2 million, reducing the tax due from these estates. We also show the effect of retaining a taper of £175,000 of the nil-rate band above £2 million.
5 **Increase the nil-rate band to reduce the number of deaths resulting in inheritance tax to 4%.**
6 **Reduce the inheritance tax rate to 20% and reduce the nil-rate band to £200,000.**
7 **Abolish inheritance tax.**

The first three of these reforms are expansions of the tax base for which there is a strong rationale from the perspective of economic efficiency and equitable treatment of those holding different types of assets. The fourth reform would eliminate the special treatment of main residences passed to direct descendants. Since most estates worth at least half a million pounds do benefit from the residence nil-rate band, we implement this reform by extending the benefit to those which do not. This means that inheritance tax is only paid by those passing on at least half a million pounds' worth of assets (and up to one million in the case of surviving spouses), independent of who they pass the assets to or what the assets are. The fifth option represents an increase in the nil-rate band that would take the percentage of deaths resulting in inheritance tax back to what is roughly its long-run average, while the sixth option would expand the proportion of individuals paying inheritance tax while reducing its rate.

Box 7.4. Estimating reform effects

We use data from the Wealth and Assets Survey (WAS) to estimate inheritance tax revenues under each reform. We build on the approach in Advani, Hughson and Tarrant (2021). To consider the revenue and distributional effects of alternative systems, we calculate the tax that an individual's estate would pay upon their death, given their current asset holdings, under each possible tax system. To model alternative tax systems, we make use of the fact that WAS has information on assets that are not currently included in the base for inheritance tax, including business assets and DC pension wealth that is in unannuitised form. As we observe main residence and other wealth separately, we can also model changes in the residence nil-rate band.

The WAS data are not perfect for our purposes, however. WAS contains information on business assets, but agricultural assets held in businesses are not measured separately from other business assets. Individuals may also hold agricultural assets outside of businesses but these are not explicitly measured in WAS. This means that our estimate of the effect of business relief may include some assets eligible for agricultural relief and that we cannot model agricultural relief explicitly. WAS collects data on whether an individual has listed shares and whether they have unlisted shares but only collects their combined total. We assume that those who report holding unlisted shares hold all of their shares in the form. However, our results are very similar if we assume that those who report holding *only* unlisted shares hold all of their wealth in that form and that those reporting holding both types of shares hold all their wealth as listed shares. For more discussion of the use of WAS to estimate inheritance tax revenues, see Advani, Hughson and Tarrant (2021).

A Chancellor may choose to combine elements of these measures. For example, measures that expand the inheritance tax base could be combined with either an increase in the nil-rate band or a reduction in the headline rate of tax. This would be better than an unreformed system. We therefore show, for each reform, the revenue-neutral change in the nil-rate band and revenue-neutral change in the rate of inheritance tax. We also show the increase in the nil-rate band that would, in combination with the reforms, result in 4% of estates paying inheritance tax.

Revenue implications

Table 7.1 sets out the effects of each of the reforms we consider on inheritance tax revenues in 2024–25. In the absence of reform, we forecast inheritance tax revenues will be £7.0 billion (in 2023 prices), with 5.3% of deaths resulting in inheritance tax being paid.[5] If we consider a person to be a taxpayer if they are the first member of a couple to die and their spouse or civil

[5] Note that the OBR forecasts that 5.6% of deaths will result in inheritance tax in 2024–25, with total revenues of £7.2 billion, in 2023 prices.

partner ends up paying inheritance tax, then we estimate that 8.6% of individuals end up being inheritance tax payers. Clearly, abolishing inheritance tax would mean that these individuals would not face any inheritance tax on the wealth they bequeath, with the resulting loss of all inheritance tax revenues. We discuss the possibility of knock-on impacts on saving behaviour of older people, and of receivers of inheritances, in Box 7.5.

Box 7.5. Responses to tax changes

The estimated effects that we have set out are static costings that do not account for any changes in behaviour that would result from the reforms. Changes to inheritance taxation would likely result in changes to how much people save (and work) over their lifetime, changes to what those at older ages do with their accumulated wealth – including changes to how much is spent or gifted to others versus held onto – and changes to the form in which wealth is held.

It is hard to estimate the response of saving decisions to inheritance tax rates. The best existing evidence finds that changes in rates of inheritance taxation do not have large effects on how much wealth donors accumulate during life and bequeath at death (Kopczuk, 2013). To put this in quantitative terms: using estimates from the academic literature that are at the upper end of responsiveness implies that reducing the headline inheritance tax rate from 40% to 20% would result in a 3% increase in gross wealth bequeathed, offsetting just 6% of the direct loss in revenues from such a tax cut. On this basis, changes in the headline rate of inheritance tax would not have very large impacts on wealth accumulation through life and over the years up until death.

Some international evidence on the response of the composition of wealth to inheritance tax finds that the amount of wealth put into inheritance-tax-privileged assets is also not very responsive to the inheritance tax rate (Goupille-Lebret and Infante, 2018). This does not imply that such assets are not used to reduce inheritance tax, merely that their use does not vary substantially with the tax rate. That said, we would expect that the willingness to move wealth into inheritance-tax-exempt assets in response to inheritance tax rate changes would vary a lot from context to context depending on the hassle, financial costs, and any loss of financial control or flexibility of access that may come from doing so. The extent of shifts in the form of asset holdings in response to cuts or increases in the inheritance tax rate is therefore quite uncertain.

Another potential response to changes in the inheritance tax rate is to change how much is given as gifts to heirs while alive. There is clear international evidence that tax-motivated giving takes place near death and that this is highly responsive to tax incentives to shift the timing of transfers (Groot, Möhlmann and Sturrock, 2022). However, overall, people are far from using gifts to minimise their tax liability, and giving appears to step up rapidly in the final few years before death, consistent with a desire to hold onto wealth until health declines suggest that death is near. It is therefore possible that the inclusion within estates of gifts made within seven years of death goes a long way to preventing

this form of inheritance tax avoidance in the UK. However, much of giving takes place earlier in life. Whether individuals, particularly those with significant liquid assets, would respond to changes in the inheritance tax rate by giving away more wealth even when believing themselves to be far away from death is not known.

Unlike changes to tax rates, expansions of the inheritance tax base would be expected to reduce holdings of previously inheritance-tax-exempt forms of wealth. For example, if some people move their wealth into AIM shares near death only because they wish to avoid inheritance tax, then capping business relief would mean that those people would no longer move more than the capped amount into AIM shares. From an inheritance tax revenue perspective, it is not relevant how people shift their asset holdings within assets subject to inheritance tax (though of course a change in asset allocation resulting from an elimination of a tax distortion could have important positive consequences for the efficient allocation of investment). What matters from a revenue perspective is the extent to which closing down avoidance channels leads to wealth transfers being made through other tax-privileged forms. For this reason, the combination of reforms to expand the tax base is likely to be more effective at reducing inheritance tax avoidance than any one measure alone. If bringing business assets and pension wealth into the scope of inheritance tax effectively shut down the avoidance channels that many high-wealth people are willing to use, then the revenue effects of these reforms may be close to our costings. If people are able and willing to shift to other routes, such as trusts or gifts, then the revenue impacts of doing individual base-expanding reforms would be more limited.

Abolishing business relief would raise £1.4 billion a year in additional revenue, assuming no behavioural change.[6] Capping business relief at £500,000 per person would raise £1.1 billion. This would capture most of the fiscal benefits of abolishing business relief as around 90% of business wealth bequeathed is given as part of an estate worth over £2 million. Either reform would result in only a small increase in the proportion of people paying any inheritance tax (by around 0.1% of deaths) because most business assets are held by those whose estates would already be large enough to attract inheritance tax. Capping business relief would allow the nil-rate band threshold to be increased from £325,000 to around £390,000 while keeping inheritance tax revenues roughly constant. This would bring the proportion of deaths that are taxed down to 3.9%. Alternatively, the inheritance tax rate could be reduced from 40% to 35% while keeping revenues constant.

[6] This estimate exceeds HMRC's published statistics for the cost of business relief, £0.8 billion for 2022–23. Three factors likely explain the difference. First, our estimate is for 2024–25, and wealth at death is rising over time. Second, our estimate of business relief may include some property subject instead to *agricultural* relief, because of the way the assets are reported in the Wealth and Assets Survey. Third, there will be some disparity caused by differences in valuation of assets. It is not clear which numbers are more likely to be correct in terms of valuation. Administrative data are usually likely to be more accurate than survey data, but in this case the numbers reported to HMRC are mostly for fully relieved assets, so little compliance work is done to check the values are correct, as long as the asset is agreed to be eligible for 100% relief.

Table 7.1. Effects of reforms to inheritance tax

Reform	Change in annual revenue (£bn)	% of deaths taxed	Revenue-neutral NRB	% of deaths taxed under revenue-neutral NRB	Revenue-neutral inheritance tax rate
Abolish BR	1.4	5.3%	415,000	3.7%	34%
Cap BR at £500k	1.1	5.3%	392,000	3.9%	35%
Abolish AR*	0.4	N/A	N/A	N/A	N/A
Include 80% of DC pension pots in estates	0.2	5.4%	333,000	5.2%	39%
Cap BR and include pensions	1.3	5.4%	406,000	3.8%	34%
Eliminate RNRB, raise NRB to £500k**	–0.9	4.3%	445,000	5.3%	46%
Cap BR, include pensions, eliminate RNRB	4.5	9.3%	525,000	3.8%	25%
Cap BR, include pensions, eliminate RNRB, raise NRB to £500k***	0.5	4.4%	543,000	3.6%	37%
Raise NRB to £380k to target 4% paying inheritance tax	–0.9	4.0%	n.a.	n.a.	46%
Cap BR, include pensions and target 4% paying inheritance tax	0.3	4.0%	n.a.	n.a.	39%
Abolish BR and RNRB, include pensions, reduce NRB to £200,000 and cut rate to 20%	1.6	15.8%	256,000	12%	33%

* We do not have data that would allow us to produce an estimate for capping agricultural relief.
** If retaining a taper that applied to £175,000 of the nil-rate band, the reform would cost £700 million and the revenue-neutral nil-rate band would be £454,000.
*** We assume that £175,000 of the nil-rate band is tapered away for estates above £2 million.

Note: 'NRB' denotes nil-rate band. 'BR' denotes business relief. 'AR' denotes agricultural relief. 'RNRB' denotes residence nil-rate band. 'N/A' denotes not available. 'n.a.' denotes not applicable.

Source: Authors' calculations using the Wealth and Assets Survey.

Bringing pension pots into estates on the same basis as other assets would initially raise around £200 million a year in additional revenue, if immediately implemented in full. In 2024–25, this would allow the nil-rate band to rise modestly to around £330,000 (or the main inheritance tax rate to be cut to 39%) while keeping revenues constant. It is worth noting that the revenue implications of such a reform would rise steadily over time because DC pensions are of growing importance in households' portfolios in successive generations. Adam et al. (2022) estimate that if those who are around retirement age today were to bequeath 50% of their DC pension wealth, bringing pension pots into estates would eventually raise around £1 billion a year in additional annual revenues in today's terms. Combining the cap on business relief with bringing pension pots into estates would currently raise £1.3 billion in annual revenues, allowing the nil-rate band to increase to around £410,000, or the inheritance tax rate to fall to 34%, while being revenue-neutral.

Abolishing the residence nil-rate band and increasing the nil-rate band to £500,000 would come at a fiscal cost of around £900 million and mean that the percentage of deaths resulting in inheritance tax falls to 4.3%. The revenue-neutral level of the nil-rate band if the residence nil-rate band were abolished would be around £445,000. If a nil-rate band taper at £2 million were retained, and it applied only to £175,000 worth of nil-rate band – as the residence nil-rate band taper works at the moment – the reform cost would fall to £700 million and the revenue-neutral level of the nil-rate band could be increased to £454,000.

Capping business relief, bringing pensions into estates and abolishing the residence nil-rate band would raise £4.5 billion in revenues and mean that 9.3% of deaths are taxed. This extra revenue could be used to fund an increase in the nil-rate band to around £525,000 (with 3.8% of deaths resulting in inheritance tax being paid) or a cut in the inheritance tax rate to 25%. Doing this reform while retaining a taper of £175,000 of the nil-rate band for estates above £2 million and setting the nil-rate band to £500,000 (which can be seen as a reform removing the special treatment of housing passed to descendants) would raise a small amount of revenue, of around £500 million. Alternatively, the nil-rate band could rise to around £540,000 while being revenue-neutral.

Increasing the nil-rate band so that the proportion of deaths resulting in inheritance tax fell to 4% (roughly its average in recent decades) would mean increasing the nil-rate band to around £380,000, at an annual cost of £900 million. Combining capping business relief with bringing pensions into inheritance tax and increasing the nil-rate band to target 4% of deaths resulting in inheritance tax would raise £300 million.

Expanding the scope of inheritance significantly, by abolishing business relief and the residence nil-rate band, bringing pensions into estates and *reducing* the nil-rate band to £200,000, while cutting the rate of inheritance tax to 20%, would mean 16% of deaths result in inheritance tax

and revenues would rise by £1.6 billion. Abolishing business relief and the residence nil-rate band and bringing pensions into estates while halving the inheritance tax rate would be revenue-neutral with a nil-rate band of £256,000. Abolishing business relief and the residence nil-rate band and bringing pensions into estates while lowering the nil-rate band to £200,000 would be revenue-neutral if the tax rate was set at around 33%.

Looking at the effects of reforms over the period up to 2032–33, two things stand out. First, the revenue gain from including pensions in estates grows quickly, reaching £500 million in 2023 prices by 2032–33. Second, the fiscal cost of increasing the nil-rate band so that only 4% of deaths result in inheritance tax triples, rising from £900 million to £2.7 billion by 2032–33. This is because the proportion of deaths resulting in inheritance tax is otherwise forecast to reach 7.5%.

Distributional implications

By bequeathed wealth

Figures 7.9 and 7.10 show how different reforms impact those with different sizes of estates. For individuals who are the second member of a married or civil partnered couple to die and who pay inheritance tax, we count both individuals as having paid the tax. Figure 7.9 shows the percentage of deaths resulting in inheritance tax being paid, under different systems. Figure 7.10 shows the corresponding average tax rate on estates, expressing tax paid as a percentage of all bequeathed wealth, including business and pension assets not currently in the tax base.

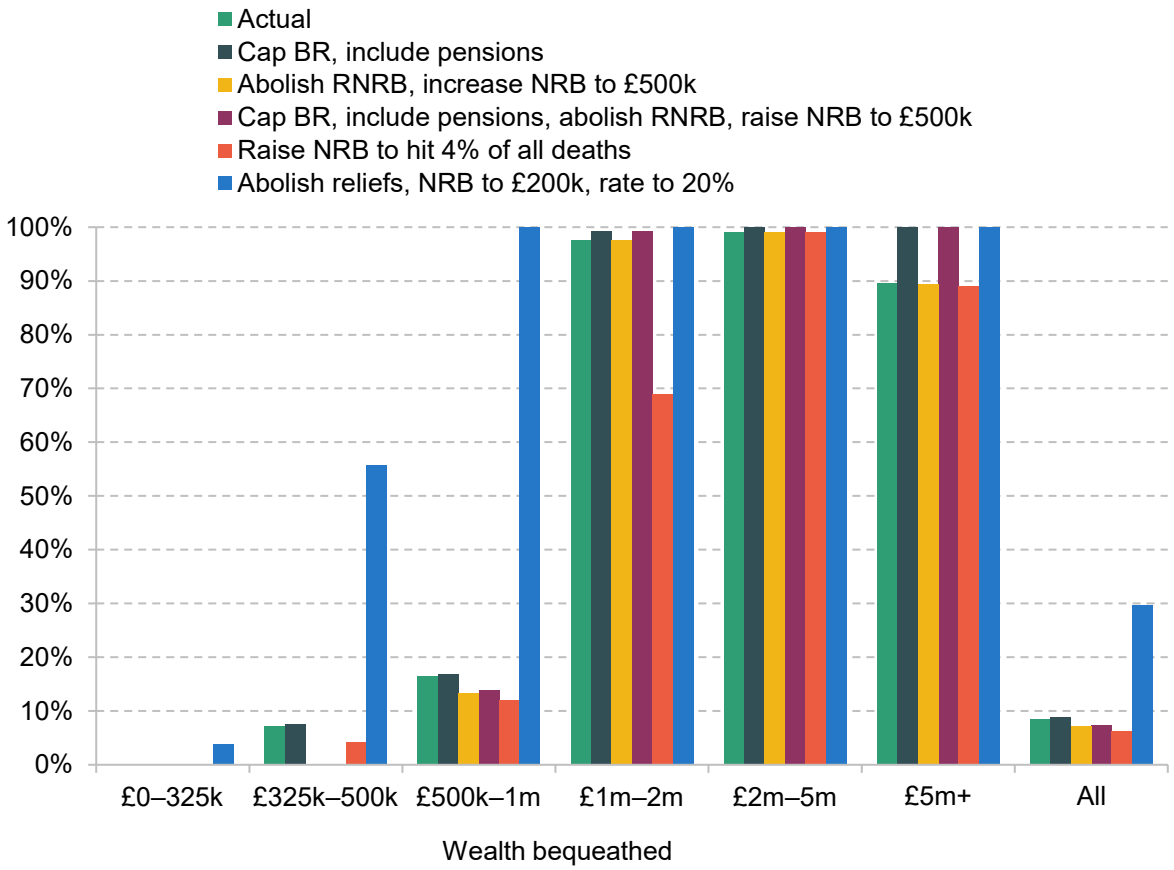
Under the current system, the proportion of estates that are taxed and the average tax rate paid increase until we get to the very largest estates. Despite the average tax rate falling for the largest estates, the tax cut in absolute terms would be larger for those with larger estates. Around half (47%) of the benefit would go to those with estates of £2.1 million or more at death, who make up the top 1% of estates and would benefit from an average tax cut of around £1.1 million.

Capping business relief and including pensions within the tax base would not have a large impact on the overall proportion of deaths resulting in inheritance tax being paid, with an increase in the proportion paying tax of less than 1 percentage point for estates between £325,000 and £1 million and 1–2 percentage points for those worth between £2 million and £5 million. But it would result in a much larger increase for the very highest-value estates, with an 11 percentage point rise in those with £5 million or more in wealth paying any tax. The increase in the average tax rate on bequests is much higher for those bequeathing over £5 million than for those with less wealth. We estimate an increase in the average tax rate from 19% to 38% for that highest-wealth group. This is likely an overestimate of the average tax rate that would be paid in practice, because other avoidance channels would be used. However, these results

illustrate that the increase in the tax paid as a result of such a reform is concentrated among the largest estates.

Abolishing the residence nil-rate band while increasing the nil-rate band to £500,000 – essentially giving all couples the opportunity to pass on up to £1 million without paying inheritance tax – would take the 7% of those with estates worth between £325,000 and £500,000 who would pay inheritance tax under the current system out of the tax. It would reduce the proportion of those with estates worth between £500,000 and £1 million who pay any inheritance tax from 16% to 13%, reducing the average tax rate for this whole group by a third (from 3.6% to 2.4%). In the results we show, we assume that £175,000 of the nil-rate band is tapered away for those with wealth over £2 million, meaning that those with wealth of over £2.325 million do not benefit from the reform.

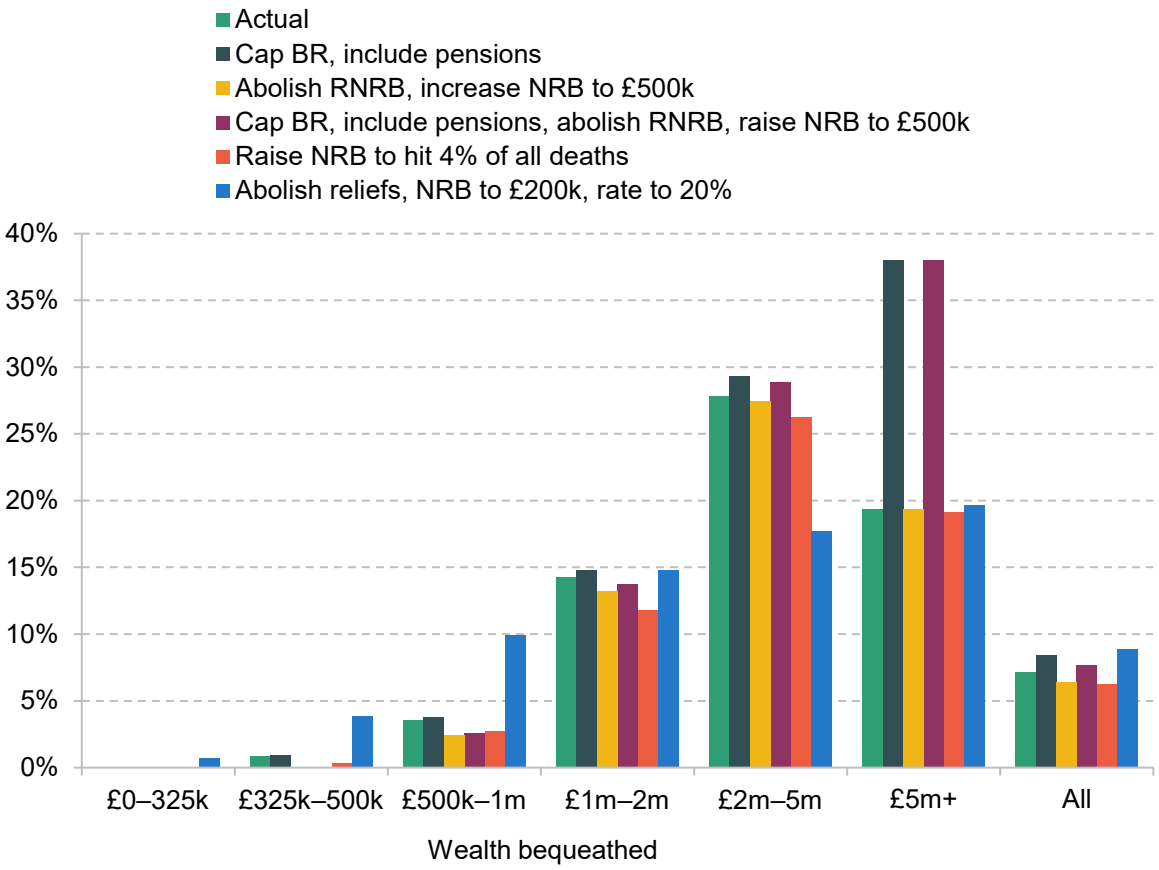
Figure 7.9. Percentage of deaths resulting in inheritance tax (or inheritance tax paid by partner), by bequeathed wealth of the deceased



Note: 'BR' denotes business relief. 'RNRB' denotes residence nil-rate band. 'NRB' denotes nil-rate band. The 'Abolish RNRB, increase NRB to £500k' and the 'Cap BR, include pensions, abolish NRB, raise NRB to £500k' reforms include a taper that reduces the value of the nil-rate band by £1 for every £2 of wealth over £2 million, up to a maximum reduction of £175,000. 'Raising NRB to hit 4% of all deaths' leads to a larger share – 6% – of deaths where the estate of either the deceased or their partner would be liable for inheritance tax.

Source: Authors' calculations using the Wealth and Assets Survey round 6.

Figure 7.10. Inheritance tax paid as a percentage of wealth bequeathed, by bequeathed wealth of the deceased (excluding first member of a couple to die)



Note: 'BR' denotes business relief. 'RNRB' denotes residence nil-rate band. 'NRB' denotes nil-rate band. The 'Abolish RNRB, increase NRB to £500k' and the 'Cap BR, include pensions, abolish NRB, raise NRB to £500k' reforms include a taper that reduces the value of the nil-rate band by £1 for every £2 of wealth over £2 million, up to a maximum reduction of £175,000.

Source: Authors' calculations using the Wealth and Assets Survey round 6.

Capping business relief and including pensions in the tax base while at the same time abolishing the residence nil-rate band and increasing the nil-rate band to £500,000 (again tapering away the benefit of the residence nil-rate band abolition for those with estates of over £2 million) results in a shift of the composition of taxpayers towards those with estates over £5 million and away from those with estates worth under £1 million, with little change for those in between. There is a corresponding shift in tax liability. As the tax system moves closer to treating different asset types in the same way, there would be a relative shift in tax liability away from those with little or no DC pension wealth and with business assets under £1 million and towards those whose estates are more heavily composed of these types of assets.

Increasing the nil-rate band so that 4% of all deaths resulted in inheritance tax would mean far fewer people with estates under £2 million paying inheritance tax. The biggest reduction in proportion of taxpayers and average tax rate would be for those with wealth around

£1–2 million, with a third of deaths that currently lead to inheritance tax being taken out of the scope of the tax entirely and this group's average tax rate falling from 14% to 12%. Around 3% of all estates worth between £325,000 and £1 million are estimated to be taken out of inheritance tax as a result of this reform. This group already has a low average tax rate under the current system as many benefit from the residence nil-rate band and transferable nil-rate band. The gain for this group in terms of a reduced average tax rate is therefore not large.

The final reform – abolishing various reliefs and exemptions while reducing the nil-rate band and cutting the rate of inheritance tax – would mean a big rise in the number of estates with wealth between £200,000 and £1 million that would pay inheritance tax. Overall, the average tax rate would rise from 7% to 9%, but this would be concentrated among those with wealth under £1 million, with a substantial tax cut for those with wealth between £2 million and £5 million. Interestingly, the average tax rate does not change substantially for those with wealth over £5 million due to the offsetting effects of taxing business and pension assets while cutting the tax rate.

By region

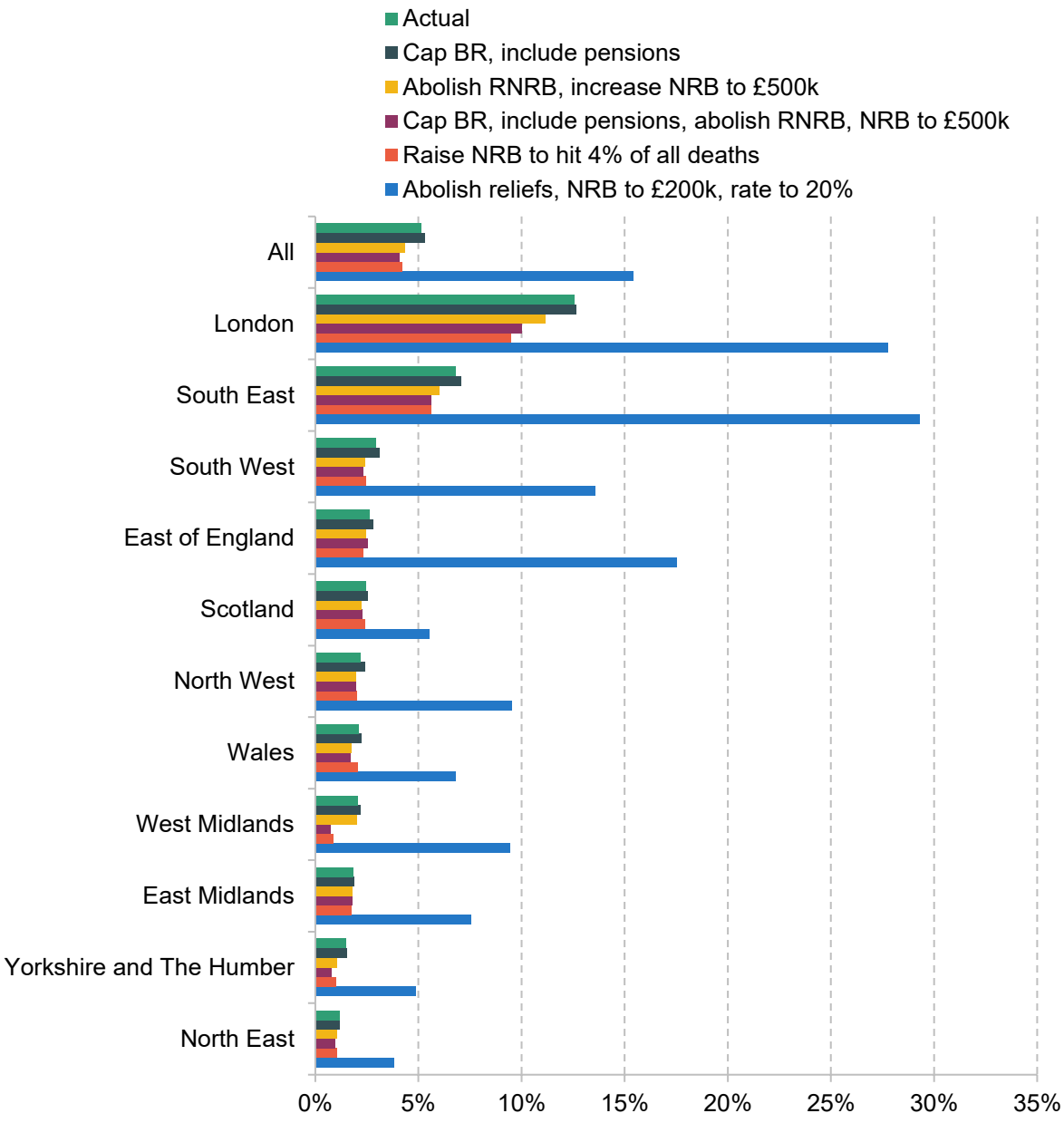
London, followed by other parts of the South of England, would stand to gain the most by an abolition of inheritance tax. We estimate that, excluding the first death in couples, 16% of deaths in London result in inheritance tax being paid, over twice the national average and eight times higher than in the North East. Figure 7.11 shows the percentage of deaths (excluding the first death in couples) that result in more than £100,000 in inheritance tax being paid. Under the current system, we estimate that 13% – or one in eight – of deaths in London result in more than £100,000 in inheritance tax, compared with just 1% of those in the North East.

The effect of capping business relief and including pensions in the tax base on the proportion of deaths resulting in significant inheritance tax is similar across regions. Abolishing the residence nil-rate band and increasing the nil-rate band to £500,000 would have particularly large effects on taking people out of inheritance tax in the South East, Yorkshire and the Humber, and Scotland, though the proportion who pay over £100,000 would fall the most in London. A similar pattern can be seen when business and pensions reliefs reforms are combined with abolition of the residential nil-rate band and extension of the nil-rate band.

Raising the nil-rate band to target 4% of deaths would have a particularly large effect on taking people out of paying inheritance tax in the East and South East of England. In terms of the proportion paying £100,000 or more, this reform would have the largest impact in London.

Abolishing reliefs while reducing the nil-rate band to £200,000 and halving the tax rate to 20% would lead to large rises in the proportion paying substantial amounts across the country, but particularly in the South East. However, the high proportion of high-wealth individuals in London means that this reform would actually lead to an overall reduction in tax paid on estates there.

Figure 7.11. Percentage of deaths (or inheritance tax paid by partner) that result in over £100,000 in inheritance tax being paid



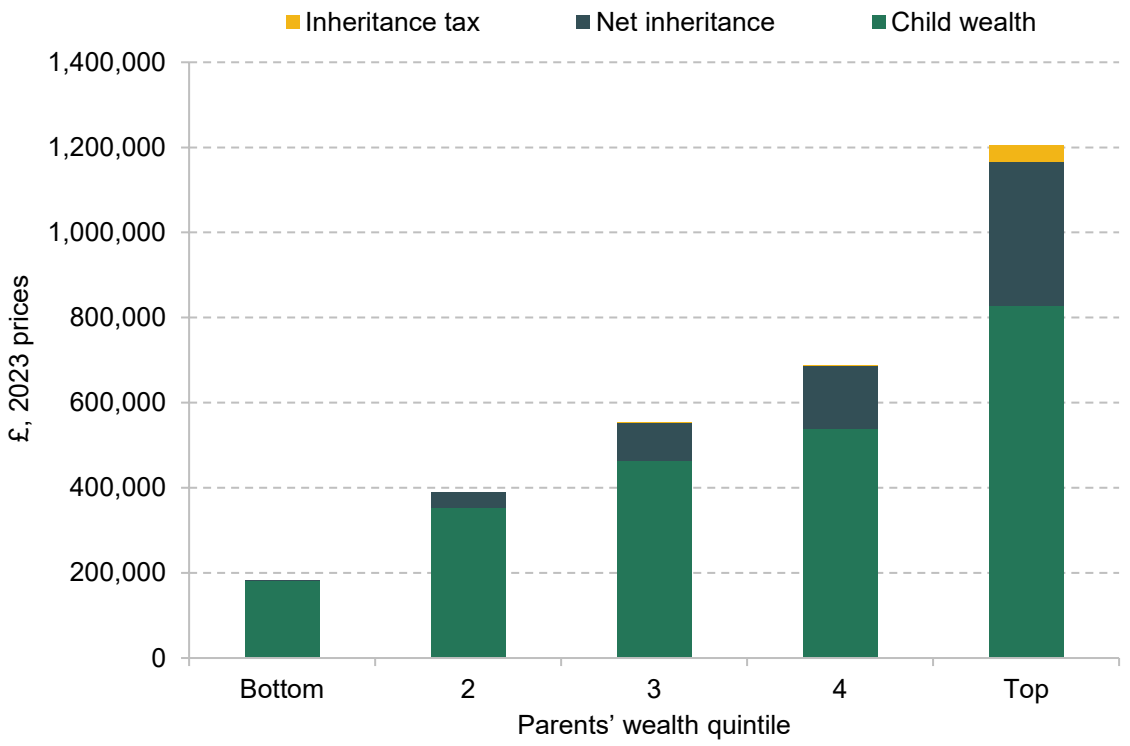
Note: 'BR' denotes business relief. 'RNRB' denotes residence nil-rate band. 'NRB' denotes nil-rate band. The 'Abolish RNRB, increase NRB to £500k' and the 'Cap BR, include pensions, abolish NRB, raise NRB to £500k' reforms include a taper that reduces the value of the nil-rate band by £1 for every £2 of wealth over £2 million, up to a maximum reduction of £175,000.

Source: Authors' calculations using the Wealth and Assets Survey round 6.

Effects on social mobility

The effects of any of the reforms we consider on intergenerational wealth mobility – that is, how someone's wealth is related to that of their parents – would be modest. The reason for that is that the overall scale of inheritance tax is small. We estimate that next year the wealthiest fifth of parents to die will on average bequeath £379,000 per child (excluding the first death in married or civil partnered couples) and pay inheritance tax of £38,000 per child. This compares with less than £2,000 per child bequeathed on average by the least wealthy fifth of parents. Thus, the inheritance tax system reduces the gap in net inheritance between those with the most and least wealthy parents to die by a little over a tenth, i.e. the absolute difference falls from £377,000 to £339,000.

Figure 7.12. Net inheritance and inheritance tax paid on inheritance, and mean child wealth for those aged 50–54, by wealth quintile of parents, in 2024–25



Source: Authors' calculations using the Wealth and Assets Survey round 6, the British Household Panel Survey waves 1–18 and Understanding Society waves 1–12.

To put these amounts into perspective, Figure 7.12 shows estimates of the average net inheritance received by someone whose last-surviving parent passes away in 2024–25 and the average inheritance tax paid on that inheritance, split by parental wealth quintile. These are put alongside an estimate of the mean wealth of those aged 50–54, who are observed just before the

typical ages of inheritance receipt, split by *parental* wealth quintile.[7] For details of the calculation of these numbers, see Appendix 7A. There is a large gap in existing wealth between individuals with more or less wealthy parents. Inheritances substantially expand the gap in wealth between groups. We see the small impact of the current inheritance tax system, which reduces the amount received by those with the wealthiest fifth of parents by around 10% but is otherwise barely perceptible. Abolishing inheritance tax would mean that inheritances do more to expand differences in wealth by parental background. Expanding the inheritance tax base through the reforms explored above would mean that inheritance tax did more to reduce those inequalities. However, even in either of these two extremes, the impact of inheritance tax on the large wealth gaps by parental background that currently exist would be small.

The fundamental reason that inheritance tax does not make a large impact on intergenerational wealth mobility is that currently only the very wealthiest 5–6% of deaths (or around 9% of deaths if counting as taxpayers those whose spouse will pay inheritance tax) result in any inheritance tax being paid. Inheritance tax does redistribute wealth away from the heirs of those with the very largest estates, but it leaves the vast majority of wealth transfers at death untaxed. Inheritance tax would only begin to make substantial impacts on intergenerational wealth mobility across other parts of the wealth distribution if the nil-rate band threshold were reduced such that more estates paid the tax.

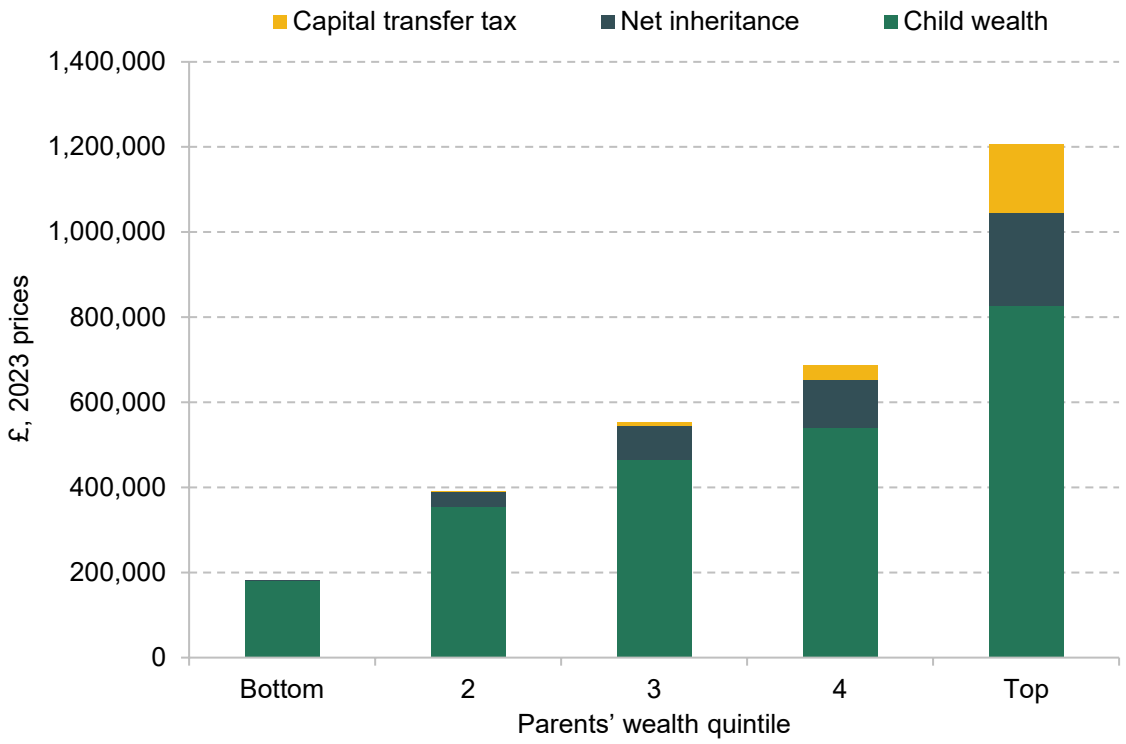
That inheritance tax does not in its current form do a lot to promote intergenerational wealth mobility does not mean that it could not do so. International experience shows that systems with lower exemption thresholds and that raise greater amounts of revenue are possible. And in the past, the UK had a much more extensive and progressive system of wealth transfer taxes. The 'capital transfer tax' system (in place until 1985–86) started at much lower levels and had a much more progressive schedule. In 1985–86, rates varied from 30% to 60%.

As an exercise, Figure 7.13 shows the impact of implementing a version of the 1985–86 capital transfer tax system on inheritances next year. We uprate thresholds such that the 40% threshold remains at £325,000 and other thresholds change proportionally. There is a top rate of 60% on wealth over £796,000. Under such a system, about half of people pay tax on the wealth that they bequeath. Tax revenues are £31 billion, meaning that the stylised tax raises over four times as much revenue as inheritance tax today. In such a system, we see that there is much more redistribution away from the estates of the wealthiest fifth of parents, who pay an average tax rate of 43%. This system is far away from the system today. The impacts of such a system on people's behaviour would likely be large, with actual revenues collected being very different from what we model. Parents may of course react to such a tax by changing how they help their

[7] Bourquin, Joyce and Sturrock (2020) estimate that the average age of inheritance receipt for someone born in the 1960s will be 58, rising to 62 for those born in the 1970s.

children in other ways. Nevertheless, this exercise illustrates that tax schedules with potentially much larger impacts on intergenerational wealth mobility have existed in the not-too-distant past.

Figure 7.13. Net inheritance and tax paid on inheritance under stylised 1985–86 capital transfer taxation system, and mean child wealth for those aged 50–54, by wealth quintile of parents, in 2024–25



Source: Authors' calculations using the Wealth and Assets Survey round 6, the British Household Panel Survey waves 1–18 and Understanding Society waves 1–12.

Finally, it is important to bear in mind that inheritances are only one way through which inequalities are transferred from one generation to the next. And were inheritance tax substantially increased parents may then do more to help their children in these other ways. Wealth transfers made while alive tend to be smaller than inheritances, but are received earlier in life: typically when people are in their twenties and thirties (Boileau and Sturrock, 2023a). These have been shown to interact with choices that could have knock-on impacts on income or wealth accumulation, such as home purchase (Boileau and Sturrock, 2023b). More widely, while inherited wealth is becoming more important, differences in early-life environment, education and parental influences on careers, which in turn shape people's earnings, are still expected to be the dominant source of differences in lifetime economic resources between those with richer and poorer parents.

7.7 Recommendations and conclusions

Inheritance tax desperately needs reform. One possibility is to abolish the tax. This would currently mean forgoing £7 billion annually in revenues. However, the cost of abolition would grow, as we expect inheritance tax revenues as a share of GDP to increase by around 70% over the coming decades (from 0.28% in 2022–23 to 0.48% in 2032–33), equivalent to an extra £8 billion in today's prices. Taking the proportion of deaths that result in inheritance tax back to its long-run average of 4% (from around 5½% in 2024–25) would be achieved by raising the nil-rate band to around £380,000 and would come at an estimated cost of £900 million a year. The question of whether it is appropriate to keep or abolish inheritance tax and how extensive the tax should be is not a question of economics alone but one that depends heavily on value judgements.

If retaining inheritance tax, there are a number of reforms that are strongly recommended by economic principles.

- **Recommendation 1: Abolish business relief and agricultural relief**, raising up to around £1.8 billion a year. If not abolishing these reliefs, they could be capped at a level of £500,000 per person (transferable between spouses). Capping business relief in this way would raise £1.1 billion in revenue, with several hundred million raised from a cap to agricultural relief.
- **Recommendation 2: Bring 80% of the value of bequeathed pension pots into estates**, raising around £200 million now, with revenues growing quickly over time.
- **Recommendation 3: Abolish the residence nil-rate band.** Doing this in conjunction with an increase in the regular nil-rate band to £500,000 would come at a net cost of £900 million. Doing this in a revenue-neutral way would mean increasing the nil-rate band to around £445,000. The revenue-neutral nil-rate band would be slightly higher, at around £455,000, if the current form of tapering were retained for estates above £2 million.

Together, capping business relief and abolishing reliefs for pensions and main residences could raise up to £4.5 billion. These additional revenues could be used to fund public services or tax cuts in other areas. If used to fund an increase in the nil-rate band, this would mean a nil-rate band of £525,000. If used to fund a cut in the headline rate of inheritance tax, this would mean a rate of 25%.

- **Recommendation 4: Abolish taper relief and the exemption for gifts that are 'normal expenditure out of income', and undertake work to establish the feasibility of moving to a system that taxes all lifetime gifts within inheritance tax or an annual gift tax.**

Some reforms to the treatment of gifts are straightforward improvements. Wider reforms could go in different directions, and further work is needed before we can make firm recommendations.

The treatment of transfers to partners also needs examination. The current structure benefits only married and civil partnered couples. While it is often thought of as a deferral of tax, it is anecdotally used by some wealthy and well-advised individuals to substantially reduce their inheritance tax bills. A potential direction for reform could be to cap spouse exemption at a high threshold, and increase the transferable nil-rate band for the survivor by the post-tax amount of assets on which their partner paid inheritance tax. Setting a cap at, say, £2.5 million would affect less than 1% of those in couples, but would substantially reduce the ability for this exemption to be used to avoid, rather than defer, large amounts of inheritance tax. This ensures some tax is paid on the first death while protecting the standard of living of the survivor or avoiding the same assets being subject to inheritance tax twice. An absence of data on how spouse exemption is used makes it difficult to quantify the extent to which avoidance is a problem, and therefore the urgency of reform.

There are other areas where reform is also needed, including the tax implications of gifts to charities, taxation of trusts, the 'connecting factors' which determine who is covered by inheritance tax, and the administrative burden imposed on large numbers of non-taxpaying estates. We do not make any specific recommendations on these here.

There are two other reforms that, moving beyond inheritance tax, would rationalise the treatment of taxation at death. These are based on ensuring that income tax and capital gains tax are not escaped just because an asset has been passed on at death.

- **Recommendation 5: Abolish the uplift of capital gains at death.** This would raise around £1.6 billion in revenue.
- **Recommendation 6: Charge income tax on withdrawals from inherited pension pots, regardless of the age of death of the deceased.** The revenue gains are very uncertain. This reform is unlikely to raise more than tens of millions per year initially, but this could grow rapidly over time.

The recommendations made here would result in taxation at death that was fairer, less distorting of people's choices about how to hold their wealth, and harder to avoid, and which would raise additional revenues that could be used to make offsetting cuts to inheritance tax, reduce other taxes, fund increased public spending or reduce government borrowing. It should be noted that even if reformed in these ways (and without offsetting reductions in the inheritance tax rate or increases in the nil-rate band), the inheritance tax system would only redistribute wealth away

from the beneficiaries of a small proportion of the largest estates and it would remain a small tax.

One of the leading rationales for having an inheritance tax is to improve equality of opportunity and, in particular, to reduce gaps in economic resources between those with more and less wealthy parents. Inheritance tax may substantively reduce inheritance gaps between those with the very wealthiest parents and others, but since it covers only a small share of estates, it does little to reduce the impact of inheritances on wealth inequalities between those with the least wealthy and merely quite wealthy parents. This should perhaps be unsurprising given that this tax raises only around 0.3% of GDP in revenues. This does not mean that inheritance tax cannot do more to redistribute wealth transfers between those with richer and poorer parents, but it would take a substantial expansion of the tax for it to have a significant impact on the differences in inherited wealth by parental background.

It is also important to note that although inheritances contribute to the difference in wealth between those with high- and low-wealth parents, by the time inheritances are being received these gaps are already large and established. These wealth differences are driven by differences in earnings and rates of saving but also by transfers of wealth much earlier in life – which are currently far outside the reach of inheritance tax in most cases – and their knock-on effects. For those concerned with social mobility it is therefore important to look earlier in life than parental death.

Appendix 7A

Methodology for projecting inheritance tax payments

At a high level, our method for projecting the distribution of inheritance tax payments under the current and counterfactual inheritance tax systems involves taking the current wealth distribution observed in the Wealth and Assets Survey (WAS), calculating the inheritance tax that would be due for each individual observed if they were to die with their current wealth, and then using Office for National Statistics (ONS) mortality rates to reweight this distribution of wealth to become a distribution of estates. We project forward to future years using assumptions for asset growth, wealth decumulation and projected mortality rates. We can assess the impacts of counterfactual inheritance tax systems by calculating the inheritance tax that would be due under alternative inheritance tax rules. We now give more detail on these steps.

Constructing the distribution of current and future wealth

We use the Wealth and Assets Survey round 6, which covers the period April 2016 to March 2018. While WAS round 7 is available and covers a more recent period, it does not allow certain asset classes to be distinguished, which makes it less suitable for our analysis. We adjust the

wealth observations in WAS to account for missing top-end wealth. This uses a procedure that is standard in the literature (Advani, Hughson and Tarrant, 2021) and increases total wealth by 5%.

We assume that households' wealth will change as they age because of both changes in the price of assets and active spending down of wealth. To take account of the former, we uprate wealth values to 2023 levels using growth in asset prices by asset class: housing wealth is uprated with the ONS average House Price Index, public equities and private business wealth is uprated with the FTSE All-Share Index, bonds are uprated with the S&P UK Gilt Index, other financial assets are uprated with nominal GDP growth, defined contribution (DC) pension wealth is uprated assuming an age-specific split into equities and bonds, and other physical wealth is uprated with the Consumer Prices Index (CPI). For the years from 2023–24 to 2027–28, we uprate the values of each asset type using the OBR's March Economic and Fiscal Outlook (EFO) forecasts for house price growth, the FTSE All-Share Index, nominal GDP growth, returns to gilts, and CPI inflation. For the period from 2027–28 to 2032–33, we use the OBR's long-term forecast assumptions.

We assume that households will draw down on their wealth as they age. In general, the decumulation of housing and financial non-pension wealth at older ages is modest. We draw upon estimates from Crawford (2018a and 2018b), who analysed the drawdown of housing wealth and of financial non-pension wealth, respectively, through older age. These studies estimate an average of around 1% real drawdown of financial assets per year and find a rate of downsizing that implies around half of homeowning households would downsize between the ages of 50 and 90, releasing on average £14,000 (or 9% of home value) in housing equity when they do so. Based on this, we assume 1% real annual drawdown of housing wealth, 5% real annual drawdown of unannuitised DC pension wealth, and 3% real annual drawdown of all other wealth. Estimates of the drawdown rates for unannuitised defined contribution wealth are very heterogeneous and limited given the short time since the pension freedoms reforms in 2015. There is therefore particular uncertainty around this assumption, but the main reason for strong growth in inheritance tax revenues from pensions, when included in estates, is their growing prevalence and size across generations. See Adam et al. (2022) for further evidence and discussion.

Estimating inheritance tax payments

To go from a distribution of wealth (i.e. what we would expect the distribution of wealth to be conditional on the survival of everyone in our sample) to a distribution of inheritance tax payments, we calculate for each individual in each year of our forecast their estate and inheritance tax due if they were to die with their current wealth.

We first make the following behavioural assumptions about how assets are distributed at death:

- We assume that within couples, wealth is always fully bequeathed to the surviving spouse so that those first to die in a couple have no taxable estate. In line with this, we assume that surviving spouses and civil partners inherit a full nil-rate band and residence nil-rate band from their partner. Clearly, some people with a surviving spouse do bequeath wealth to others, such as children, at death. However, HMRC statistics show that it is rare for these bequests to be large enough to lead to inheritance tax being payable. Evidence from the English Longitudinal Study of Ageing (ELSA) also confirms that bequeathing to a surviving spouse is the most common practice more widely (Crawford and Mei, 2018).
- We assume that the wealthiest 0.4% of those to die estates give 10% of their estate to charity. This is in line with HMRC statistics showing that 10% of taxable estates claim the reduced inheritance tax rate that applies when giving at least 10% of the estate to charity, combined with the Office of Tax Simplification (2019, chart 12.A) reporting that, in 2015–16, 96% of legacy gifts to charity were made by those giving away 10% or more of their estate to charity.
- WAS does not contain information about whether the respondent has direct descendants, which would allow them to take advantage of the residence nil-rate band if they bequeath residential property. We assume that all those who have ever been in a couple (i.e. report being currently either partnered or divorced) have children and will bequeath any property wealth to them (unless they have a surviving spouse) and that others do not make use of the residence nil-rate band. This is clearly imperfect. A substantial minority of lifetime single people have children and a substantial minority of partnered people do not.

We apply the inheritance tax system including the nil-rate band, residence nil-rate band (including residence nil-rate band taper) and exemptions for business property and unannuitised DC pension wealth. We assume that all thresholds are frozen in nominal terms until April 2028, in line with government policy, and then uprated with CPI thereafter. WAS does not allow us to identify agricultural assets, although some of these may be part of the business assets we observe. Business relief applies to unlisted shares and listed shares in which the individual has a greater than 50% stake. WAS collects data on whether an individual holds listed and unlisted shares but not the division of their shares into these two types. We assume that individuals who report holding any unlisted shares hold all of their shares in this form and that otherwise all shares are listed shares. However, our results are not sensitive to how we allocate the shares of those holding both listed and unlisted shares. This yields an estimate for the estate value and inheritance tax payment for each individual in each possible year in which they could die. We note that for those currently in couples, the above behavioural assumptions imply different levels of estate value and tax paid depending on whether they die with or without a partner.

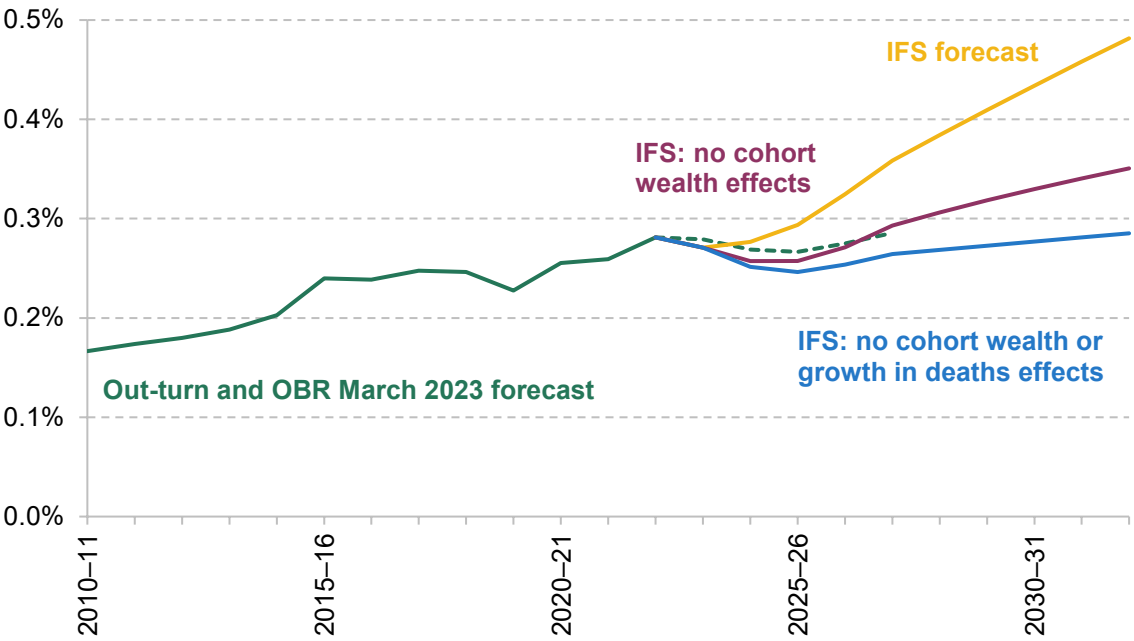
To estimate the distribution of estate values and inheritance tax payments in each year, we weight each individual observed by their cross-sectional survey weight multiplied by their probability of dying in the relevant year. In the case of couples, we are interested in the case

where they die with no surviving spouse and so we multiply by the probability that they will die in the relevant year with their partner having died before them. To assess the performance of this method, we 'forecast' the distribution of estates for our WAS data period. We find that the number, value and distribution of estates are similar to those reported in the HMRC statistics for the same period. We forecast a somewhat lower number of estates that are worth over £2 million. We therefore reweight the survey weights in our data in order to match the HMRC report of number of estates in the following bands: under £300,000, £300,000 to £500,000, £500,000 to £1 million, £1 million to £2 million, and £2 million or more. The largest adjustment made is for the final group, who are weighted up by around 20%. Upon reweighting the number of estates in this way, we match the reported inheritance tax revenues in the data period with a difference of less than 1%. We also closely match the OBR's March 2023 forecast for inheritance tax revenues in 2023–24. We forecast revenues of £7.0 billion compared with the OBR's £7.2 billion.

Comparison with OBR inheritance tax forecast

As set out in the main text, we forecast much stronger growth in inheritance tax revenues than in the OBR March EFO forecast. The OBR forecast is based upon projecting forward from the most recent administrative data on the distribution of estates, from inheritance tax returns. The assets in estates are grown in line with the forecast for asset price growth in a similar way to our approach. The number of estates is grown in line with official forecasts for deaths. Changes in the number of estates and tax revenues can therefore arise from these factors and how they interact with the tax system. In essence, the OBR method assumes that the distribution of wealth among those who die will change as a result of asset price growth but does not account for the fact that each year different generations of older people are passing away and that they have different levels of wealth. As set out in the main text, wealth is growing strongly across generations of older people. We show that this accounts for the difference between our forecast and that of the OBR. In the purple line in Figure 7A.1, we show how our forecast is changed if we assume no cohort effects in wealth. We assign the same death probabilities to our sample in each future year, also setting the drawdown of wealth to zero. In this scenario, we retain the growth in the number of people at each age (and therefore number of deaths) as the OBR does. Our two forecasts align closely. The light blue line additionally turns off the growth in the number of deaths, showing that without cohort effects in wealth or growth in the number of deaths, we would expect inheritance tax revenues to be very similar in 2032–33 to what they are now. Some of the growth in inheritance tax revenues over time is therefore attributable to this growth in the size of the elderly population. But the main factor – and the difference between our forecast and that of the OBR – is the large effect of cohort differences in wealth.

Figure 7A.1. Inheritance tax revenues as a percentage of GDP: breakdown of difference between IFS and OBR forecasts



Note: Includes estate duty and capital transfer tax, the predecessors of inheritance tax. Dashed line indicates OBR forecast. Yellow line indicates IFS forecast. Purple line indicates IFS forecast without the effects of cohort differences in wealth. Light blue line indicates IFS forecast without the effects of cohort differences in wealth or growth in the number of deaths.

Source: OBR's March 2023 Economic and Fiscal Outlook, IFS revenues composition spreadsheet, and authors' calculations using the Wealth and Assets Survey.

Estimates of the distribution of mean wealth, inheritances and inheritance tax by parental wealth quintile

To estimate the distribution of mean wealth, inheritances and inheritance tax by parental wealth quintile in 2024–25, we combine our WAS modelling with estimates of the relationship between parents' position in the wealth distribution and that of their children from Davenport, Levell and Sturrock (2021). These estimates calculate, for each parental wealth quintile (measured within age group), the distribution of children across wealth quintiles within their age group. This allows us to take a weighted average of mean child wealth levels across wealth quintiles, where we weight by the probability that a parent from a particular wealth quintile has a child in each wealth quintile. The estimates for inheritances and inheritance tax paid by parent wealth quintile are from our WAS modelling, where we take all those who report ever being in a couple and assume that their estate is split between three children (the mean number of children in a family for those who have children, for children born in the 1970s, as estimated in Bourquin, Joyce and Sturrock (2020)).

References

Adam, S., Delestre, I., Emmerson, C. and Sturrock, D., 2022. Death and taxes and pensions. IFS Report 235, https://ifs.org.uk/publications/death-and-taxes-and-pensions.

Advani, A., 2022. Policy Forum: the taxation of capital gains—principles, practice, and directions for reform. *Canadian Tax Journal / Revue fiscale canadienne*, 69, 1231–250, available at https://ssrn.com/abstract=4025492.

Advani, A., Bangham, G. and Leslie, J., 2021. The UK's wealth distribution and characteristics of high-wealth households. *Fiscal Studies*, 42, 397–430, https://doi.org/10.1111/1475-5890.12286.

Advani, A., Burgherr, D., Savage, M. and Summers, A., 2022. The UK's 'non-doms': who are they, what do they do, and where do they live? CAGE Policy Briefing 36, https://warwick.ac.uk/fac/soc/economics/research/centres/cage/manage/publications/bn36.2022.pdf.

Advani, A., Hughson, H. and Tarrant, H., 2021. Revenue and distributional modelling for a UK wealth tax. *Fiscal Studies*, 42, 699–736, https://doi.org/10.1111/1475-5890.12280.

Advani, A., Koenig, F., Pessina, L. and Summers, A., 2023. Importing inequality: immigration and the top 1 percent. *Review of Economics and Statistics*, forthcoming (working paper version: https://warwick.ac.uk/fac/soc/economics/research/centres/cage/manage/publications/wp508.2020.pdf).

Advani, A. and Summers, A., 2020. Capital gains and UK inequality. CAGE Working Paper 465, https://warwick.ac.uk/fac/soc/economics/research/centres/cage/manage/publications/wp465.2020.pdf.

All-Party Parliamentary Group for Inheritance and Intergenerational Fairness, 2020. Reform of inheritance tax. https://www.step.org/system/files/media/files/2020-05/STEPReform_of_inheritance_tax_report_012020.pdf.

Alvaredo, F., Chancel, L., Piketty, T., Saez, E. and Zucman, G., 2017. Global inequality dynamics: new findings from WID.world. *American Economic Review*, 107, 404–9, https://doi.org/10.1257/aer.p20171095.

Ansell, B., 2023. A puzzling inheritance: why, in a world where wealth matters more than ever, we want to tax it less. https://benansell.substack.com/p/a-puzzling-inheritance.

Atkinson, A.B., 2018. Wealth and inheritance in Britain from 1896 to the present. *Journal of Economic Inequality*, 16, 137–69, https://doi.org/10.1007/s10888-018-9382-1.

Bloom, N., Sadun, R. and Van Reenen, J., 2010. Recent advances in the empirics of organizational economics. *Annual Review of Economics*, 2, 105–37, https://doi.org/10.1146/annurev.economics.050708.143328.

Boadway, R., Chamberlain, E. and Emmerson, C., 2010. Taxation of wealth and wealth transfers. In J. Mirrlees, S. Adam, T. Besley, R. Blundell, S. Bond, R. Chote, M. Gammie, P. Johnson, G. Myles and J. Poterba (eds), *Dimensions of Tax Design: The Mirrlees Review*, Oxford University Press for the Institute for Fiscal Studies. https://ifs.org.uk/books/taxation-wealth-and-wealth-transfers.

Boileau, B. and Sturrock, D., 2023a. Who gives wealth transfers to whom and when? Patterns in the giving and receiving of lifetime gifts and loans. IFS Report 243, https://ifs.org.uk/publications/who-gives-wealth-transfers-whom-and-when-patterns-giving-and-receiving-lifetime-gifts.

Boileau, B. and Sturrock, D., 2023b. What drives the timing of inter-vivos transfers? IFS Working Paper 23/09, https://ifs.org.uk/publications/what-drives-timing-inter-vivos-transfers.

Bourquin, P., Brewer, M. and Wernham, T., 2022. Trends in income and wealth inequalities. IFS Deaton Review of Inequalities, https://ifs.org.uk/publications/trends-income-and-wealth-inequalities.

Bourquin, P., Joyce, R. and Sturrock, D., 2020. Inheritances and inequality within generations. IFS Report 173, https://ifs.org.uk/publications/inheritances-and-inequality-within-generations.

Bourquin, P., Joyce, R. and Sturrock, D., 2021. Inheritances and inequality over the life cycle: what will they mean for younger generations? IFS Report 188, https://ifs.org.uk/publications/inheritances-and-inequality-over-life-cycle-what-will-they-mean-younger-generations.

Broome, M., Mulheirn, I. and Pittaway, S., 2023. Peaked interest? What higher interest rates mean for the size and distribution of Britain's household wealth. Resolution Foundation, https://www.resolutionfoundation.org/app/uploads/2023/07/Peaked-interest.pdf.

Burgherr, D., 2021. The costs of administering a wealth tax. *Fiscal Studies*, 42, 677–97, https://doi.org/10.1111/1475-5890.12276.

Chamberlain, E., 2020. Does inheritance tax have a future? Practical options to consider. In G. Loutzenhiser and R. de la Feria (eds), *The Dynamics of Taxation: Essays in Honour of Judith Freedman*, Hart Publishing (https://www.bloomsbury.com/uk/dynamics-of-taxation-9781509929092/).

Corlett, A., Advani, A. and Summers, A., 2020. Who gains? The importance of accounting for capital gains. Resolution Foundation, https://www.resolutionfoundation.org/app/uploads/2020/05/Who-gains.pdf.

Corlett, A. and Judge, L., 2017. Home affront: housing across the generations. Resolution Foundation. https://www.resolutionfoundation.org/publications/home-affront-housing-across-the-generations/.

Crawford, R., 2018a. The use of financial wealth in retirement. IFS Briefing Note 236, https://ifs.org.uk/publications/use-financial-wealth-retirement.

Crawford, R., 2018b. The use of housing wealth at older ages. IFS Briefing Note 239, https://ifs.org.uk/publications/use-housing-wealth-older-ages.

Crawford, R. and Mei, P., 2018. An overview of the ELSA 'end of life' data. IFS Report R144, https://ifs.org.uk/publications/overview-elsa-end-life-data.

Davenport, A., Levell, P. and Sturrock, D., 2021. Why do wealthy parents have wealthy children? IFS Report 196, https://ifs.org.uk/publications/why-do-wealthy-parents-have-wealthy-children-0.

Deloitte, 2023. Inheritance tax: non-UK domiciled spouses. Briefing document, https://taxscape.deloitte.com/insights/article/inheritance-tax--non-uk-domiciled-spouses.aspx.

van der Erve, L., Krutikova, S., Macmillan, L. and Sturrock, D., 2023. Intergenerational mobility in the UK. IFS Deaton Review of Inequalities, https://ifs.org.uk/inequality/intergenerational-mobility-in-the-uk/.

Goupille-Lebret, J. and Infante, J., 2018. Behavioral responses to inheritance tax: evidence from notches in France. *Journal of Public Economics*, 168, 21–34, https://doi.org/10.1016/j.jpubeco.2018.09.016.

Groot, S., Möhlmann, J. and Sturrock, D., 2022. Wealth, gifts and estate planning at the end of life. IFS Working Paper 22/29, https://ifs.org.uk/publications/wealth-gifts-and-estate-planning-end-life.

HM Revenue and Customs, 2023a. Inheritance tax liabilities statistics. https://www.gov.uk/government/collections/inheritance-tax-statistics.

HM Revenue and Customs, 2023b. Abolishing the pensions lifetime allowance. https://www.gov.uk/government/publications/abolishing-the-pensions-lifetime-allowance.

Intergenerational Commission, 2018. A new generational contract: the final report of the Intergenerational Commission. Resolution Foundation, https://www.resolutionfoundation.org/advanced/a-new-generational-contract/.

Kopczuk, W., 2013. Taxation of intergenerational transfers and wealth. In A. Auerbach, R. Chetty, M. Feldstein and E. Saez (eds), *Handbook of Public Economics: Volume 5*, Elsevier. http://www.columbia.edu/~wk2110/bin/handbook-final.pdf.

Loutzenhiser, G. and Mann, E., 2021. Liquidity issues: solutions for the asset rich, cash poor. *Fiscal Studies*, 42, 651–75, https://doi.org/10.1111/1475-5890.12281.

Meade, J., 1978. *The Structure and Reform of Direct Taxation: Report of a Committee chaired by Professor J. E. Meade for the Institute for Fiscal Studies*. George Allen & Unwin. https://ifs.org.uk/books/structure-and-reform-direct-taxation.

OECD, 2021. Inheritance taxation in OECD countries. https://www.oecd.org/tax/tax-policy/inheritance-taxation-in-oecd-countries-e2879a7d-en.htm.

Office of Tax Simplification, 2018. Inheritance Tax Review – first report: overview of the tax and dealing with administration. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/758367/Final_Inheritance_Tax_Report_-_web_copy.pdf.

Office of Tax Simplification, 2019. Inheritance Tax Review – second report: simplifying the design of inheritance tax. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/816520/Final_Inheritance_Tax_2_report_-_web_copy.pdf.

Office of Tax Simplification, 2020. Capital Gains Tax Review – first report: simplifying by design. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/935073/Capital_Gains_Tax_stage_1_report_-_Nov_2020_-_web_copy.pdf.

Sturrock, D., 2023. Wealth and welfare across generations. IFS Working Paper 23/15, https://ifs.org.uk/publications/wealth-and-welfare-across-generations.

Summers, A., 2021. Ways of taxing wealth: alternatives and interactions. *Fiscal Studies*, 42, 485–507, https://doi.org/10.1111/1475-5890.12285.

Data

Office for National Statistics, Social Survey Division. (2023). *Wealth and Assets Survey, Waves 1-5 and Rounds 5-7, 2006-2020*. [data collection]. *18th Edition.* UK Data Service. SN: 7215, DOI: http://doi.org/10.5255/UKDA-SN-7215-18.

University of Essex, Institute for Social and Economic Research. (2023). *Understanding Society: Waves 1-12, 2009-2021 and Harmonised BHPS: Waves 1-18, 1991-2009*. [data collection]. *17th Edition.* UK Data Service. SN: 6614, DOI: http://doi.org/10.5255/UKDA-SN-6614-18.

8. Implications of the NHS workforce plan

Max Warner and Ben Zaranko (IFS)

Key findings

1. In June, NHS England published its much-awaited long-term workforce plan, which was welcomed across the political spectrum. **The plan aims to increase the number of staff employed by the English NHS from around 1.5 million in 2021–22 to between 2.3 and 2.4 million in 2036–37.** This would be equivalent to average growth in the size of the NHS workforce of between 3.1% and 3.4% per year. For context, we estimate that NHS staffing numbers grew by around 1.1% per year between 2009–10 and 2019–20.

2. If this increase in the NHS workforce is delivered, we estimate that **almost half (49%) of public sector workers in England will work for the NHS in 2036–37**, compared with 38% in 2021–22 and 29% in 2009–10. **By 2036–37, we estimate that one in eleven (9%) of all workers in England will work for the NHS**, compared with one in seventeen (6%) in 2021–22 and 2009–10.

3. While the plan included £2.4 billion of additional funding for the training of new staff, **it did not consider the (much larger) medium-term implications of this large increase in staffing for the NHS paybill**, nor the required increase in other inputs if the NHS is to treat substantially more patients. This will mean difficult fiscal decisions at future Spending Reviews.

4. **Increasing the size of the workforce so rapidly will likely require NHS wages to become more generous in real terms** and – potentially – match or even exceed growth in wages in the rest of the economy. It will also likely require an increase in non-staffing inputs to healthcare (most obviously things such as drugs and equipment).

5. Under a central set of assumptions, **the workforce plan implies annual NHS budget increases of around 3.6% per year in real terms (or 70% in total by 2036–37)**. This would be in line with the long-run average real-terms growth rate in UK health spending (3.6% per year from 1949–50 to 2022–23), but higher than the 2.4% per year seen since 2009–10. **In other words, returning to the NHS's long-run average funding growth rate could be enough to fund the workforce plan**, but those increases would need to be delivered in a period when economy-wide productivity growth is expected to be lower than what it has been for much of the NHS's history.

6. In the central case, spending on the NHS in England would be around 2% of GDP higher by 2036–37, relative to 2021–22 (the starting point for the workforce plan). That is similar to the increase in UK health spending over the 15 years to 2008–09 (2.2% of GDP) and **equivalent to around an extra £50 billion in today's terms**. To give a sense of scale, raising that sort of sum would require increasing the standard rate of VAT from 20% to around 27% by 2036–37 or increasing all income tax rates by around 6 percentage points. Other funding options would of course be available.

7. By the NHS's own estimates, **the staffing increases contained in the plan will only be enough to meet NHS demand if productivity can be increased by between 1.5% and 2% per year: an extremely ambitious target** well above what the NHS is estimated to have achieved in the past. The Office for National Statistics estimates that quality-adjusted productivity in the NHS increased by an average 0.8% per year between 1995–96 (when the data series starts) and 2019–20, and 1.2% per year between 2009–10 and 2019–20. While not perfectly comparable to the measure of labour productivity used in the workforce plan, this gives a sense of the scale of the ambition – particularly as, since the onset of the pandemic, measured productivity performance in the NHS has been even weaker.

8.1 Introduction

In January 2000, in what was subsequently dubbed 'the most expensive breakfast in history', then Prime Minister Tony Blair announced on Sir David Frost's Sunday morning TV show that UK health spending would be increased to the European Union average. The then Chancellor Gordon Brown was rather displeased, and reportedly raged to the prime minister that 'you've stolen my f***ing budget' (Rawnsley, 2010).

In June, NHS England published its much-awaited long-term workforce plan (NHS England, 2023). For the first time, the plan sets out official estimates of how many staff the NHS will need in the future and proposes a range of actions and targets to achieve this. Its publication was welcomed across the political spectrum.

Many have discussed the strengths and weaknesses of the plan elsewhere (e.g. Black, 2023; Dixon, 2023; Murray, 2023; Palmer, 2023). But one of the less remarked-upon aspects of the plan is that it has probably stolen more than a decade's worth of budgets, for funding the plan will require NHS spending in England to increase by around 2% of national income over 15 years, equivalent to around £50 billion in today's terms. That will set the context and constraints in every Budget and Spending Review for at least the next decade.

Here, we do not seek to evaluate the merits of the plan, its modelling assumptions or its achievability. Instead, we start from the assumption that the plan will be implemented in full and consider the potential implications for the size of the NHS workforce and NHS budget in England. While the plan includes funding for new training places, it does not estimate nor provide for the longer-term increases in funding that will be required to cover the salaries – and other costs – of an expanded workforce.

The plan suggests the number of staff employed by the English NHS will increase from around 1.5 million in 2021–22 to between 2.3 and 2.4 million in 2036–37. This would be equivalent to average growth in the size of the NHS workforce of between 3.1% and 3.4% per year. For context, we estimate that NHS staffing numbers grew by around 1.1% per year between 2009–10 and 2019–20. Meeting the plan would almost certainly see the NHS account for a growing share of not just public sector employment but also the overall workforce. By 2036–37, we estimate that almost half (49%) of public sector workers in England will work for the NHS, compared with 38% in 2021–22 and 29% in 2009–10. Moreover, we estimate that one in eleven (9%) of all workers in England will work for the NHS, compared with one in seventeen (6%) in 2021–22 and 2009–10.

Such an expansion in the workforce has implications for the size of the NHS wage bill. First and most obviously, employing hundreds of thousands of additional people will increase staffing costs. But in addition, to attract and retain this many more workers, it seems likely that – at a minimum – NHS pay will need to keep pace with earnings in the wider economy. Taken together, we estimate that the workforce plan implies real-terms increases in the NHS wage bill of around 4.4% per year. Even if all other NHS spending (on non-staff items) were frozen in real terms for the next 15 years, this implies that the NHS budget would need to increase by around 2.3% per year, over and above inflation, to cover these higher staffing costs alone.

But more staff will surely mean increased spending elsewhere, whether on new hospitals, equipment or medicines. We estimate that under a central set of assumptions, the workforce plan implies annual NHS budget increases of around 3.6% per year in real terms. This would be in line with the long-run average real-terms growth rate in UK health spending (3.6% per year from 1949–50 to 2022–23), but above the 2.4% per year seen since 2009–10. In other words, returning to the NHS's long-run average funding growth rate could be enough to fund the workforce plan. But with prospects for productivity growth over the next decade weaker than what was realised over the first 60 years of the NHS's life, continuing to deliver the same real-terms growth rate would mean harder trade-offs elsewhere. It would mean that funding for the NHS in England would increase by around 2.0% of GDP by 2036–37: similar to the increase in UK health spending over the 15 years to 2008–09 (2.2% of GDP) and equivalent to an extra £52 billion in today's terms. By the NHS's own estimates, though, this will only be enough to meet demand if productivity can be increased by between 1.5% and 2% per year: an extremely ambitious target.

Stepping back, the publication of the NHS workforce plan is probably as close as any government is ever going to get to explicitly acknowledging the virtual inevitability of big increases in health spending over the medium term. That acknowledgement should be front and centre of the Chancellor's fiscal event this autumn.

8.2 What is in the plan?

The workforce plan is organised around three themes: training new staff, retaining existing staff and reforms to improve productivity. To train new staff members, the plan proposes large increases in medicine and nursing university places, as well as expansions to apprenticeships and alternative routes into clinical roles. For example, the plan aims to double the number of medical school places, increase the number of GP training places by 50% and almost to double the number of adult nursing training places (an increase of 92%), all by 2031–32. The plan includes additional funding of £2.4 billion over the next six years for this expansion in training. As the domestic supply of staff expands, the plan forecasts that the share of NHS staff recruited from overseas will fall from nearly 25% to around 10% by 2036–37 (specifically between 9% and 10.5%).

To retain existing staff, the plan outlines a range of proposals, including increasing flexible working, improving the health of the workforce, and improving local and national culture and leadership. The objective is to reduce the annual NHS-wide leaver rate from 9.1% to between 7.4% and 8.2%, a target which is dubbed 'a stretching but realistic trajectory'.

Finally, the plan focuses on increasing productivity. One key part of this is the expansion of new roles – such as physician associates and nursing associates – that aim to free up time for more trained, traditional roles such as doctors and registered nurses. Another part of the plan to increase productivity is through the use of new technology, such as artificial intelligence and robotic assisted surgery. Overall, the plan is based on an 'ambitious' assumption that labour productivity will increase by between 1.5% and 2% per year. For context, the Office for National Statistics estimates that (quality-adjusted) productivity in the NHS increased by an average 0.8% per year between 1995–96 (when the data series starts) and 2019–20, and 1.2% per year between 2009–10 and 2019–20.[1] Since the COVID-19 pandemic began, measured productivity has fallen substantially (Warner and Zaranko, 2022). While not perfectly comparable to the labour productivity measure used in the workforce plan, this provides an indication of the degree of ambition of the plan's assumptions.

Importantly, as well as outlining a range of actions and objectives, the plan includes detailed workforce modelling. For each professional staff group within the NHS, the plan forecasts the full-time-equivalent (FTE) number of staff needed by 2036–37. It then forecasts how supply would change without the workforce plan (counterfactual supply) and how each aspect of the plan will increase or decrease the workforce over time. This leads to forecasts for the total workforce in each staff group in 2026–27, 2031–32 and 2036–37.

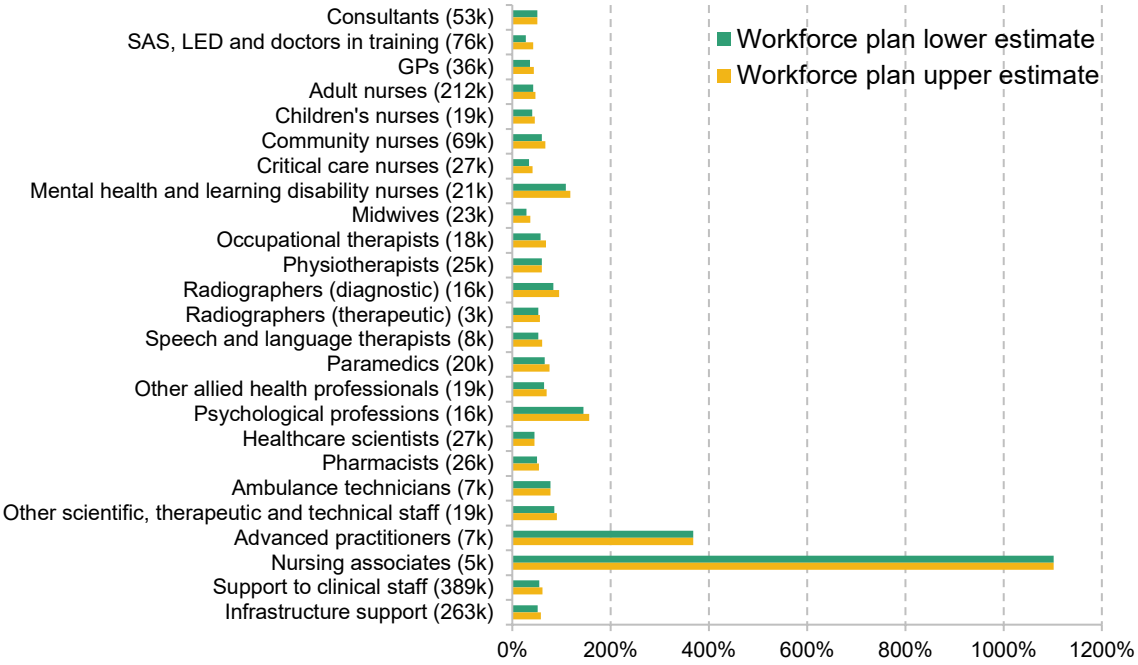
Here and throughout, our primary focus is on the number of workers employed by the NHS (defined as 'substantive' staff in post, plus those employed on a bank-only contract), as these are the groups relevant for the NHS paybill and the groups the workforce plan aims to increase. Agency staffing is implicitly assumed to fall to almost zero by 2036–37; indeed, reducing dependency on agency staffing is an explicit objective of the plan and one that, if achieved, could reduce budgetary pressures. We therefore exclude agency workers from our analysis of the workforce, but allow for an elimination of agency spending by 2036–37 in our funding projections.

Figure 8.1 shows the plan's target growth for each staff group between 2021–22 and 2036–37. The starting point includes substantive staff and an estimate for the number of 'bank-only' staff in each group. The plan includes a lower bound (the green bars) and an upper bound (the yellow bars) to help highlight the uncertainty over the impacts of actions taken in the plan. The first panel of the figure includes all professional staff groups. It is clear that the two emerging roles – advanced practitioners and nursing associates – are planned to increase dramatically, by far more than other, more traditional roles within the NHS. The number of advanced practitioners is forecast to increase from 8,300 in 2021–22 to 39,000 in 2036–37, an increase of 370%, while the number of nursing associates is forecast to increase from 5,300 to 64,000, an increase of 1,100%.

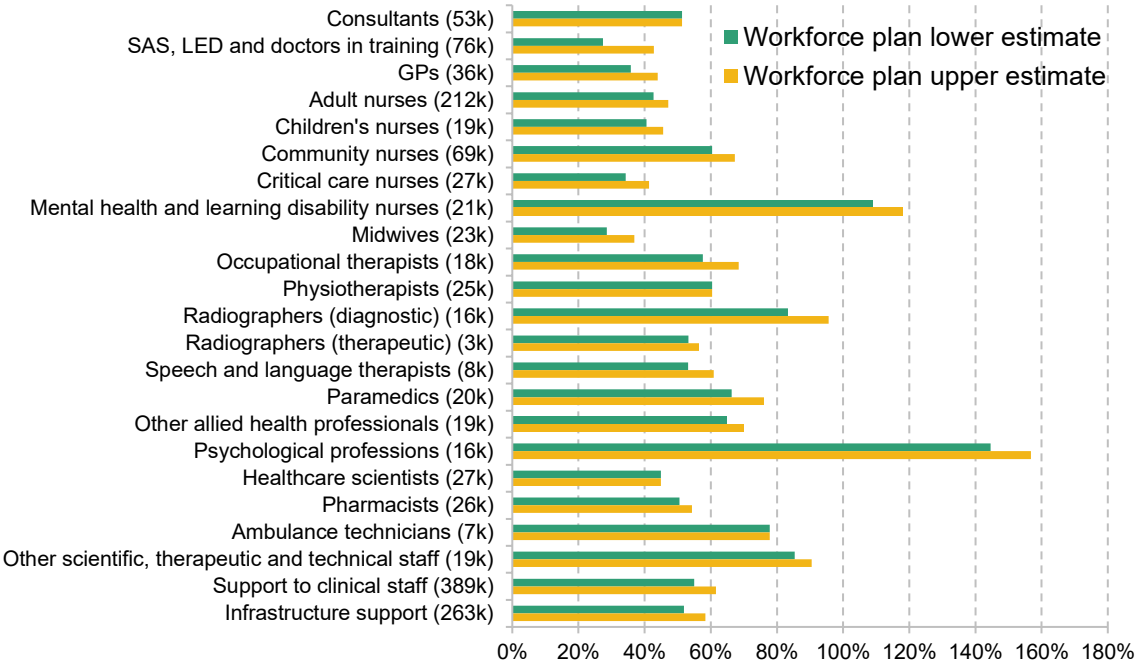
[1] https://www.ons.gov.uk/economy/economicoutputandproductivity/publicservicesproductivity/articles/publicservicesproductivityestimateshealthcare/financialyearending2021.

Figure 8.1. Percentage growth in staff groups between 2021–22 and 2036–37

a) All roles (size of group in 2021–22 in parentheses)



b) Excluding emerging roles (size of group in 2021–22 in parentheses)



Note: Figure shows the percentage increase in substantive and bank-only NHS staff in each professional group, with the NHS's lower and upper estimates. The NHS workforce plan does not include the number of bank-only staff in each group in 2021–22, so we estimate this using the plan's assumption that the proportion of bank-only staff stays constant over time and assuming that within each larger professional staff group the rate of bank-only working is the same. SAS – specialty and associate specialist doctors; LED – locally employed doctors.

Source: Authors' calculations using NHS England's long-term workforce plan (NHS England, 2023).

The second panel of the figure excludes these two emerging staff groups, in order to focus on the changes in other, much larger staff groups. Mental health staff – both psychological professions and mental health and learning disability nurses – are the groups with the largest forecast increases, with increases of 140–160% and 110–120% respectively. The number of consultants is forecast to increase by 51%, while the number of adult nurses is forecast to increase by 43–47%. The two largest staff groups – support to clinical staff, and infrastructure support – are forecast to grow by 55–62% and 52–58% respectively.

Taken together, the plan has two key implications for the NHS workforce. One is a substantial expansion in the numbers in all staff groups. Even the smallest increases are still large: a 29–37% increase in the number of midwives, for instance. The second implication is a change in the composition of the workforce – increasing the number of associate roles, and expanding the mental health sector relative to the acute and community sectors.

8.3 What does the plan mean for the size of the NHS workforce?

We now consider the implications of the plan for the total size of the NHS workforce. The plan includes all of those working in the hospital and community healthcare sectors, as well as GPs working in primary care. We do not include pharmacists or dentists in our analysis, as these were modelled separately in the plan and are not typically employed directly by the NHS. These are relatively small groups of staff and their exclusion will not materially alter our headline conclusions.

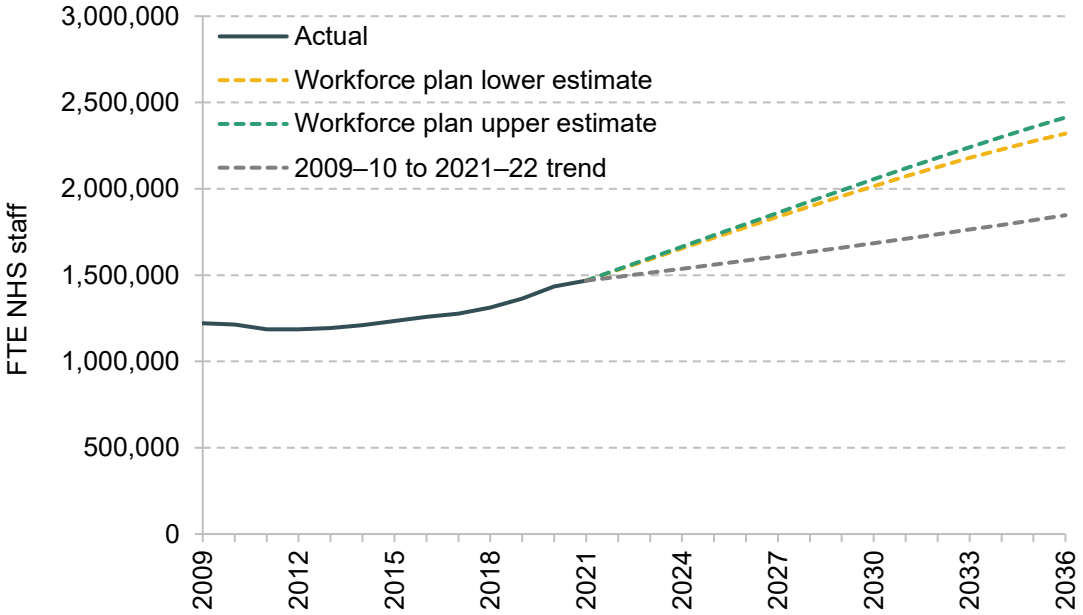
Overall, the plan aims to increase the *permanent* NHS workforce from 1.4 million in 2021–22 to between 2.2 and 2.3 million in 2036–37, an increase of between 57% and 64%.

This measure excludes temporary staff: those employed via an agency, and those employed by the NHS on ‘bank-only’ contracts. As described above, our preferred measure is the sum of ‘substantive’ staff in post and bank-only staff, all of whom are employed by the NHS, but excluding agency staff. On this definition, NHS staffing is planned to grow from about 1.5 million to between 2.3 and 2.4 million over the 15-year period: between 58% and 64%, or between 3.1% and 3.4% per year.

Figure 8.2 shows how the size of the NHS workforce in England has changed since 2009–10, and how it will continue to grow if the workforce plan is met. Crucially, the forecast annual growth rate – between 3.1% and 3.4% per year – is far higher than the pre-pandemic growth rate of 1.1% per year between 2009–10 and 2019–20. Even after including the COVID-19 pandemic, the NHS workforce grew by 1.5% per year between 2009–10 and 2021–22, far lower than the

growth rate implied by the workforce plan. The grey dashed line in Figure 8.2 illustrates what would happen to the NHS workforce if it continued to grow at this rate. For context, UK-wide NHS employment grew by 3.0% per year between 1999 and 2009, slightly slower than under the workforce plan (Office for National Statistics, 2023).

Figure 8.2. Size of the NHS workforce in England if plan is implemented and achieved in full

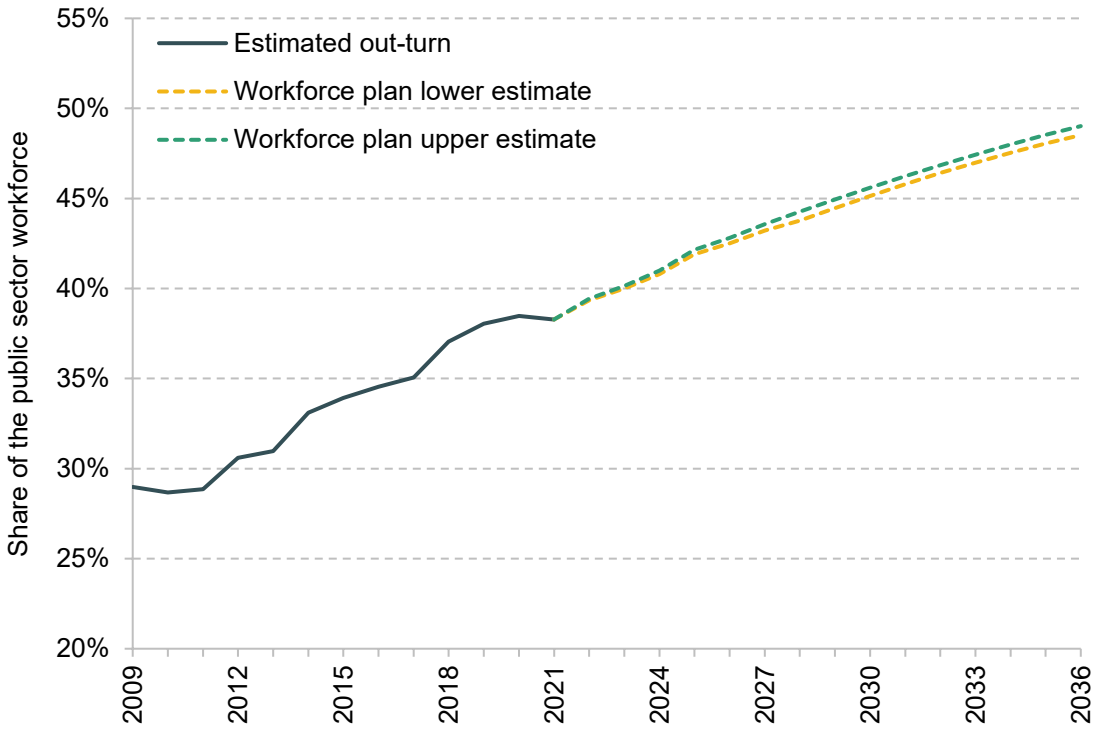


Note: All years are fiscal years (April to March). Only includes NHS staff included in table 3 of the workforce plan, so excludes dentistry and community pharmacy. The lower and upper estimates are quartic extrapolations between the values in the plan for 2021–22 (adjusted to include bank-only staff), 2026–27, 2031–32 and 2036–37. The actual series is based on all staff in hospital and community healthcare settings and GPs in primary care. There is a structural break in the GP series from 2016. It is rescaled to match the baseline plan figure in 2021–22.

Source: Authors' calculations using NHS England's long-term workforce plan (NHS England, 2023), NHS Digital's NHS workforce statistics March 2023 (https://digital.nhs.uk/data-and-information/publications/statistical/nhs-workforce-statistics/march-2023) and NHS Digital's general practice workforce statistics (various) (https://digital.nhs.uk/data-and-information/publications/statistical/general-and-personal-medical-services).

This large increase in staffing means that the NHS workforce will almost certainly make up a bigger share of the public sector and economy-wide workforce. In Figure 8.3, we estimate the future path for NHS England employment as a fraction of total public sector employment in England. To do so, we assume that the non-NHS public sector workforce grows in line with the Office for Budget Responsibility (OBR)'s forecasts for general government employment, and that NHS staffing grows in line with the workforce plan.

Figure 8.3. Estimated NHS England workforce as a share of the public sector workforce in England if plan is achieved



Note: All years are fiscal years (April to March). Excludes dentistry and community pharmacy. We use the FTE NHS staff numbers calculated in Figure 8.2. We use Office for National Statistics (ONS) estimates of the public sector workforce headcount in England for 2009–10 to 2022–23. We rescale these to FTE using the UK-wide ONS estimates of public sector workforce headcount and FTE. Beyond 2022–23, we grow our estimate of the non-NHS public sector workforce by the OBR UK-wide forecast growth of general government employment.

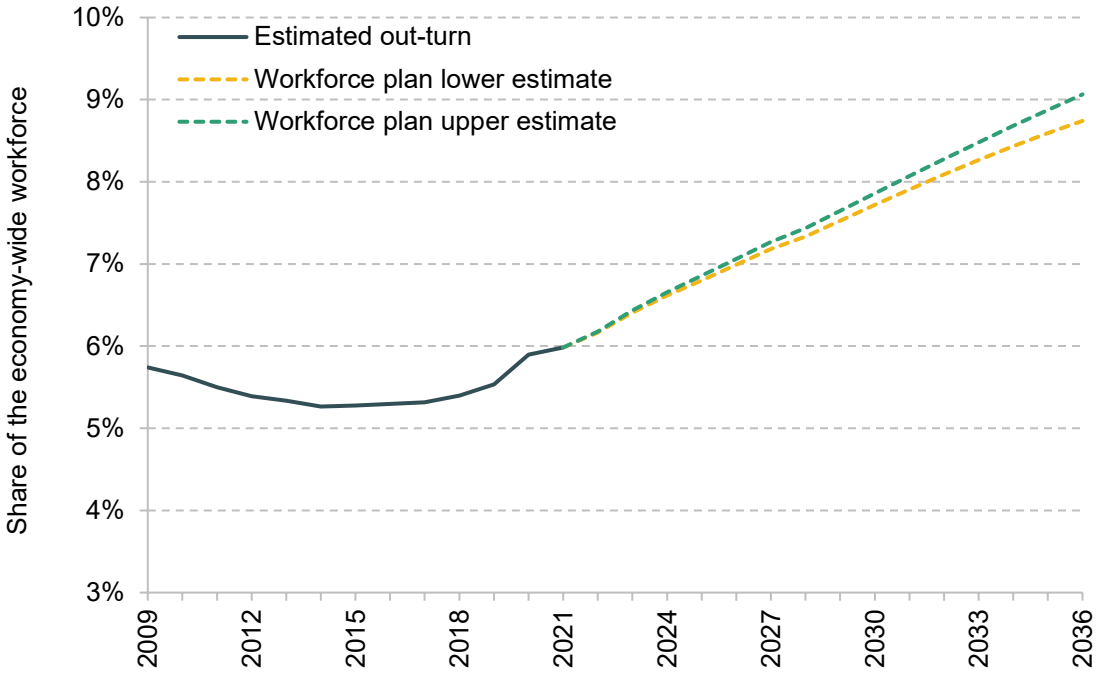
Source: Authors' calculations using all sources in Figure 8.2, ONS public sector employment March 2023 (https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/publicsectorpersonnel/datasets/publicsectoremploymentreferencetable), OBR supplementary economy tables March 2023 (https://obr.uk/efo/economic-and-fiscal-outlook-march-2023/) and OBR long-term economic determinants June 2023 (https://obr.uk/efo/economic-and-fiscal-outlook-march-2023/).

In 2009–10, NHS staff made up an estimated 29.0% of the public sector workforce in England, and this rose to 38.3% by 2021–22. Under our assumptions, we estimate that by 2036–37, NHS staff will make up between 48.5% and 49.0% of the public sector workforce. The NHS workforce will therefore have risen from just over a quarter of the public sector workforce in England to around half in less than three decades. If anything, this is likely to overstate non-NHS public sector workforce growth, since OBR's forecasts for general government employment include the NHS, and thus our estimates likely understate the increase in the NHS's share of the total.

Figure 8.4 repeats this analysis for the economy-wide workforce in England. We assume that the non-NHS workforce grows in line with OBR projections for overall employment until 2027–28 (the end of the forecast period), and that it then grows in line with ONS projections for the

working-age population. We estimate that the NHS workforce rose from 5.7% of the economy-wide workforce in England in 2009–10 to 6.0% in 2021–22. This is a much smaller increase than the increase in the NHS as a share of the public sector workforce because, whereas the public sector workforce was reduced in size over the 2010s, the economy-wide workforce increased in size.

Figure 8.4. Estimated NHS England workforce as a share of the economy-wide workforce in England if plan is achieved



Note: All years are fiscal years (April to March). Excludes dentistry and community pharmacy. We use the FTE NHS staff numbers calculated in Figure 8.2 transformed to headcounts using historical average FTE to headcount ratios in the NHS and assuming this remains constant at its 2022–23 level. We use Labour Force Survey (LFS) estimates of the English workforce between 2009 and 2021. We assume the non-NHS workforce grows in line with OBR UK workforce projections until 2027–28, and then grows in line with ONS projections for the English working-age population.

Source: Authors' calculations using all sources in Figure 8.2, OBR supplementary economy tables March 2023 (https://obr.uk/efo/economic-and-fiscal-outlook-march-2023/), ONS headline LFS indicators July 2023 (https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/datasets/headlinelabourforcesurveyindicatorsforallregionshi00) and ONS 2020-based national population projections, June 2022 estimated international migration variant (https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections/datasets/2020basedinterimnationalpopulationprojectionsyearendingjune2022estimatedinternationalmigrationvariant).

If the workforce plan is achieved, we estimate that the NHS England workforce will account for between 8.7% and 9.1% of economy-wide employment in England in 2036–37. This means that, under conservative assumptions, one in eleven working adults could be working for the NHS in 2036–37, compared with one in seventeen in 2021–22. That will clearly increase the importance of the NHS, as an employer, to the wider labour market and macroeconomy. The broader health

and social care sector will be more important still. Even if the adult social care workforce only grows in line with the wider workforce in England, by 2036–37 one in seven working adults could be employed in health and social care.

8.4 What does the plan imply for NHS funding?

We now consider what the workforce plan could mean for NHS funding. There are two direct costs of the increase in staffing: the costs associated with training new staff, and the costs of actually employing new staff (and retained existing staff). The plan includes funding for the former (staff training). We focus here on the additional and substantially larger cost of employing a much larger workforce, funding for which will (presumably) need to be provided at future Spending Reviews. We then consider the indirect implications of the workforce plan: if the NHS has between 58% and 64% more staff by 2036–37, it will almost certainly require more spending on other areas. To take one simple example, if the health service employs far more doctors, we might expect an increase in the amount of medicine being prescribed.

In this section, we focus on the impacts of the plan for NHS day-to-day (resource) spending, but the plan will also likely have implications for capital spending: such a large increase in staffing will also likely (at some point) require new equipment and new hospitals. As the plan itself states, to achieve the required productivity assumptions will require 'a sustained increase in capital investment in the ageing NHS estate … [and] investment in digital infrastructure throughout the NHS' (NHS England, 2023, page 109).

Staff costs

We first consider the total staffing costs for NHS providers, including NHS hospital and community trusts. In 2021–22, NHS England's resource budget was £146.5 billion (equivalent to £156.1 billion in 2022–23 prices) and it spent £66.2 billion on staff working for NHS providers, equivalent to 45.2% of its total budget (Department of Health and Social Care, 2023). This does not include staff employed by non-NHS providers, such as those working in primary care, dentistry, or community pharmacy. In our calculations of the wage bill, we therefore exclude the costs of employing the additional GPs (who have been included in our analysis up to this point) included in the plan, as well as dentistry and community pharmacy staff (who have not). Larger staff numbers in these other sectors of the NHS will implicitly be part of the increase in 'other' NHS costs that we subsequently consider.

According to the workforce plan, the total number of staff employed by NHS providers will grow by between 3.1% and 3.4% per year from 2021–22 to 2036–37. A very simple forecast,

therefore, would be that the NHS wage bill will also grow by between 3.1% and 3.4% per year in real terms. Implicitly, this assumes that both real wages and the mix of professional groups stay constant between 2021–22 and 2036–37.

Neither of these assumptions seems plausible. As Figure 8.1 shows, the largest staffing increases in the plan are for new associate roles, which typically have lower wages than the traditional roles they are designed to be partial substitutes for. This change in professional mix will therefore reduce the real growth rate in the wage bill relative to the growth rate in staff numbers, though only very marginally: we estimate that annual growth in the wage bill might be reduced by around 0.05 percentage points as a result.

More significantly, if the NHS is going to expand its workforce by more than half, it will need a strategy for attracting workers into the sector (and subsequently retaining them). That is almost certain to require real-terms wage increases, and highly likely to require pay increases that match – or perhaps even exceed – economy-wide earnings growth.

The OBR forecasts that between 2024–25 and 2036–37, economy-wide nominal wages will grow on average by 3.3% per year (for the years before 2024–25, we use estimates of NHS pay deals). After accounting for expected inflation (as measured by the GDP deflator – the relevant measure in this case since we are focused on public service spending rather than household spending power), this would equate to average real-terms pay growth of 1.2% per year. We use this as our central scenario for future NHS pay growth. Combined with planned growth in the size of the workforce (taking the midpoint of the NHS's two scenarios), this would lead to average growth in the real-terms wage bill of around 4.4% per year.

Table 8.1 presents this central scenario, along with two alternatives. (The table also shows scenarios for non-pay spending, which are discussed in the next subsection.) In our 'low' scenario, we assume that the size of the NHS workforce grows according to the workforce plan's lower bound and that wages grow 0.2 percentage points (ppt) slower than forecast economy-wide wages (1.0% per year, rather than 1.2%). This is to reflect the possibility that other aspects of NHS employment – such as job security or a valuable public sector pension – mean that the NHS can continue to recruit staff even as NHS wages fall relative to the average economy wage. In this case, we estimate that the NHS wage bill would grow on average by around 4.0% per year in real terms between 2021–22 and 2036–37.

In our 'high' scenario, we assume that the size of the NHS workforce grows according to the upper bound of the workforce plan's forecast. We assume that, to attract such a large number of workers, NHS wages grow 0.2ppt faster than economy-wide wages each year, equivalent to an average 1.4% real growth rate. In this case, we estimate that the NHS wage bill will grow on average by 4.7% per year in real terms.

Table 8.1. Scenarios for estimated NHS funding growth if the workforce plan is achieved

Scenario	Assumptions for the NHS provider wage bill	Assumptions for other spending	% real growth in wage bill	% real growth in other spending	% real growth in NHS RDEL
High	Workforce grows at workforce plan's upper bound. Wages grow at forecast economy-wide wage growth rate + 0.2ppt.	Real spending grows at the same rate as the size of the workforce in the workforce plan's upper bound. On top of this, prices for non-staffing inputs grow by 1ppt more than economy-wide domestic inflation each year. Agency spend falls to zero.	4.7%	4.1%	4.4%
Central	Workforce grows at midpoint of plan's lower and upper bounds. Wages grow at forecast economy-wide wage growth rate.	Real spending grows at the same rate as the size of the workforce in the midpoint of the plan's lower and upper bounds. Agency spend falls to zero.	4.4%	2.9%	3.6%
Low	Workforce grows at workforce plan's lower bound. Wages grow at forecast economy-wide wage growth rate – 0.2ppt.	Real spending grows at 1% per year. Agency spend falls to zero.	4.0%	0.6%	2.4%

Note: The unit costs of each staff group in 2022–23 are estimated using NHS hospital and community sector average earnings estimates for 2022–23 where possible. For GPs, we use average GP earnings for 2020–21 and scale these by consultant earnings growth between 2020–21 and 2022–23. For staff groups not included in NHS earnings statistics, we estimate earnings using the midpoints of starting Agenda for Change bands in 2022–23 for fully trained members of each group. We assume that all staff groups receive the same nominal earnings growth. We include employer pension contributions and National Insurance contributions. We assume that agency spend goes to zero by 2036–37 and we subtract a counterfactual agency spend (assuming agency spend is proportional to the wage bill) from the level of total spending. We assume that agency spending declines linearly from its level in 2021–22 to zero in 2036–37.

Source: Authors' calculations using NHS England's long-term workforce plan (NHS England, 2023), NHS England's NHS staff earnings estimates (various) (https://digital.nhs.uk/data-and-information/publications/statistical/nhs-staff-earnings-estimates), NHS Digital's GP earnings and expenses estimates 2020–21 (https://digital.nhs.uk/data-and-information/publications/statistical/gp-earnings-and-expenses-estimates/2020-21), NHS health careers website (https://www.healthcareers.nhs.uk/), OBR long-term economic determinants June 2023 (https://obr.uk/efo/economic-and-fiscal-outlook-march-2023/), HM Treasury's GDP deflators at market prices June 2023 (https://www.gov.uk/government/statistics/gdp-deflators-at-market-prices-and-money-gdp-june-2023-quarterly-national-accounts) and DHSC's written evidence to the NHS Pay Review Body for the 2023 to 2024 pay round (Department of Health and Social Care, 2023).

Under a reasonable range of assumptions, we therefore estimate that the total NHS provider wage bill is likely to grow by between 4.0% and 4.7% per year if the workforce plan is implemented and achieved in full. This reflects both the large expansion in the number of staff and our assumption that real wages will need to increase to deliver such an expansion. For comparison, between 2013–14 and 2021–22, the NHS wage bill grew by 3.6% per year in real terms. Excluding the exceptional COVID-19 period, the average real-terms growth rate between 2013–14 and 2019–20 was 2.7%.

Other costs

We now consider what the workforce plan could mean for other, non-staffing, NHS costs. If the NHS has more staff and is treating more patients, it will likely have higher costs elsewhere. For example, it will likely need to spend more on medicines, food, energy, IT and maintenance. Moreover, some of the higher staff numbers in the plan – such as having more GPs and dentists – will translate into higher spending on primary care and dentistry that is not included in NHS provider staff costs.

However, it is less clear how these costs will change as a result of the NHS workforce plan. In many cases, this comes down to policy decisions about which inputs to prioritise. Given the large degree of uncertainty, we make a wide range of assumptions about how spending on these other inputs could evolve. For each of our three scenarios, the third column of Table 8.1 summarises the assumptions we make for these items, and the fifth column shows the implied average real-terms growth rate in non-staff spending. All of these scenarios allow for an elimination in NHS spending on agency staff by 2036–37 as a result of the workforce plan (which we include in the 'other spending' column).

In our central scenario, we assume that the quantities of other inputs grow in line with the overall workforce, but that the real prices of these inputs remain constant. This would result in 2.9% average real-terms growth in non-staffing spending. This is roughly in line with increases over the pre-COVID period (non-staffing costs grew by 2.4% per year between 2013–14 and 2019–20) and is, to a rough approximation, what we might expect to happen if the mix of healthcare inputs remains constant, and the prices of non-staffing costs increase no faster than economy-wide domestic inflation.

It may be that non-staffing costs need to grow substantially less quickly than staffing costs, or that growing staffing costs squeeze out other inputs. In our 'low' scenario, we assume that real spending on providers' non-staffing costs grows at 1.0% per year in real terms (0.6% per year after accounting for lower agency spending). This is a very conservative assumption, at the very lower bound of what seems plausible.

Alternatively, achieving the workforce plan's ambitious productivity gains might require greater spending on non-staff inputs. In our 'high' scenario, we assume that the quantities of other inputs grow at the same rate as staffing in the plan's upper bound, but also assume that real prices for those inputs grow by 1% per year (i.e. those prices grow by 1ppt more than economy-wide domestic inflation each year). This means that providers' non-staffing costs would grow by 4.1% per year on average in real terms. These scenarios provide a broad range and are intended to be indicative.

Total NHS funding

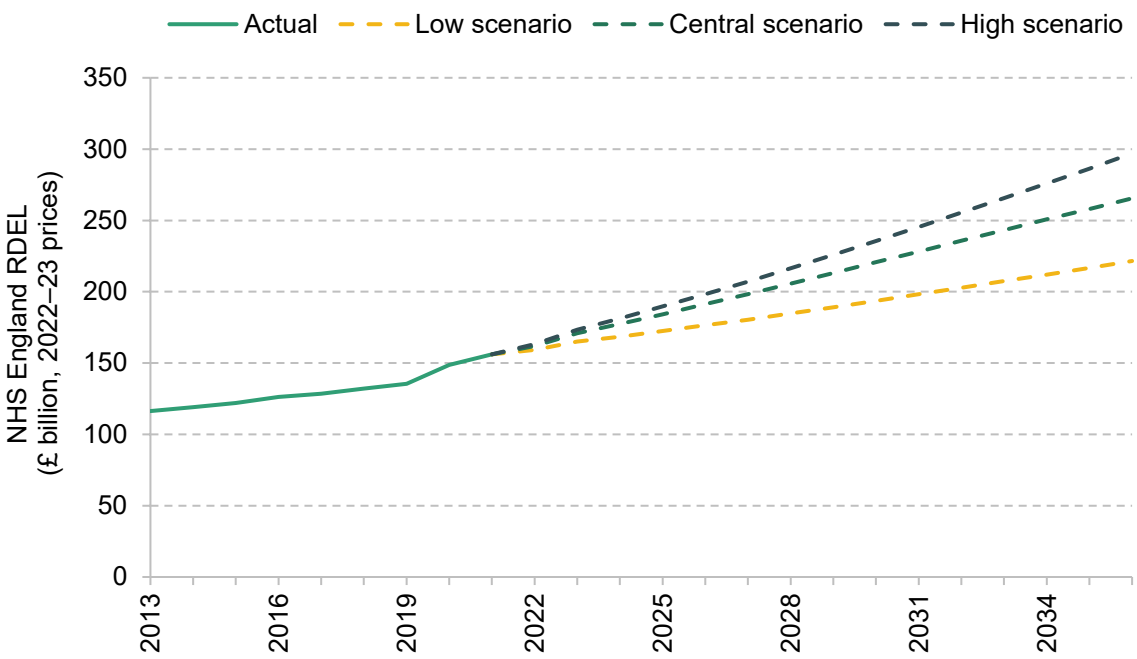
With our assumptions about the path of the NHS wage bill and the path of non-staffing costs, we can estimate the implications of the plan for total NHS funding. The final column of Table 8.1 summarises our estimated real growth rate in resource spending (RDEL) between 2021–22 and 2036–37. In our central scenario, we estimate total costs will grow by 3.6% in real terms per year. In our 'low' scenario, we estimate that total costs will grow by 2.4% per year. And in our 'high' scenario, we estimate that total costs grow will grow by 4.4% per year.

For context, between 2009–10 and 2022–23, UK-wide health spending grew at an average rate of 2.4% per year. Between 2019–20 and 2022–23 (the COVID period), funding grew by 4.7% per year in real terms. Over the full period since the creation of the NHS, funding has grown at an average real rate of 3.6% per year. We estimate that meeting the costs of the NHS workforce plan would require funding increases broadly within this range (though would require considerably larger increases than were seen over the 2010s, when real-terms funding growth averaged 1.7% per year).

Figure 8.5 shows what this could mean for the level of NHS England resource spending if funding does rise to match these higher costs. In 2021–22, NHS England resource spending was £156.1 billion in 2022–23 prices. By 2036–37, we estimate that this will reach £221.5 billion in our low scenario, £265.5 billion in our central scenario and £297.0 billion in our high scenario (all expressed in 2022–23 prices).

Perhaps the most meaningful way to express the additional resources implied for the NHS is as a percentage of national income. We estimate that in our central case, resource (day-to-day) funding for the NHS in England alone could need to increase by 2.0% of GDP by 2036–37, relative to 2021–22 (the starting point for the workforce plan). This is similar to the increase in UK health spending over the 15 years to 2008–09 (2.2% of GDP) and is equivalent to an extra £52 billion in today's terms. To give a sense of scale, raising that amount would require increasing the standard rate of VAT from 20% to around 27% by 2036–37 or increasing all income tax rates by around 6 percentage points. Other options to fund higher NHS spending would of course be available. In our 'low' scenario, the increase could be an extra 0.6% of GDP (£17 billion in today's terms); in our 'high' scenario, it could be 3.0% of GDP (£77 billion).

Figure 8.5. Estimated real NHS England resource spending if workforce plan is achieved



Note: Produced using the assumptions listed in Table 8.1. Also see note to Table 8.1.

Source: All sources in Table 8.1.

The workforce plan is an NHS England document, and our analysis has focused on England for this reason. Health is a devolved matter, but higher spending on the NHS in England would likely mean additional funding for the devolved governments via the Barnett formula. An extra £100 of health spending in England would (unless offset by cuts to other spending in England) lead to around £19 of Barnett consequentials for Scotland, Wales and Northern Ireland. Our estimates of the additional funding implied for the NHS would need to be scaled up accordingly.

8.5 Conclusion

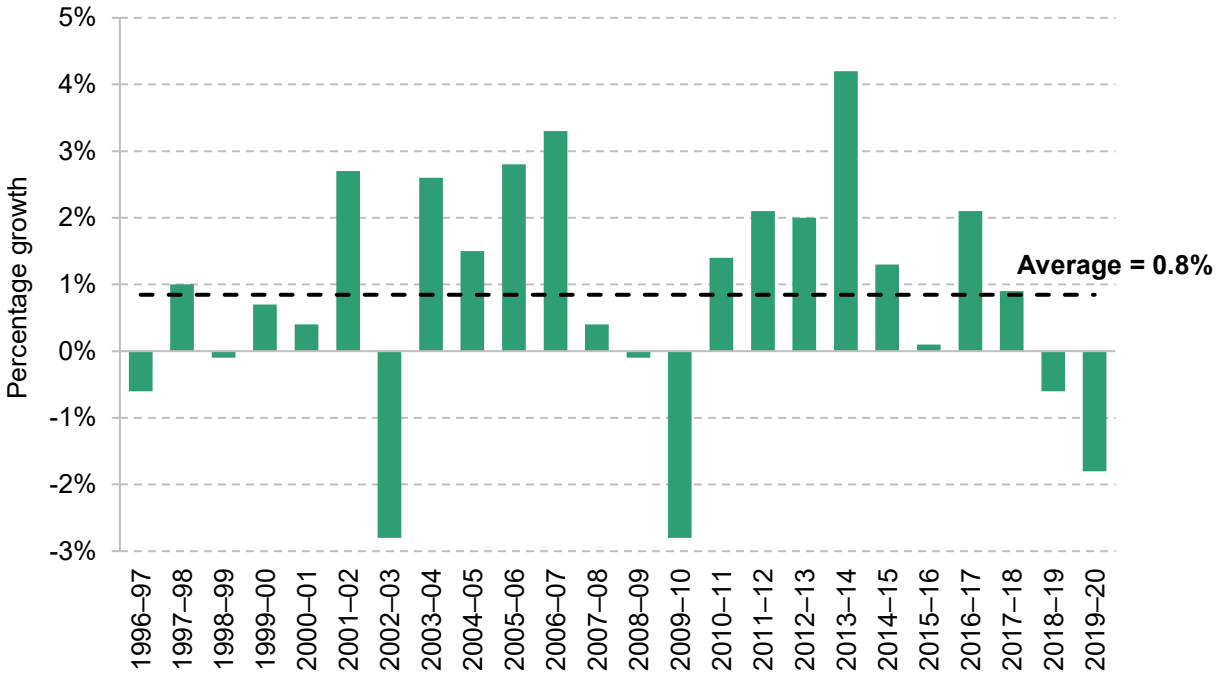
The publication of the NHS long-term workforce plan is an important and welcome milestone for the NHS. For the first time, we have official, public estimates of how many staff the NHS thinks it will need in the medium term, and a set of targets that aims to ensure that the workforce reaches these levels.

While it is an important step to have such a detailed plan, it does not necessarily follow that the plan's targets will be achieved – something we have seen recently with the NHS backlog recovery plan. Among many challenging objectives, the targets for productivity and retention are particularly ambitious. The plan assumes that labour productivity will increase by between 1.5% and 2% per year. That would be considerably more than estimates suggest the NHS has tended to manage historically (Figure 8.6). Failing to deliver on these targets could mean either that

workforce numbers do not grow as planned or that, even if they do, a larger workforce is still unable to provide the desired quantity and quality of healthcare.

On the assumption that the plan is successfully implemented and achieved in full, it promises to deliver a dramatic expansion of the NHS workforce. We estimate that by 2036–37, almost one in two public sector workers, and around one in eleven of all workers, will be working for the NHS in England. Such an expansion will inevitably require a substantial increase in the NHS wage bill, and could well also require increases in non-staff spending as the number of patients treated increases (though this is less certain).

Figure 8.6. Estimated percentage growth in quality-adjusted healthcare productivity in England



Source: Table 3a of Office for National Statistics, Public service productivity, healthcare, England: financial year ending 2021 (https://www.ons.gov.uk/economy/economicoutputandproductivity/publicservicesproductivity/articles/publicservicesproductivityestimateshealthcare/financialyearending2021).

In our central scenario, we estimate that NHS England resource funding may have to grow by 3.6% per year in real terms (or 70% in total by 2036–37) to meet the increase in costs implied by the plan. We estimate that this could mean spending an additional 2.0% of GDP on the NHS in England alone in 2036–37, compared with 2021–22, equivalent to an extra £52 billion in today's terms. These are substantial sums, but we note that funding growth of 3.6% per year would match the long-run average seen since the advent of the NHS. Nonetheless, against the current backdrop of sluggish growth and elevated debt interest spending, achieving this will require difficult fiscal decisions to be made. This acknowledgement should be front and centre of the next fiscal event this autumn, and the next Spending Review (due by the end of 2024).

In our view, the main risk associated with a workforce plan – particularly one that aims for such a large increase in staffing – is that other inputs will be neglected. Our 'low' scenario suggests that NHS funding might need only grow by 2.4% per year, well below the long-run average. But this is because we assume spending on non-staffing inputs only grows by a very low 0.6% per year in real terms. That itself could put at risk the NHS's ability to deliver labour productivity growth of 1.5–2% per year, an assumption which the plan is based on. While the plan acknowledges the importance of other inputs, such as capital and digital infrastructure, it is vital that the NHS and the wider government ensure these inputs receive similar planning and attention. Paying for the workforce plan by squeezing capital spending would be a serious mistake.

References

Black, S., 2023. The mythbuster: the birthday gift the NHS didn't need. https://www.hsj.co.uk/daily-insight/the-mythbuster-the-birthday-gift-the-nhs-didnt-need/7035130.article

Department of Health and Social Care, 2023. DHSC evidence for the NHSPRB: pay round 2023 to 2024. https://www.gov.uk/government/publications/dhsc-evidence-for-the-nhsprb-pay-round-2023-to-2024

Dixon, J., 2023. NHS Long Term Workforce Plan – Health Foundation response. https://www.health.org.uk/news-and-comment/news/health-foundation-response-to-the-nhs-workforce

Murray, R., 2023. The King's Fund responds to NHS England's workforce plan. https://www.kingsfund.org.uk/press/press-releases/kings-fund-responds-nhs-englands-workforce-plan

NHS England, 2023. NHS Long Term Workforce Plan. https://www.england.nhs.uk/wp-content/uploads/2023/06/nhs-long-term-workforce-plan-v1.2.pdf

Office for National Statistics, 2023. Public sector employment, UK: March 2023. https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/publicsectorpersonnel/datasets/publicsectoremploymentreferencetable

Palmer, B., 2023. Nuffield Trust response to announcement on NHS Long Term Workforce Plan. https://www.nuffieldtrust.org.uk/news-item/nuffield-trust-response-to-the-nhs-long-term-workforce-plan

Rawnsley, A., 2010. *The End of the Party*. Penguin Books Limited.

Warner, M. and Zaranko, B., 2022. NHS funding, resources and treatment volumes. IFS Report R236. https://ifs.org.uk/publications/nhs-funding-resources-and-treatment-volumes

9. Investment in training and skills

Imran Tahir (IFS)

Key findings

1. The UK has seen a significant decline in participation in adult education and training. The number of **publicly funded qualifications started by adults has declined by 70% since the early 2000s**, dropping from nearly **5.5 million qualifications to 1.5 million by 2020**. Although the total number of adults participating in employer-provided training has remained fairly stable over time, **the average number of days of workplace training received each year has fallen by 19% per employee in England since 2011**.

2. The decline in training participation has occurred alongside a fall in both public and private investment in training. **Average employer spending on training has decreased by 27% per trainee since 2011.** Since its peak in 2003–04, **public funding for adult skills has fallen by 31% in real terms**, mostly as a result of a reduction in provision of low-level courses. But the historical decline in funding also reflects long-term freezes in funding *rates*. **Funding provided for an adult learner taking GCSE English or maths has fallen by 20% since 2015–16 in real terms.**

3. There are **five main policy levers** that this (or a future) government might look to in the adult skills policy sphere: the direct public funding of qualifications and skills programmes, loans to learners, training subsidies, taxation of training and the regulation of training. In making changes to any lever, there is a **trade-off between the costs of the reform (both the fiscal cost and the cost associated with further policy churn) and the benefits**, which depend on whether the reform leads to additional training that is **genuinely new and productive**.

4. Ensuring that public funding of adult education is well spent is key. **Adult skills funding is set to increase by 11% on today's levels, reaching around £4.7 billion by 2024–25.** Given the low returns to many adult skills courses, instead of expanding

the range of courses that are publicly funded, the government might more helpfully **review whether increasing existing funding rates would offer a better return**.

5. The student loans system is set to be reformed with the introduction of the Lifelong Learning Entitlement (LLE), which will merge the two separate loan systems that currently exist for further and higher education. In 2022–23, **the amount lent to further education students (£124 million) was less than 1% of the amount lent to higher education students (£19.9 billion)**. The LLE has the potential to reshape the post-18 student loan landscape. However, **progress in implementing the LLE has been slow**. And **important questions still remain** about how the system will be designed, including which courses will be covered by the new loan entitlement. The government should provide clarity on the design of the LLE and ensure that it moves forward with its implementation within a reasonable time frame.

6. The government introduced the apprenticeship levy in 2017 as a means to deliver 3 million apprenticeship starts in England by 2020. **This target was not met, with around 2 million apprenticeship starts between 2015 and 2020.** While overall numbers of apprenticeships have fallen back, the **number of higher-level apprenticeships has almost tripled since 2016**, and **the average duration of apprenticeships has increased by 22%**. Since the apprenticeship levy was introduced in 2017, it has **raised £580 million more than has been allocated for spending on skills and training across the UK**.

7. The apprenticeship levy should be reformed to have a **uniform subsidy rate for all employers**. Currently, levy-paying employers (who tend to be bigger) benefit from a higher subsidy rate. While there is a case for subsidy rates being set according to the degree to which training is likely to be underprovided, this would be complicated and difficult to measure and implement in practice, so a uniform rate is desirable. The uniform subsidy rate should also be set at a **lower level than the current rates** which effectively subsidise the full cost of apprenticeship training.

8. The Labour party has announced plans to broaden the **apprenticeship levy into a 'growth and skills levy'**, which will allow employers to use subsidies for non-apprenticeship training. Past experience, with schemes such as Train to Gain in the late 2000s, suggests that there is a **risk of significant deadweight costs** (i.e. subsidising training that would have taken place anyway). In addition, an extended subsidy would add to costs, which could perhaps be covered by lowering the existing subsidy rates.

9. At present, all spending on employer-provided training is exempt from tax, but the cost of self-funded training only qualifies for tax relief under certain conditions. The government should consider aligning the two systems by providing tax relief for self-funded training on the same basis. This would remove a disincentive for groups such as the self-employed, who are historically less likely to participate in training. **Only 13% of the self-employed reported engaging in work-related training in the previous three months, compared with 28% of all employees.** However, any tax change would need to be accompanied by careful regulation of training courses to avoid the risk of fraud.

9.1 Introduction

In the UK, nearly 40% of adults now go on to higher education (Bolton, 2023a). Yet university is not the only place of learning beyond the school gates. There is a wide range of education and training undertaken by adults, from vocational courses at local colleges to ongoing on-the-job training and apprenticeships. This post-18 education and training receives less attention than higher education (HE), but is crucial to developing the skills needed by the UK's workforce and to boosting economic productivity.

Since the early 2000s, participation in adult education and training in the UK has declined. That is true of the fraction of workers who have participated in any training, the average number of hours spent in training, and the intensity of the training that does take place. The decline in training participation – which has not been observed to the same extent in most other European countries – has been associated with declines in both public and private investment in training. Over the past two decades, public spending on classroom-based adult education has shrunk by two-thirds, while surveys of employers show that their training expenditure is also falling.

On the face of it, this decline in UK training provision might seem a cause for concern. Indeed, there are solid economic reasons to suppose that, left to its own devices, the market will deliver lower levels of training than is socially optimal. Borrowing constraints can make it difficult for individuals and employers to invest in training. Uncertainty about the returns to training can make individuals unduly reluctant to invest in potentially useful training. And the full (societal) benefits of training are likely not factored in when individuals and firms make investment decisions. These market failures justify a range of government policies aimed at stimulating investment in education and training.

But a reduction in training provision is not necessarily undesirable from a policy perspective. It could also be that the level of training in the past was suboptimally *high* – for example, if the government was directly funding or subsidising training with low returns. Or broader shifts

could mean that it is now appropriate for there to be less training than in the past. In addition, government policy might simply have been subsidising training that would have taken place anyway (what economists call 'dead weight') which could justify cuts to public funding. An assessment of the UK skills policy landscape requires us to look beyond the headline trends and figures.

There is a range of potential policy levers available to a government wishing to address the market failures described above and to encourage employers and individuals to invest in post-18 education and training. In this chapter, we focus on the funding and financing of adult education and training in England. This encompasses four policy areas: the public funding of adult education (which covers funding for post-18 further education), the non-HE student loan system, apprenticeship policy, and the taxation of training. We do not cover other areas in detail, such as the regulation of training, although these are unquestionably important to the skills system.

Over the years, there have been multiple reforms to these different elements of the skills system, often in the wake of major reviews. The result is a policy landscape that is cluttered and too often in a state of flux. This constant 'chopping and changing' makes it challenging for individuals and employers alike to navigate the post-18 education system. This is one of the key trade-offs the government must make: although there are certainly aspects of the skills system that could be improved, another round of reforms would add to the policy instability and inconsistency which have plagued the sector.

There is a further, overarching trade-off to be made, common to each of the policy levers available to the government. Policies aimed at stimulating investment in education and training come at a cost. There is a fiscal cost (additional money spent on adult education ultimately means lower spending elsewhere, higher taxes or higher borrowing) as well as the costs of adding to the policy churn in the sector. That must be weighed against the possible benefits. These depend on the extent to which education and training induced by the policy are genuinely new *and* productive. Would the training have happened anyway, even without the reform? And will it yield economic returns? These are difficult questions to answer, but are crucial to any evaluation of skills policy.

In this chapter, we analyse some of the aspects of this trade-off in the public funding of adult education, the non-HE student loan system, apprenticeship policy and the taxation of training. We begin in Section 9.2 by setting out how adult education and training participation has changed over time and how experience in the UK compares with that in other countries. In Section 9.3, we draw lessons from the history of skills policy. In the following four sections, we then analyse each of the four different policy levers in England through the lens of the trade-off between costs and benefits. The chapter concludes in Section 9.8 by setting out the lessons that can be drawn from this analysis and some of the government's options for reform.

9.2 Training and skills participation over time

Adult education and training encompass a broad spectrum of education and skill-building undertaken by adults. Due to its wide-ranging nature, defining the scope of training can be complex, and different forms of education and training are captured in different data sources. In this section, we use a range of data sources to set out how participation levels and different types of education and training have changed over time. The central message is that the UK has experienced a decline in adult education and training rates over the last two decades.

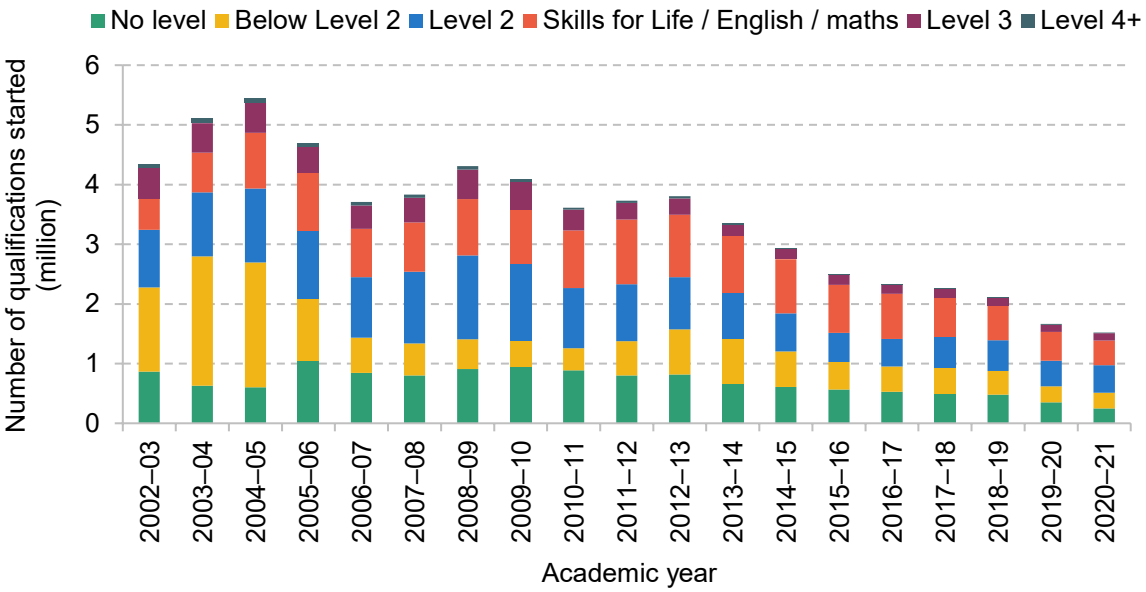
Participation in public and employer-provided training

We first examine participation in adult education and training based on its funding source, beginning with publicly funded training. Figure 9.1 shows the number of publicly funded qualifications taken at different levels in England, including both classroom-based qualifications and apprenticeships. In 2004–05, adults enrolled in nearly 5.5 million government-funded qualifications. By 2020–21, that number had dropped to 1.5 million, which marks a 70% decline relative to the peak. There has been a decline in qualifications taken at every level, but there was a particularly dramatic decline in the number of learners studying at the lowest levels (below Level 2) during the 2000s. As we discuss later, much of this decline was driven by deliberate policy decisions aimed at reducing participation in courses that often had low returns to both the individual and society. Therefore, this decline in participation may not be as concerning from an economic and educational perspective as it appears, given the emphasis on directing individuals towards more value-driven courses.

Employer-funded education and training plays a significant role in the development of workforce skills. Data from the Employer Skills Survey (ESS) reveal that overall participation in employer-provided training has largely been on the rise. Figure 9.2 illustrates the number of participants in such training over the past 12 months, spanning the five years of data available on this metric in the ESS. In 2019, over 15 million workers received employer-provided training, which represents a 24% rise since the start of the decade. As a proportion of the overall English workforce, the number of employees in training has remained relatively stable at just over 60% between 2013 and 2019.

The nature of employer-provided training can vary greatly, ranging from short courses (e.g. in GDPR compliance) to training towards nationally recognised qualifications. While over 15 million adults participated in employer-provided training in 2019, only 17% (2.5 million adults) trained towards a qualification. Over the 2010s, the number of employees training towards a nationally recognised qualification declined by 5%.

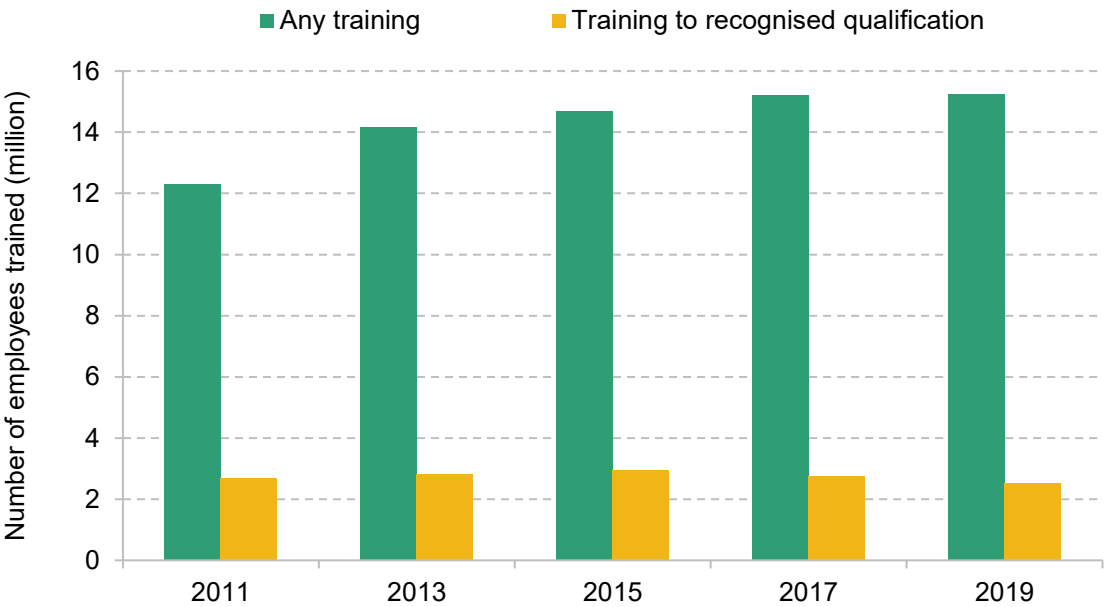
Figure 9.1. Participation in publicly funded qualifications by adults (19+) in England



Note: Level 2 corresponds to GCSE or equivalent. Skills for Life encompasses everyday literacy and numeracy courses. Level 3 corresponds to A-level or equivalent qualifications. Level 4+ corresponds to higher-level qualifications such as Higher National Certificates (HNCs) or Higher National Diplomas (HNDs).

Source: Learner numbers from 2002–03 to 2018–19 from figure 2.2 in Sibieta, Tahir and Waltmann (2021). Learner numbers for 2019–20 and 2020–21 calculated from Department for Education apprenticeship statistics and adult further education participation statistics.

Figure 9.2. Participation in employer-provided training over the last 12 months in England



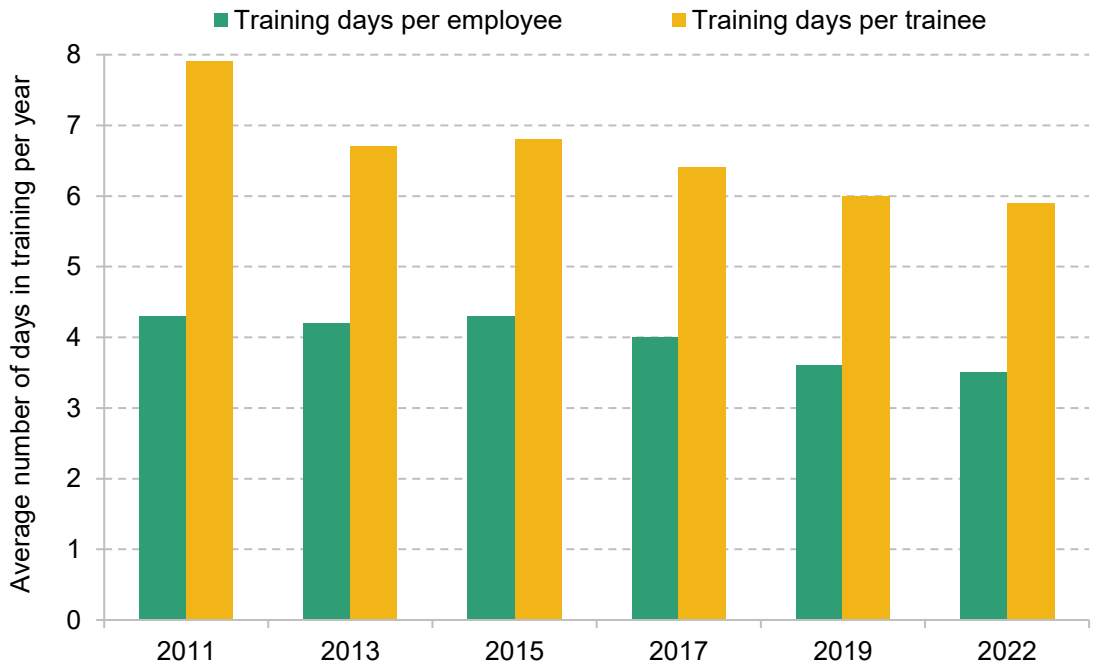
Source: Author's calculations using data from the Employer Skills Survey.

It is also worth noting that a significant proportion of employer-provided training is either health and safety or basic induction training. Of employers who provided training in 2019, 30% reported that at least half of the training they offered fell into these categories and 12% said this was the only training provided to employees (Winterbotham et al., 2020). Hence, a significant share of employer-provided training is aimed at meeting legal mandates rather than directly enhancing workforce skills beyond this.

There has also been a reduction in the duration of employer-provided training. In other words, those who are receiving training are receiving it less intensively than in the past. This is illustrated in Figure 9.3, which presents the average number of training days in a year for all employees and for trainees (i.e. employees who received at least some training during the year). The average number of training days has been gradually decreasing since 2011. Between 2011 and 2022, the average number of training days for all employees in England declined by 19%, from 4.3 days to 3.5 days. The average number of training days per trainee fell by a quarter, from 7.9 days per year to 5.9 days per year in 2022.

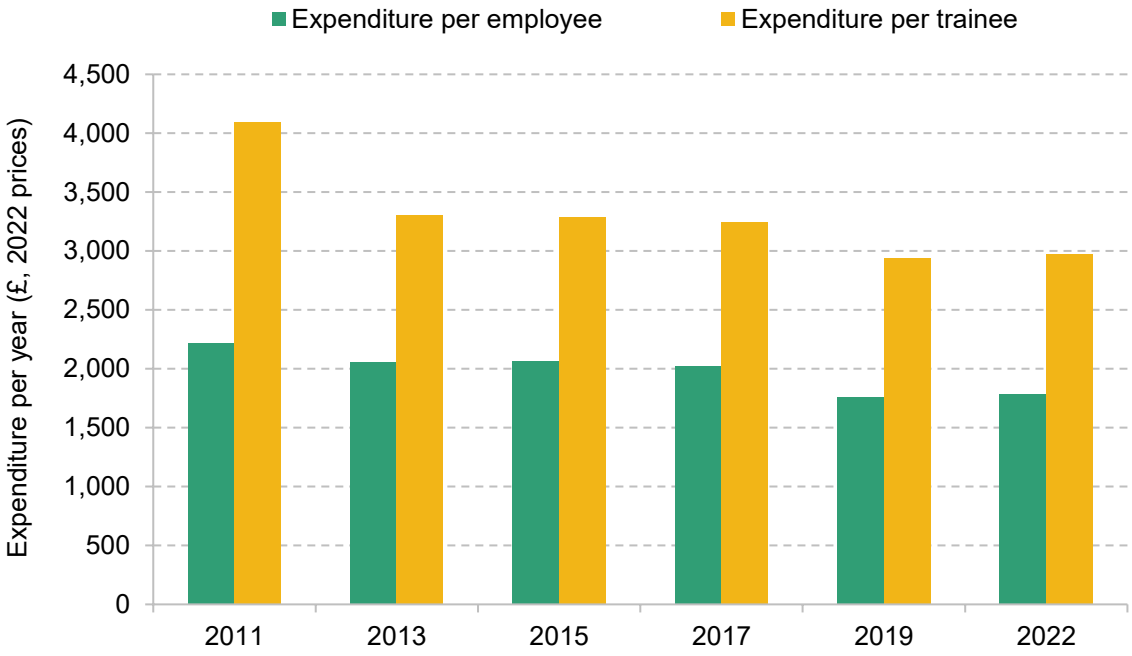
The decline in training intensity is reflected in the training expenditure of employers. Figure 9.4 shows average employer investment in training per employee and per trainee over the last 12 months. Since 2011, average training investment per employee has fallen by 19% (in real terms). The decline in investment per trainee has been more pronounced – there has been a 27% decrease, from just over £4,000 per year in 2011 to less than £3,000 per year by 2022 (both in 2022 prices).

Figure 9.3. Average number of training days per employee and per trainee in the last 12 months in England



Source: Employer Skills Survey 2022.

Figure 9.4. Average investment in training per employee and per trainee in the last 12 months in England



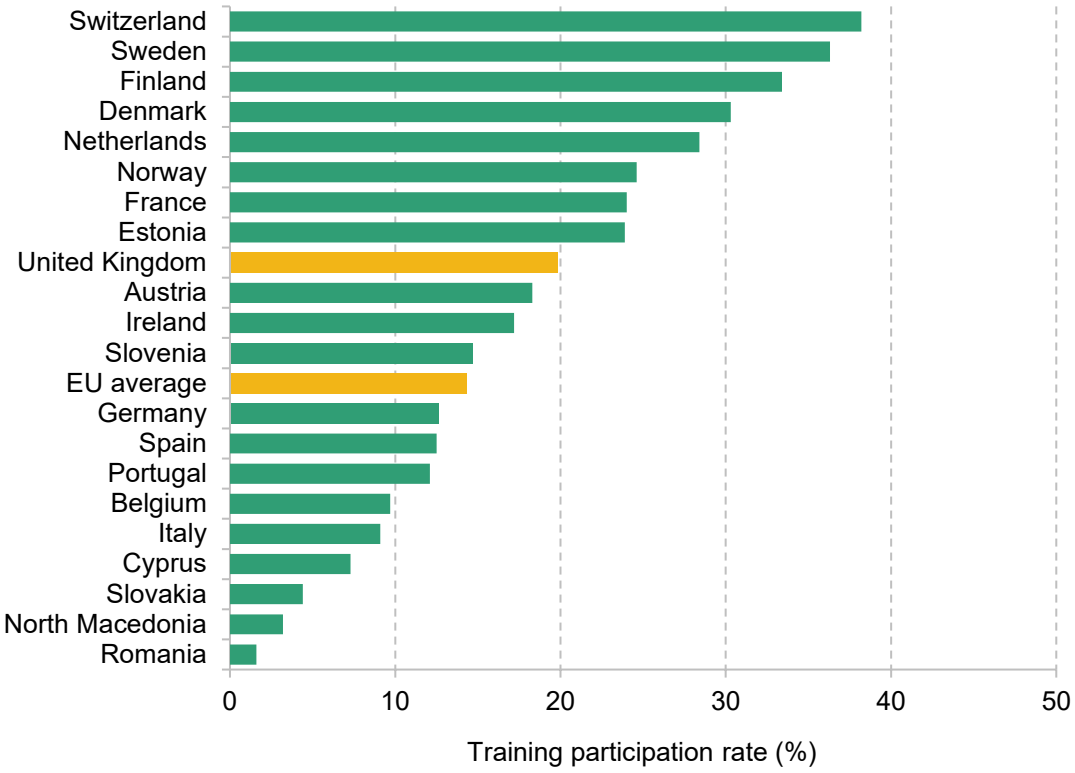
Source: Employer Skills Survey 2022.

Taken together, the evidence suggests that although overall participation in employer-provided training has remained fairly constant, there has been a decline in the *intensity* of training (as indicated by the decline in the share of workers studying towards a recognised qualification, the fall in the average number of days spent in training, and the reduction in average employer investment in training).

The UK in international context

We now turn our attention to how the UK compares with other countries. In general, international comparisons of training rates are difficult, because different countries have distinct education systems and varying definitions of what constitutes training. Any international comparisons must therefore be taken with a pinch of salt. The EU Labour Force Survey provides one measure of training participation across European countries. Figure 9.5 shows employee participation in any form of education and training in the last four weeks. On this measure, the UK fares quite well compared with many other European countries. In 2019, nearly 20% of employees surveyed had participated in education and training in the past four weeks, whereas the average across the European Union hovers just below 15%. The UK's training participation is, however, well below the rates observed in Switzerland and the Scandinavian countries, which are at the top of this league table.

Figure 9.5. Participation of employees in education and training in the last four weeks, 2019



Note: The figure shows participation by workers aged 25–64 in 'any education or any training' over the last four weeks. The EU average shows average training participation among the current 27 European Union member states, i.e. excluding the UK.

Source: EU Labour Force Survey.

Where the UK stands out is the extent to which training participation has declined since 2010. Between 2010 and 2019, the majority of European countries saw an increase in training participation. Across the Europe Union, average training participation increased from 11% to 14% between 2010 and 2019. In the same period, it fell from 25% to 20% in the UK. Hence, the gap between the UK and the EU in terms of training participation has narrowed. Only three countries – North Macedonia, Slovenia and Cyprus – saw a more pronounced decline than the UK over the 2010s.

Although overall training participation still remains relatively high in the UK, evidence from recent studies shows that the UK lags behind on other metrics of training. Li, Valero and Ventura (2020) find that 'the UK ranks 21st [out of 35 countries] in terms of the share of trainees that receive training that lasts at least 6 days'. Clayton and Evans (2021) show that 'UK employers invested half as much per employee' relative to the EU average. This suggests that while a high proportion of UK employers may be offering training, this training tends to be shorter and cheaper than in other European countries. It is worth noting that these conclusions

are based on data from 2015. Unfortunately, at the time of writing, the data used in these reports have not been updated so we cannot present a more up-to-date picture on these measures.[1]

Summary

Participation in training peaked in the early 2000s, since when there has been a decline in both the level and intensity of training. Publicly-funded courses have experienced a marked reduction. Although overall participation in employer-provided training has remained stable (at least over the 2010s), there has been a slight decline in training that leads to qualifications and a fall in time spent in training. Internationally, the training participation rate is currently higher in the UK than in many European countries, but it appears to be on a downward trajectory not seen in most other countries. The gap between the UK and the EU average in terms of training participation has therefore narrowed and, at the latest count, employer investment in training in the UK is lower than in many other European countries.

9.3 The skills policy landscape

There are broadly five areas of skills policy in England, each targeting a different group and addressing a specific type of market failure. Table 9.1 lists these policy areas and provides a brief description. Taken together, these policies form the basis of the government's strategy to support individuals and employers to invest in education and training. In this section, we trace out how these different areas of skills policy have developed over the last two decades, and also how the intended aims of skills policy have evolved.

A brief history of skills policy

Since the turn of the millennium, there have been significant changes to the skills policy landscape. We have seen the introduction (and subsequent termination) of various skill programmes, numerous government skills targets, the expansion of apprenticeships and the development of loan funding for learning outside of higher education. A large number of these changes stemmed from skills reviews, such as the Leitch Review, which have also been dotted across the period.

The focus of the government in the early 2000s was improving the basic skills of adults. As part of its Skills for Life strategy, the government set a target of improving 'the basic skills of 2.25 million adults' between 2001 and 2010 as measured by the number of adults completing

[1] Li et al.'s finding is based on the European Working Conditions Survey. While a more recent version of this survey exists, it does not capture data on the specified metric. Clayton and Evans's findings are based on the Continuing Vocational Training Survey, the most recent (2020) iteration of which does not include the UK.

Table 9.1. Five areas of skills policy

Skills policy	Target	Description
Direct funding of qualifications and skills programmes	Mainly adults with low existing qualification levels	The government allocates funding for adults (19+) to attain their first qualification at or below Level 3 (A level or equivalent) and access skills programmes. In general, direct public funding is paid to further education (FE) colleges and is designed to help adults with low prior attainment to access education and training.
Loans for further education	Adults pursuing further education courses at Levels 3 to 6 (i.e. from A level or equivalent up to degree-level courses)	There are two types of loans available to students in England: higher education student loans and advanced learner loans. The latter are loans to cover tuition fees for further education courses; they are provided on the same terms as HE student loans, but students cannot access maintenance loans. Both types of loans are designed to alleviate borrowing constraints.
Apprenticeship subsidies	Available to all employers wanting to hire apprentices	Since 2017, the government has charged a levy on large employers to fund big subsidies for apprenticeship training. This is designed to encourage firms to internalise the wider benefits of apprenticeships.
Tax deductibility of training costs	Mainly employers providing training	In the UK, training expenses are tax deductible for employers. This ensures that employers do not face a disincentive to invest in training.
Regulation of training and apprenticeships	Education providers	There are numerous rules and regulations governing apprenticeships and other forms of training. These rules aim to ensure a basic level of quality of training, thereby helping individuals and employers make more informed decisions about different forms of training.

qualifications (Department for Education and Skills, 2007). To implement this strategy, all adults without a Level 2 qualification (equivalent to a GCSE at A*–C) were eligible for free literacy, language and numeracy training. As shown in Figure 9.1, this led to a high level of adult participation in low-level skills courses in the early 2000s. However, there were questions as to whether this broad entitlement was well targeted and led to genuine improvements in the skills of the adult population (Wells, 2007).

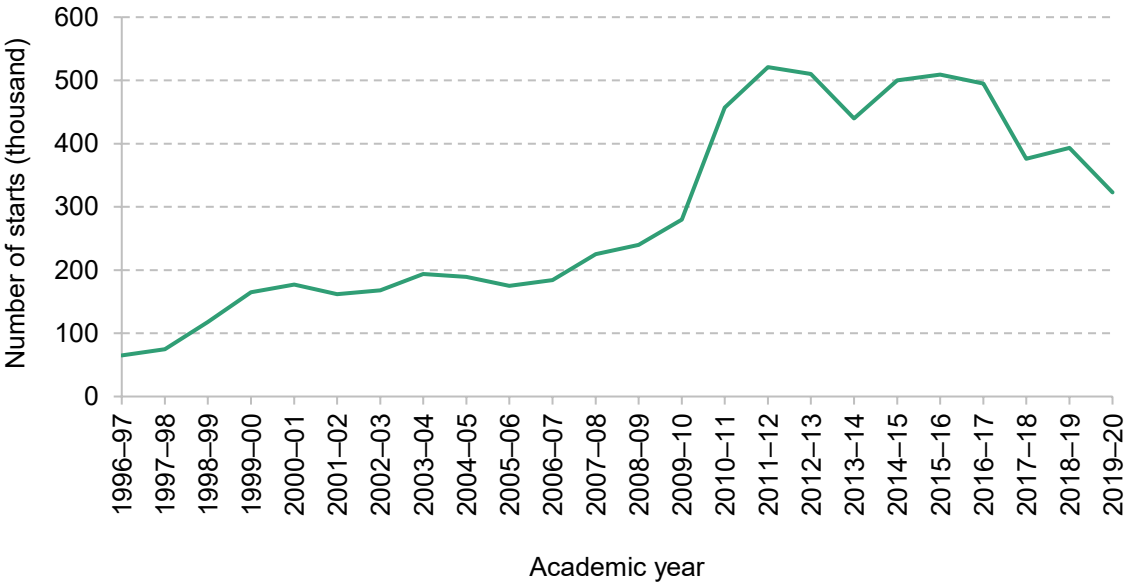
Following the Leitch Review in 2006, the government's skills strategy was still focused on improving the basic skills of adults but through supporting employer-based learning – Train to Gain was championed as the way to promote skills development. Launched in 2006, Train to Gain

was a national skills programme designed to support employers to provide workplace training, which included subsidies for employees taking their first full Level 2 qualifications. Yet ultimately the programme was short-lived. A 2009 assessment by the National Audit Office determined that Train to Gain was not delivering value for money. A significant factor in this conclusion was that it did not seem to be generating new training. As a result, just a few years after being heralded as a key pillar in delivering the UK's future skills needs, Train to Gain was dumped.

The rise of apprenticeships

During the 2000s, there was also a pivot towards apprenticeships. In 2004, the government abolished the age restriction that had previously limited apprenticeships to those under 25 (Mirza-Davies, 2015), which led to an increase in older apprentices (Foley, 2021). As Figure 9.6 illustrates, there was a steady rise in the total number of apprenticeships for most of the 2000s, but then a sharp acceleration towards the end of the decade.

Figure 9.6. Number of apprenticeship starts in England



Source: Foley, 2021.

The number of apprenticeship starts in England increased by 63% between 2009–10 and 2010–11, to 457,000. This was almost entirely driven by individuals enrolled in the disbanded Train to Gain programme being migrated onto apprenticeships (Belfield, Farquharson and Sibieta, 2018). There were questions around the quality of these apprenticeships (Wolf, 2011). Many employers simply rebranded existing training programmes as apprenticeships to benefit from subsidies available for this type of training. In some instances, employees were not even aware they had been enrolled in apprenticeships. This underlines the fact that while employer training investment may respond to policy, without appropriate regulation this does not necessarily translate into the type of training that the government intends.

In 2010, the incoming Conservative–Liberal-Democrat coalition government announced a target for 2 million apprentice starts during its parliamentary term. This target was met, with 2.4 million starts between 2010 and 2015. Beyond the government's headline targets, the early 2010s also saw the start of important regulatory changes aimed at improving the quality of apprenticeships (Mirza-Davies, 2015). The government set out new conditions for training to be classified as an apprenticeship, including a minimum duration of 12 months. The 2012 Richard Review of Apprenticeships set in motion a move from the existing system of apprenticeship frameworks to apprenticeship standards. Frameworks had a greater focus on qualifications, whilst standards, which were introduced in 2017, are more focused on the skills, knowledge and behaviours required in specific occupations.[2]

The 2015 Conservative government maintained a strong emphasis on boosting apprenticeship numbers. Once more there was a target – 3 million new apprentice starts during the course of the parliament. This time the target was not met, with just over 2 million starts by 2020. During this period, there was also discussion about the need to reform the apprenticeship funding system to finance higher-quality apprenticeships. An influential report by Alison Wolf (2015) proposed a National Apprenticeship Fund where each employer would contribute to funding apprenticeships through a payroll levy. This would not only secure dedicated funding for apprenticeships but also ensure broad-based employer engagement in apprenticeship provision. An apprenticeship levy was subsequently introduced in 2017 and has since been the subject of much debate.

In summary, within a decade, apprenticeships in England fundamentally changed. The number of apprentices grew rapidly, although not enough to meet both of the targets that successive governments set themselves. There was also recognition that the quality of apprenticeship training needed to improve. This led to the funding system being overhauled and to the introduction of new regulations which meant that the apprenticeships being taken at the end of the 2010s looked very different from those taken at the start of the decade. We will analyse the implications of these changes in apprenticeship policy in more detail later in this chapter.

Beyond apprenticeships

While there have been a lot of changes to the apprenticeship system, the rest of the skills system has not escaped unscathed. We do not provide a detailed account of all the reforms that have occurred in the last 20 years here, but we highlight key changes to funding entitlements and the development of loans for adults pursuing further education courses.

Over the years, there have been numerous adult skills programmes targeted at adults with low existing education levels, but many of these skills programmes have been short-lived, largely

[2] https://lifetimetraining.co.uk/apprenticeship-schemes-explained/knowledge-hub/what-is-an-apprenticeship-standard/.

due to limited evidence of their value for money. Currently, the majority of funding for adult skills is used to provide access to a range of qualifications free of charge to eligible adults. These are summarised in Table 9.2. Generally, funding is provided for an adult's first full qualification, defined as a substantial qualification typically associated with a clear occupational role. The first four entitlements in the table are statutory entitlements set out in the Apprenticeship, Skills, Children and Learning Act 2009 and are funded through the Adult Education Budget.[3] The fifth entitlement is a new entitlement introduced in 2021 and is funded through the National Skills Fund.[4]

The scope of funding entitlements has generally narrowed over time. Prior to 2012, all adults, regardless of their age, were entitled to full funding for their first full Level 2 or Level 3 qualification. However, from the 2012–13 academic year, the funding entitlement for both Level 2 and Level 3 qualifications was tightened so that people aged 24 and over had to contribute towards the cost of these courses. This led to a decline in enrolments on Level 2 and Level 3 courses (Augar, 2019). As part of the Free Courses for Jobs programme, the government restored the full funding entitlement for Level 3 qualifications in certain subject areas in 2021. However, funding entitlements remain more limited than in the past.

Table 9.2. List of fully funded qualifications currently available to eligible adults

Entitlement	Example qualification	Eligibility
A digital skills qualification, up to and including Level 1	Award in Essential Digital Skills	Aged 19 and over with digital skills at below Level 1
English and maths, up to and including Level 2	Functional Skills in English and Maths	Aged 19 and over without a GCSE grade 4 (C) or higher
A first full qualification at Level 2	NVQ Diploma in Mechanical Manufacturing Engineering	Aged 19–23 without an existing Level 2 qualification
A first full qualification at Level 3	Access to Higher Education Diploma in Business Studies	Aged 19–23 without an existing Level 3 qualification
A first full qualification at Level 3 for individuals aged 19 and over	Level 3 Diploma in Bricklaying	Aged 19 and over without an existing Level 3 qualification; or currently unemployed / on low income

Note: A 'full qualification' refers to a substantial qualification typically associated with a clear occupational role.

[3] https://www.gov.uk/government/publications/adult-education-budget-aeb-funding-rules-2022-to-2023/adult-education-budget-aeb-funding-rules-2022-to-2023#entitlement.

[4] https://www.gov.uk/guidance/free-courses-for-jobs.

The changes to post-18 education policy have not been limited to lower-level courses. Arguably the most notable post-18 education policy reform in the 2010s was the increase of the higher education tuition fee cap to £9,000. The 2010s also saw the introduction of advanced learner loans (ALLs) in 2013 to support students on further education (FE) courses. Initially, these loans were made available to adults aged 24 and over studying courses at Level 3 or Level 4, but they have subsequently been expanded to all adults (19+) studying FE courses from Level 3 to Level 6. ALLs cover tuition fees for courses – which are mainly taken at FE colleges – on the same terms as HE student loans (i.e. the loans used to fund most undergraduate degrees). But unlike those studying in higher education, further education students cannot access loans for maintenance support.

ALLs represent a tiny fraction of total student borrowing in England. Around 47,000 learners took out ALLs in the 2022–23 academic year with an average loan value of roughly £2,440 per student, accumulating combined borrowing of £124 million in financial year 2022–23.[5] In comparison, nearly £20 billion was lent to around 1.5 million learners in the same period through HE student loans (Bolton, 2023b). Hence, less than 1% of the amount lent to HE students is borrowed through ALLs. From 2025, the post-18 student loan system is set to be reformed. The introduction of the new Lifelong Learning Entitlement will change the student finance that can be accessed by adults taking FE courses – an issue we return to later in this chapter.

Summary

The last two decades have seen a great deal of change in the skills policy landscape, which in part reflects the changing aims of skills policy. There has been a shift from public funding of basic skills courses to employer-based learning, first through Train to Gain and then through apprenticeships. A number of regulatory reforms were introduced in the 2010s to try to ensure that this training meets standards that are more closely aligned with employer needs. There have been new restrictions to accessing publicly funded qualifications, with a shift towards loan-based support. And the post-18 student loan system is due to be further reformed with the introduction of the Lifelong Learning Entitlement.

As a result of this near-constant change, the skills system is often challenging to navigate for learners and employers alike. This means that individuals seeking to further their education or skills may face confusion about the best pathways available, potentially leading to suboptimal choices. For employers, keeping up with the evolving landscape can divert resources and attention from their core training objectives. Additionally, these frequent shifts can undermine trust in the system, making both parties hesitant to fully invest in new opportunities or strategies,

[5] https://www.gov.uk/government/statistics/advanced-learner-loans-paid-in-england-ay-202223-aug-to-jul/advanced-learner-loans-paid-in-england-academic-year-202223-august-to-july-inclusive.

for fear that the ground will shift again soon. In essence, while the intent behind the changes may be to better serve learners and employers, the rapid pace of alteration can sometimes have the counterproductive effect of creating instability and uncertainty.

In the remainder of this chapter, we analyse four areas of skills policy in turn: the public funding of adult education, loans for further education, the apprenticeship levy, and the taxation of training.

9.4 Public funding of adult education

A long-standing component of the government's skills strategy has been direct public funding of adult education and training. This funding falls into two main categories: *classroom-based* learning and *work-based* learning. The former is primarily used to fund the skills programmes and funding entitlements outlined in the previous section. In addition, the government provides public funding through advanced learner loans to support adults to access higher-level classroom-based courses. Funding for work-based learning is currently used to subsidise apprenticeship training, although in the past it also supported other employer-provided training programmes, such as Train to Gain.

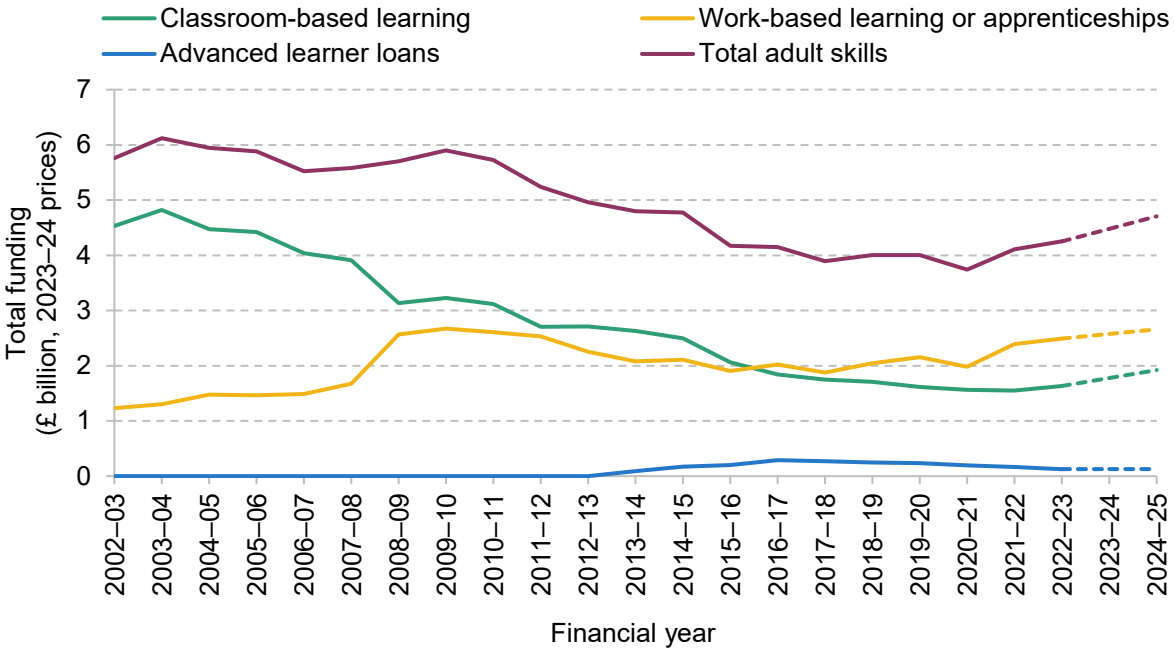
The decline in public funding for adult skills

Figure 9.7 shows the level of public funding for adult education and training in England from 2002–03 onwards. We show the overall level of public funding and break this down into three categories: (i) funding for classroom-based learning, which is channelled through a number of different skills funds;[6] (ii) funding for work-based learning, which currently consists of the Apprenticeship Budget; and (iii) the amount lent through advanced learner loans.

Total public funding of adult skills has decreased since the 2000s, with current spending at around £4.3 billion – a 31% drop from its £6.1 billion peak in 2003–04 (adjusted for inflation). The trend is most pronounced in classroom-based learning, which, from its peak of £4.8 billion, now receives funding of just £1.6 billion – a decrease of two-thirds over two decades. During the 2000s, part of the decline in classroom-based funding was diverted to work-based learning, so overall spending remained stable. The introduction of Train to Gain pushed expenditure on work-based learning to a peak of £2.7 billion in 2009–10. Since the early 2010s, funding for work-based learning has consistently been around £2 billion in today's prices, while classroom-based funding has continued to fall. Advanced learner loans were introduced in 2013–14, but they have consistently represented a small share of skills spending.

[6] The three primary skills funds are the Adult Education Budget, the National Skills Fund and the UK Shared Prosperity Fund.

Figure 9.7. Public funding for adult education and apprenticeships (actual and projected)



Note: The figures for classroom-based learning and work-based learning in 2024–25 are projected spending levels based on spending plans announced in the 2021 Spending Review. For 2023–24, we take the average of the 2022–23 and 2024–25 levels. We assume that the amounts lent through advanced learner loans in 2023–24 and 2024–25 are equal to the 2022–23 level.

Source: See source for figure 6.4 in Drayton et al. (2022). HM Treasury GDP deflators, June 2023.

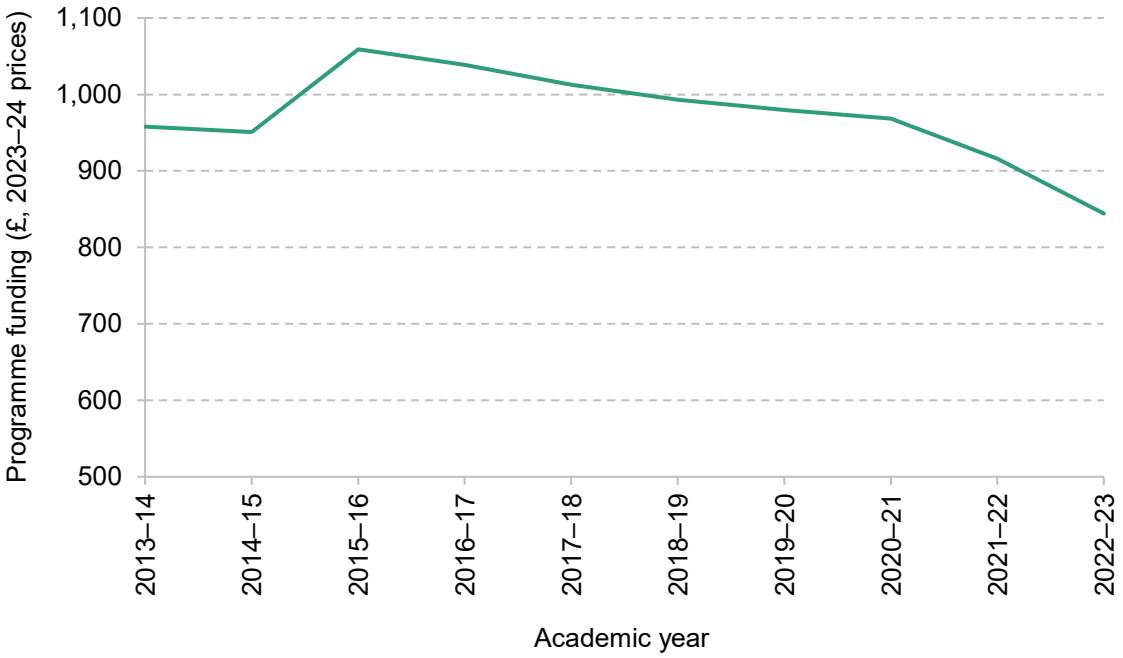
The government allocated additional future funding to adult education and apprenticeships at the 2021 Spending Review. Based on this additional funding, total public funding for adult skills is set to rise to around £4.7 billion in 2024–25. This is an 11% rise on current funding levels and will take real-terms funding back to levels seen in 2014–15, but still 23% below the peak seen in the early 2000s.

There are two key drivers behind the long-term decline in public funding. The first is a decline in the number of adults taking publicly funded adult education courses. This means that colleges and other education providers receive less funding, as funding is allocated on the basis of the number of courses taken. The decline in participation in classroom-based learning in particular has resulted from the withdrawal of public funding in the 2000s for low-level qualifications, which often had low returns (Belfield, Farquharson and Sibieta, 2018), a large and deliberate shift from classroom-based to apprenticeship training, and the introduction of tighter eligibility criteria for funding entitlements in the 2010s which we documented in the previous section.

The second driver of the decline in public funding is large real-terms cuts to the funding rates for classroom-based courses, which determine how much education providers receive per course taught. For many courses, the funding rate has not changed in cash terms since 2013 (Sibieta, Tahir and Waltmann, 2021). Figure 9.8 illustrates how programme funding for a GCSE in

English or maths has changed in real terms over the past decade. The government increased the funding rate for such a course in 2015–16, but since then providers have received a fixed fee of £811 for teaching this course. This means that, in real terms, education providers are receiving 20% less than they did in 2015–16 for teaching an adult learner a GCSE in English or maths.

Figure 9.8. Programme funding for a GCSE in English or maths



Source: Programme funding rates obtained from Education and Skills Funding Agency's Adult Education Budget (AEB): funding rates and formula. Inflation rate based on ONS's CPIH index.

The cash-terms freeze in funding rates is unlikely to represent good policy. Funding rates have been eroded in an unpredictable and arbitrary way, and over time become detached from the resource needs of education providers. Ultimately, this is important because it determines the quality of education received by learners. While there is no direct evidence on the impact of funding cuts on adult learners, there is extensive evidence that school spending levels matter for students' test scores, completion rates, and continuation into further education (Farquharson, McNally and Tahir, 2022). It is critical that the government reviews whether the existing funding rates accurately reflect the costs of providing adult education courses.

The returns to adult education and training

A key question is whether the government currently sets the right level of public funding for adult skills acquisition. Whether public funding should be used to change participation in adult skills courses depends on the returns to these qualifications. In a recent meta-analysis of studies on the value of FE qualifications in England, Buttar, Alonso and Martin (2023) conclude that FE qualifications tend to (on average) increase earnings. But the earnings boost varies by the type of

qualification taken: lower-level classroom-based qualifications typically offer lower returns than higher-level courses and apprenticeships.

Table 9.3 presents estimates of the change in future earnings and employment outcomes (three to five years later) associated with completing different qualifications, along with the number of learners taking each type of qualification in 2020–21 (see the note to the table for a description of each qualification level). It is important to note that these estimates represent findings from a single study, which may not provide robust causal estimates of the returns from completing a qualification, and there are reasons to believe they may be overestimates.[7] Moreover, within each qualification, there is a great deal of variation in returns by the subject studied (Buttar, Alonso and Martin, 2023). Nonetheless, the estimates are a useful empirical illustration of the broader conclusions drawn by this literature.

Table 9.3. Wage returns three to five years after completing different levels of adult education, and learner numbers, at Level 3 and below

Qualification	Increased earnings in employment	Increased chance of being in employment	Number of 19+ learners in 2020–21
Below Level 2	2%	1ppt	247,830
Level 2	1%	1ppt	431,860
Full Level 2	9%	3ppt	24,270
Apprenticeship Level 2	12%	4ppt	124,080
Level 3	3%	1ppt	125,450
Full Level 3	16%	4ppt	52,870
Apprenticeship Level 3	13%	3ppt	269,660

Note: Below Level 2 refers to entry-level qualifications which provide basic knowledge and skills. Level 2 is a GCSE or equivalent qualification. Full Level 2 refers to a substantial course of learning at Level 2, the equivalent of five GCSEs. Apprenticeship Level 2 is the lowest level of apprenticeship. Level 3 is an A-level or equivalent qualification. Full Level 3 refers to a substantial course of learning at Level 3, such as two A-level passes. Apprenticeship Level 3 is also referred to as an advanced apprenticeship.

Source: Update of figure 4.5 from Augar (2019). Learner numbers from Department for Education statistics.

[7] The study estimates the effect of qualifications on labour market outcomes by comparing the outcomes of individuals who complete qualifications and of those who enrol but do not complete. While this comparison captures the effects of completing the qualification, there are likely to be other underlying differences between these two groups which may also be important for labour market outcomes. For example, individuals who complete a qualification may be more motivated, which we would expect to translate into higher future earnings irrespective of their education. Therefore, the estimates presented may overestimate the returns to qualifications.

Table 9.3 suggests that there is substantial variation in the returns to different qualifications. The lowest-level qualifications are associated with modest returns: those at below Level 2 result in an average earnings boost of 2%, whereas Level 2 qualifications lead to a 1% increase. In contrast, apprenticeships and 'full' level qualifications – which represent a significant course of learning – are associated with higher returns. A Level 3 apprenticeship is associated with a 13% increase in average earnings, and completing a full Level 3 (the equivalent of two A-level passes) is associated with a 16% increase in earnings.

The majority of adult learners were not enrolled in courses with the highest earnings returns in 2020–21, but this is less the case now than in the past: there has been a shift away from lower-level courses over time. In the early 2000s, over 3 million adults were taking qualifications at Level 2 or below each year, but this number has declined to around 700,000 by the 2020–21 academic year. As a proportion of all publicly funded qualifications, the number of qualifications at Level 2 or below has also decreased from around 65% to just under half. In addition, as we discuss later, there has been a significant increase in higher-level apprenticeships in recent years. Given the prioritisation of higher-value courses and training, the overall fall in participation may be less concerning in terms of long-term economic and educational outcomes than initially perceived.

To be clear, low returns do not mean we should remove public funding for lower-level qualifications. The returns presented only reflect the individual monetary returns to these qualifications, and there is evidence to suggest that improving basic skill levels has non-monetary benefits on outcomes such as mental and physical health (Farquharson, McNally and Tahir, 2022). Furthermore, these lower-level courses often act as an important stepping stone to higher-level courses. Yet the results suggest caution when considering further expansions to funding entitlements for lower-level courses or simply reverting back to historical funding levels.

When considering future changes to public funding, the variation in returns to FE qualifications means that any funding needs to be well targeted: it matters how the money is spent, as well as how much is spent. Given the low returns to many classroom-based qualifications, the government should not seek to simply reverse the historical decline in classroom-based learning. Instead, any additional funding might be better targeted at increasing the funding rates paid for courses already in scope, in order to ensure that funding levels accurately reflect resource needs.

9.5 Loans for further education

Financial constraints affect learners at all levels of study, but learners taking more advanced qualifications are typically directed towards loan funding. As we set out in Table 9.1, there are currently two loan systems available to post-18 learners in England: HE student loans and

advanced learner loans. ALLs cover tuition fees for FE courses at Levels 3 to 6 (i.e. from A level and equivalent up to degree-level courses) on the same terms as HE student loans; unlike for university students, there are currently no maintenance loans for further education learners.

ALLs represent a tiny fraction of public outlay on student loans: in 2022–23, the amount lent through ALLs (£124 million) was less than 1% of the amount lent through HE loans (£19.9 billion).[8] Despite being a small part of the government's overall outlay on student loans, the financial support available to non-degree learners has been the subject of scrutiny. In September 2020, the then Prime Minister Boris Johnson delivered a speech outlining a Lifetime Skills Guarantee,[9] which would support adults to 'train and retrain – at any stage in their lives'. Central to delivering this aim was the introduction of a 'flexible lifelong loan entitlement to four years of post-18 education', giving students at 'FE colleges access to funding on the same terms as [those attending] universities'.

Box 9.1. The Lifelong Learning Entitlement (LLE)[a]

From 2025, the Lifelong Learning Entitlement (formerly the Lifelong Loan Entitlement) is scheduled to replace the two existing systems of publicly funded student loans – higher education student finance and advanced learner loans. The LLE will provide individuals with financial support for four years of post-18 education up to the age of 60, which is the equivalent of £37,000 in current fees. This loan support can be used to finance short courses, modules or full courses at Levels 4 to 6.

The LLE will change the existing system of post-18 student finance in three key ways:

1. Unify funding for FE and HE courses. This will enable people studying FE courses to access maintenance loans, which are currently only available to people studying HE courses.
2. Introduce modular funding, which will enable learners to access student finance to study modules or short courses. Under the existing student loans system, learners access funding for an entire course or a year of study, but the LLE will enable them to access funding for shorter periods of learning.
3. Remove existing restrictions on the study of equivalent and lower qualifications (ELQs), which prevent most students from receiving student finance for a qualification at the same or lower level to one they hold. This could, for example, allow a student to study a Level 6 qualification (e.g. a first degree in history), but then receive loan funding to return to college or university to study a Level 4 qualification (e.g. a Diploma in Electrical Engineering).

[a] See Lewis and Bolton (2023) for more details on the LLE.

[8] https://www.gov.uk/government/statistics/student-loans-in-england-2022-to-2023.
[9] https://www.gov.uk/government/speeches/pms-skills-speech-29-september-2020.

The reformed loan system – known as the Lifelong Learning Entitlement (LLE) – is set to be introduced from 2025 and is best thought of as a package of three reforms to the existing post-18 loan system. First, the LLE will unify the two existing post-18 loans systems, with learners studying FE courses being offered maintenance loans like their counterparts studying at university. Second, the LLE will introduce 'modular funding', which will allow learners to access loans for specific modules and short courses rather than entire courses. Third, the LLE will remove existing restrictions on accessing loan funding known as 'equivalent and lower qualification' rules. Box 9.1 provides further details on the new Lifelong Learning Entitlement.

Taken together, these reforms will enhance the support available to non-degree learners and should make the existing student loans system more flexible. Yet it is difficult to say just how transformative the LLE will be for adult education. The impact will depend on the extent to which these reforms will stimulate additional demand for education and training, as well as the extent to which this new demand will substitute or complement existing education and training. For instance, the LLE may lead to people substituting long-term courses (e.g. three-year undergraduate degrees) with a series of short courses or modules. The impact of the LLE will also depend on the response of education providers. In order for modular learning to become common, colleges and universities will need to start offering a broader range of short courses which students can then fund through the new LLE.

The government has so far published very little detail on the likely costs and benefits of the LLE. The one exception is an impact assessment by the Department for Education (2023a), which estimates a cost of £6.4 million associated with the 'regulatory burdens faced by employers and providers in the form of familiarisation costs'. This seems like an incredibly low figure for the costs of such large-scale reforms to the post-18 student loans system. At the time of writing, the Department for Education is preparing a fuller impact assessment which is set to be published later this year. However, it is concerning that potentially such wide-scale reforms to the post-18 funding system are being implemented with such limited evidence on the scale of their likely impact.

We do not assess the impact of the LLE further here, but we note that despite the typical turbulence of the skills system, the implementation of the LLE has been glacial. Since announcing its intention for a 'flexible lifelong loan entitlement' in 2020, the government has launched a consultation[10] seeking views on its design and scope, and run trials of short courses.[11] While involving stakeholders in the design of the LLE is commendable and it is

[10] https://www.gov.uk/government/consultations/lifelong-loan-entitlement.

[11] https://www.officeforstudents.org.uk/advice-and-guidance/skills-and-employment/higher-education-short-course-trial/.

important to test the policy, the process has been very drawn out. More than three years on from the initial announcement, reforms to the post-18 loans system are yet to materialise, and there have been suggestions from within the Department for Education that implementation may even be delayed beyond 2025.[12] The prospect of political change further clouds the future of the LLE, creating additional uncertainties for learners and education providers.

In addition, and perhaps more worryingly, there are important details about the LLE that are still unclear. Two of the main areas of uncertainty are which courses will be eligible for the LLE and how credit transfer will work. The government has announced that the LLE will be available for all courses currently funded through HE student finance, but qualifications currently funded through ALLs will only be eligible if there is 'clear learner demand and employer endorsement' (Department for Education, 2023b). This a decision that is still being consulted on, but it is critical to the impact of the LLE. On the issue of credit transfer, the LLE could move us into a world where learners study shorter courses potentially at multiple institutions and throughout their lives. To make such a system work in practice, there needs to be a way of recording prior learning and transferring credits from one institution to another. This will require the development of a new credit transfer system, but the government has not yet confirmed how this will work.

In summary, the LLE was announced in 2020 to make the existing post-18 student loans system more flexible and improve loan funding for students accessing further education courses. However, progress on implementing the LLE has been slow and key details about the new system are yet to be confirmed. This is creating uncertainty for the education sector, potentially causing institutions to hesitate in developing or adapting programmes in alignment with the LLE. Such delays can also impact students' planning and decision-making processes, potentially hindering their educational pathways. Moreover, prolonged ambiguity can undermine the confidence of stakeholders in the proposed reforms. Once the government commits to a reform such as the LLE, it is crucial that it moves forward with its implementation within a reasonable time frame to ensure clarity and timely progress for both learners and providers.

9.6 The apprenticeship levy

As we highlighted in Section 9.3, the last two decades have seen significant changes to apprenticeship policy. These changes have ranged from regulations defining the minimum standards of an apprenticeship, a move towards greater employer involvement in the design of apprenticeships and, in 2017, the introduction of the apprenticeship levy, which overhauled how

[12] https://feweek.co.uk/lifelong-loan-entitlement-faces-significant-challenges-to-meet-2025-launch-warns-dfe-perm-sec/.

apprenticeship training is funded. In this section, we examine the apprenticeship levy in detail. We explore how it has changed employers' incentives to offer apprenticeships, and assess changes in apprenticeship participation since its introduction. Throughout, we analyse different aspects of the design of the apprenticeship levy and options for reform. Box 9.2 summarises key details of the levy.

Box 9.2. Key details of the apprenticeship levy

- **Who pays the apprenticeship levy?** The levy is paid by all employers (across both private and public sector) who have an annual pay bill of more than £3 million. The 'pay bill' is made up of the total earnings (subject to Class 1 secondary National Insurance contributions) of employees, and the levy is paid to HMRC through the Pay As You Earn (PAYE) process.
- **How much do employers pay in?** Levy-paying employers are required to pay 0.5% of their total annual pay bill above £3 million.
- **How are levy funds used?** In England, the funds generated through the levy are used to fund subsidies to employers. The subsidies can be used to cover the training and assessment costs of apprentices, but cannot be used to cover other costs, such as wages.
- **What are the subsidy rates?** The subsidy rates depend on whether the employer is accessing its own levy funds.
  - Levy-paying employers can access funding equal to 110% of the amount of the levy paid (i.e. the full costs and a 10% top-up).
  - Non-levy-paying employers – and those who have exhausted their fund – receive a subsidy for 95% of the cost of apprenticeship training, and must cover the remaining 5% of costs.
- **How did the apprenticeship levy change the subsidy rate?** Prior to 2017, the subsidy rates for apprentices were set based on the age of the apprentice:
  - 100% of training costs for 16- to 18-year-olds;
  - 50% of training costs for 19- to 23-year-olds;
  - 40% of training costs for those aged 24 and over (although this rate could vary).

The two dimensions of the levy: taxation and expenditure

The apprenticeship levy is a tax on UK employers that is used to fund skills and training provisions. In England, the majority of the revenue is used to subsidise the cost to employers of providing apprenticeships, while the other UK nations spend the funds raised through the levy on a broader range of skills programmes.

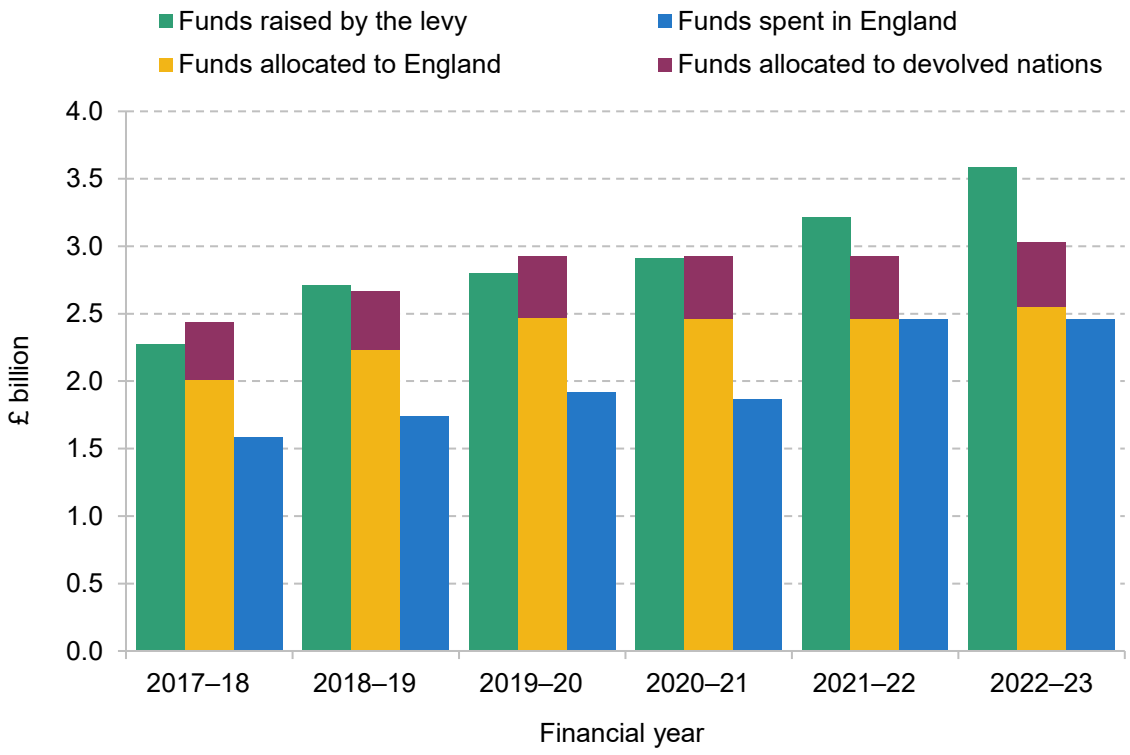
The tax side of the apprenticeship levy

Despite appearances, the apprenticeship levy is not really a hypothecated tax, where the revenue collected goes directly into a separate fund dedicated solely to apprenticeships. Instead, the

Treasury sets an Apprenticeship Budget in England at each spending review. While the revenue from the levy is a key factor in setting the Apprenticeship Budget, other considerations such as broader policy objectives can also play a part. The level of allocated funding can be, and has been, different from the amount of money raised through the apprenticeship levy. The devolved governments of Scotland, Wales and Northern Ireland receive a corresponding amount via the Barnett formula.

In England, the system has demand-led elements. Levy-paying employers pay into the levy based on their payroll and can access their contributions to fund apprenticeship training. In this context, the funding is responsive to the demands of levy-paying employers: they contribute to the system and decide when and how to use the funds. In contrast, non-levy-paying employers do not contribute directly to the apprenticeship levy but can still subsidise apprenticeships. Their training is primarily financed from the central Apprenticeship Budget, sustained partly by unused funds from levy-paying employers. While the system offers some demand-led components, especially for levy-paying employers, the government retains control mechanisms such as anticipated revenue calculations and caps on funding bands for apprenticeships.

Figure 9.9. Funds raised by, allocated and spent from the apprenticeship levy



Source: Funds raised by the levy from the OBR's Economic and fiscal outlook – supplementary fiscal tables: receipts and other. Funds spent in England and funds allocated to England between 2017–18 and 2021–22 from Mansfield and Hirst (2023). Funds spent in England in 2022–23 from Freedom of Information request, and funds allocated to England in 2022–23 from Department for Education consolidated annual report and accounts 2022 to 2023. Funds allocated to devolved nations between 2017–18 and 2019–20 from HM Treasury and calculated using Barnett formula for remaining years.

Figure 9.9 shows the revenue generated by the apprenticeship levy, the funds allocated to England's Apprenticeship Budget and the amounts allocated to the devolved nations, as well as the actual expenditure from England's Apprenticeship Budget.

The nominal amounts raised by the levy have grown over time, particularly in the last two years, driven by increases in companies' pay bills due to wage inflation. In the early years of the levy, the amount allocated exceeded the amount raised. However, this has been reversed in the last two years, with almost £290 million more raised than allocated in 2021–22, rising to £550 million in the most recent year. Since the apprenticeship levy was introduced in 2017, it has raised £580 million more than has been allocated across the UK. It is also important to differentiate between the funds allocated in England (through the Apprenticeship Budget) and actual expenditure. The former represents the government's allocated budget for apprenticeship training, while the latter reflects the real uptake and utilisation by employers. In the first four years of the levy, 75–80% of the Apprenticeship Budget in England was spent each year. The gap has narrowed in recent years, with 96% of the budget being spent in the last financial year.

Given that the apprenticeship levy is not a hypothecated tax, there could be an argument for simplifying the tax system and raising the money through pre-existing taxes rather than having this separate tax. Indeed, the levy already operates essentially as an additional National Insurance contribution (NIC) for large employers, and could therefore be raised by increasing NICs. However, there is international evidence (Marsden and Dickinson, 2013) that having a separate tax labelled as a training levy is advantageous because it makes training investment decisions more salient to employers and also more politically salient.

The expenditure side of the apprenticeship levy

In England, revenue (theoretically hypothecated) from the apprenticeship levy is used to provide subsidies to employers for the cost of training apprentices. The economic rationale for subsidies stems from barriers, such as credit constraints or externalities, which result in fewer apprentices being trained than is socially optimal. There are sound economic grounds to subsidise training, then, and even prior to 2017, subsidies existed for apprenticeship training. The introduction of the apprenticeship levy was associated with two key changes to the existing apprenticeship subsidy system in England – the level of the subsidy and the targeting of differential subsidy levels. The merits of these two changes are debatable.

In 2017, the subsidy rates were significantly increased for adult apprentices (i.e. those over the age of 19). Levy-paying employers (i.e. those with a sufficiently large pay bill to be subject to the levy) can access a subsidy for 110% of training costs. This compares with 95% of the training costs for non-levy-paying firms (with smaller pay bills). These revised rates represent a significant increase on the previous subsidy rates, which covered up to half of apprenticeship training costs for adults. They are also significantly higher than the subsidy rates that are

currently set in Scotland[13] (up to 50% for apprentices aged over 24) and Northern Ireland[14] (50% for apprentices aged 25 and over). The risk of a high subsidy rate is that employers may be less cautious about whether apprenticeships really meet their training needs. In addition, instead of stimulating new training, employers may be induced to relabel existing training as apprenticeships in order to access this subsidy.

To justify substantial public subsidies, one would expect particularly high returns on public investment in apprenticeships in England. Amin-Smith, Cribb and Sibieta (2017) describe how a report published by the government (HM Government, 2015) in the run-up to the introduction of the apprenticeship levy claimed that there was indeed an extremely high return on public investment in apprenticeships – 'the amount of return is between £26 and £28 for every £1 of government investment in apprenticeships at level 2 and level 3 respectively'. However, these figures greatly overstated the returns to apprenticeships, as the estimates were based on a number of strong assumptions, including very low dead weight and large spillover effects. Although there is evidence that apprenticeships generate positive private returns, as shown in Table 9.3, the returns are not significantly higher than for all other qualifications.

While it could be argued that the government currently fully funds classroom-based qualifications for eligible adults and that apprenticeship training should be treated in the same way, this ignores the differences between the two types of training. Classroom-based qualifications generally provide foundational and 'general' skills that are likely be useful across a range of sectors. In contrast, apprenticeships are more likely to foster 'specific skills' that meet the needs of a particular employer. As a result, the employer benefits directly from the training and should therefore bear part of the training costs.

Another element of the 2017 reforms was the introduction of a higher subsidy rate for levy-paying firms than for non-levy-paying firms. While it may be tempting to argue that levy-paying firms deserve a higher subsidy rate because they have borne the costs of the tax, this is misguided. The subsidy rate should be set according to the extent to which different employers are doing less training than is socially optimal, rather than according to their historical payments. The existing subsidy system effectively uses employer size (measured via pay bill) as a proxy for this, but this will not reflect the extent of the barriers to providing training faced by different employers. Indeed, there are reasons to believe that smaller firms actually face greater barriers to investment, but they receive a smaller subsidy. For instance, smaller firms are more likely to be credit-constrained (OECD, 2021), which may make it harder for them to internalise the wider benefits of apprenticeships. In practice, it is difficult to measure the extent of market failures, but

[13] https://www.skillsdevelopmentscotland.co.uk/about/policies/procurement/subsidy-control/.
[14] https://ccskills.org.uk/what-we-do/supporting-our-sector/apprenticeships/faqs-ni/.

in the absence of this information, a better approach would be to adopt a uniform subsidy rate for all employers.

The existence of varying subsidy rates also complicates the administration of the current system. A prime example is the levy transfer system, which enables levy-paying employers to transfer their unused levy funds to non-levy-paying employers so that they can benefit from the higher subsidy rate. The rationale for this is that it enables larger levy-paying firms to help firms within their supply chain to improve the skills of their workforce (and benefit from the large firm's higher subsidy rate), which ultimately benefits both firms. However, this introduces additional layers of administration and requires further decisions – for example, on the allowable amount of the levy transfer. A uniform subsidy rate would remove this additional complexity.

In summary, while there are strong economic reasons for subsidising apprenticeship training, the current system raises several concerns. The prevailing subsidy rates suggest exceptionally high returns to public investment or large market failures in apprenticeship training, but the evidence for these is ambiguous at best. Moreover, the current subsidy rates in England are much higher than those in the other UK nations. The differential rates between levy-paying and non-levy-paying firms also do not appear to reflect the barriers to providing training faced by employers. A move towards a uniform subsidy rate at a lower rate than the existing level for all employers would be more justifiable, more coherent and administratively simpler.

The change in apprenticeship participation

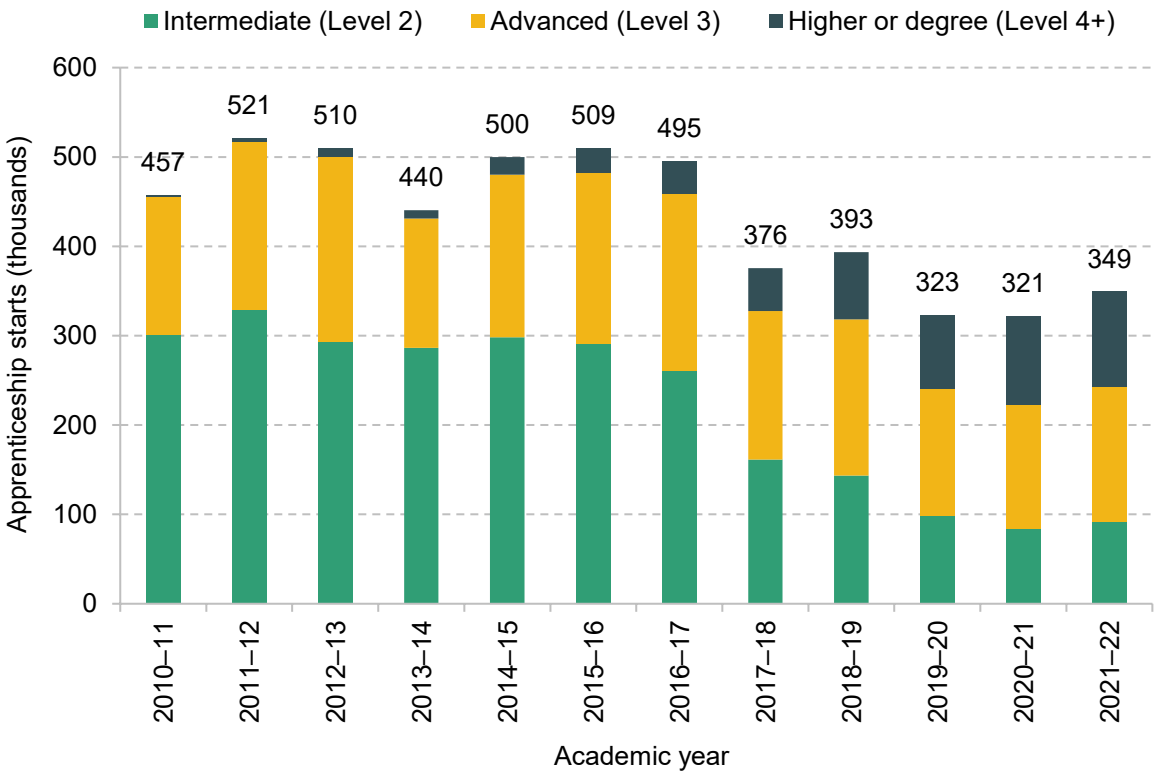
The introduction of the apprenticeship levy, combined with higher subsidy rates, is likely to have increased employers' incentives to offer apprenticeships. This was particularly the case for older apprentices (those aged over 19), who saw the largest relative reduction in the cost of their training. At the same time though, regulatory reforms in the 2010s, including the introduction of apprenticeship standards in 2017, reduced the ability of employers to offer lower-quality training. This would potentially lead to a reduction in the total number of apprenticeships, and also a change in the type of apprenticeships offered. It is not possible to disentangle the impact of the levy from these regulatory changes, but here we set out how apprenticeship participation has changed in recent years, to provide some insight on the relative impact of these changes.

There are four levels of apprenticeships in England:

- intermediate apprenticeships – equivalent to National Qualifications Framework (NQF) Level 2 (itself equivalent to five A*–C grades at GCSE);
- advanced apprenticeships – equivalent to NQF Level 3 or two A–E grades at A level;
- higher apprenticeships – equivalent to at least a Level 4 qualification (such as an HNC);
- degree-level apprenticeships – equivalent to an undergraduate degree.

Figure 9.10 shows how the number of apprenticeship starts in England at each level has changed over time, with higher and degree-level apprenticeships aggregated together. Between 2011–12 and 2016–17, there were consistently around 500,000 apprenticeship starts each year. The number of apprenticeships then suddenly dropped by a quarter between 2016–17 and 2017–18. This decline coincided with the introduction of the apprenticeship levy but also the transition to apprenticeship standards. Since then, the number of apprenticeship starts has remained below 400,000 in each year. The overall fall in the number of apprenticeship starts has been largely driven by a fall in intermediate apprenticeships. In contrast, the number of higher or degree apprenticeships has almost tripled since 2016–17. In 2021–22, there were 349,000 apprenticeship starts, of which almost 30% were higher apprenticeships, compared with less than 1% a decade earlier.

Figure 9.10. Number of apprenticeship starts in England by level



Source: Number of starts between 2010–11 and 2014–15 from table 2.1 in Further education and skills: March 2020 main tables and number of starts between 2015–16 and 2021–22 from Department for Education statistics.

Beyond the overall decline in the number of apprenticeships and the shift to higher-level apprenticeships, there are several other changes in apprenticeship participation that have emerged. We list some of the key trends below, with corresponding graphs in Appendix 9A.

- **The number of apprenticeships has fallen across all age groups (Figure 9A.1).**
  - The number of apprenticeship starts has declined across all age groups since 2016–17. The decline in apprenticeship starts among under-19s has been especially acute – falling by 37% since 2016–17 – yet the number of over-19 apprenticeships has also decreased by 27% over the same period.
  - The decline in apprenticeship starts among the older age group comes despite the fact that subsidy rates for older apprentices increased substantially – from 40–50% of training costs up to 110% for levy-paying firms.
  - The age limit of 25 for apprentices was removed in 2004, and since then the share of older apprentices has increased. Almost half of people starting apprenticeships in England are over the age of 25.

- **The average duration of apprenticeships has increased (Figure 9A.2).**
  - The average length of an apprenticeship increased by 28% between 2014–15 and 2021–22, from 488 days to 623 days.
  - There was an especially sharp increase between 2016–17 and 2017–18, with an average apprenticeship started in 2017–18 lasting 70 days more than one started in the previous year.
  - This increase was not only due to a change in the composition of apprenticeships, i.e. the increasing share of higher apprenticeships (which tend to be longer). Within each level, the duration of apprenticeships has increased.

- **There has been an increase in the share of apprentice starts at large employers, i.e. those with over 250 employees (Figure 9A.3).**
  - In the three years preceding the levy's introduction in 2017, large employers accounted for approximately 46% of all apprenticeship starts.
  - In 2017–18, the proportion of apprenticeship starts at large employers increased to 56%. The share grew further to 59% by 2020–21.

- **The number of apprenticeship starts has fallen across most industries with the exception of public administration (Figure 9A.4).**
  - The sharpest falls in apprenticeships have occurred in industries that previously had a high proportion of intermediate apprentices, such as arts and entertainment, accommodation and food services, and manufacturing.
  - Only one sector – public administration – has seen a significant increase in apprenticeship starts since the introduction of the levy. This has been driven by a target for public sector organisations in England to hire apprentices.[15]

[15] Specifically, there was a target for public sector organisations in England with 250 or more employees to recruit an average of at least 2.3% of their workforce as new apprentices between 2017 and 2021.

Taken together, these trends suggest that regulatory changes had a greater impact on apprenticeship participation than the increase in subsidy rates. Even with increased subsidy rates, especially for older apprentices, there was a fall in apprenticeship starts across all age groups. Additionally, the rise in the average duration of apprenticeships and the shift away from lower-level apprenticeships across all industries suggest that changes to regulations had a significant effect. This underlines the fact that both regulation and fiscal incentives are important for employers who are considering whether to invest in apprenticeship training. Finally, the shift towards higher-level, longer apprenticeships could help improve the 'brand' and perceived quality of these qualifications.

Broadening the apprenticeship levy

Since the introduction of the apprenticeship levy, the government has tinkered with its design. For example, the proportion of levy funds that can be transferred to non-levy-paying firms has been raised to 25% (from 10%), and the period over which levy funds can be used by levy-paying firms has been increased from 18 to 24 months (Mansfield and Hirst, 2023). These reforms have sought to maximise the use of levy funds, but they have not changed the scope of the apprenticeship levy: subsidies can only be spent on one specific form of training – apprenticeships.

Employer-provided training can take a number of different forms, and although apprenticeships are now more common than in the early 2000s, it is still only a minority of employers in the UK that train apprentices. The Employer Skills Survey shows that among employers in 2019:

- 11% had staff currently undertaking formal apprenticeships;
- 31% stated that they planned to offer apprenticeships in the future;
- 61% had funded or arranged training for staff in the past 12 months, with 43% funding at least one member of staff to train towards a nationally recognised qualification.

Thus, only a minority of employers currently access funding for apprenticeship subsidies. Furthermore, while we have documented the fall in apprenticeship starts, there has also been a long-term decline in employers providing training towards a nationally recognised qualification – a 5% decline in the 2010s. This raises the question of whether the government can and should do more to improve the incentives for employers to invest in non-apprenticeship training.

One potential reform proposed by the Labour party is to allow firms to spend up to half of their levy contributions on non-apprenticeship training. The reformed 'growth and skills levy'[16] would still require at least half of levy funds to be reserved for apprenticeships, but would

[16] https://feweek.co.uk/labour-pledges-to-widen-the-apprenticeship-levy/.

provide greater flexibility than the existing system. It would also bring England into line with other countries. Although training levies are common across the world, only two other countries – Denmark and France – have a levy specifically designed to fund apprenticeships (Kuczera and Field, 2018).

Under the existing apprenticeship levy, apprenticeship training is effectively fully subsidised while other forms of training do not receive a subsidy. The near-zero cost of apprenticeship training for employers incentivises them to provide apprenticeships instead of other forms of training. It could be argued that other forms of employer-provided training tend to be more 'specific', focusing on skills directly aligned with the employer's operations. Such specificity, given its direct benefits to the employer, could suggest a reduced need for subsidy. However, there is a vast range of non-apprenticeship training which also develops general skills, and could be more viable to firms than an apprenticeship.

The desirability of broadening the apprenticeship levy also depends on the extent to which this would encourage training that is productive and additional. Compared with other forms of education and training, there is less evidence available on the returns to employer-provided training that is not an apprenticeship. The studies that do exist (e.g. Dearden, Reed and Van Reenen, 2006; Sepúlveda, 2010) tend to show that employer-provided training leads to both higher productivity and higher wages. Méndez and Sepúlveda (2016) show that, on average, an additional spell of employer-provided training in the UK leads to a 0.7% increase in wage rates. However, these studies also highlight the fact that there is a great deal of variation in the returns to different types of employer-provided training, and so it matters which type of training is subsidised.

There is substantive evidence that subsidising employer-provided training leads to a high degree of deadweight loss. Abramovsky et al. (2011) show that the Employer Training Pilot – a precursor to Train to Gain – which provided employees with free training for basic qualifications, did not have a statistically significant impact on the share of eligible employees undertaking qualification-based training. Instead, the subsidy largely substituted existing employer investment. The scrapping of Train to Gain was also, in part, due to a high share of deadweight loss. A National Audit Office report (2009) found that 'half of employers whose employees received training [under Train to Gain] would have arranged similar training without public subsidy'. Similarly, Leuven and Oosterbeek (2004) show that the deadweight cost associated with an effective training subsidy in the Netherlands was almost 100%. Therefore, broadening the apprenticeship levy may simply pay for training that would have already taken place.

Given the variable returns to training and the large potential for deadweight loss, it is important that there is effective regulation to ensure that the subsidy does not simply pay for mandatory

training such as health and safety training. The Labour party has stated that it will create a list of approved courses for the broadened subsidy, but so far no further details have been released. This is a critical decision. The challenge lies in offering employers flexibility to choose the training they need but also ensuring this is genuinely productive and that as much as possible is additional.

In the UK, the Institute for Apprenticeships and Technical Education (IfATE) already sets criteria for apprenticeships to ensure they meet certain standards, aiming to guarantee that the training provided is productive and aligned with employer needs. However, while these standards can enhance the quality of apprenticeships, they do not ensure that such training would not have been provided in the absence of a subsidy. In essence, high quality does not equate to the absence of dead weight, and the issue of additionality persists.

Looking internationally, several countries have established lists of approved qualifications eligible for training subsidies. Yet, while a government may be able to draw up a list of regulatory-approved training options, which can help steer training towards high standards, it is harder to ensure this will be additional training. Moreover, while these lists aim to reduce wastage, they can inadvertently stifle innovation in training or be slow in adapting to the rapidly changing needs of the job market. Therefore, even with rigorous regulations, governments must be prepared to grapple with a degree of deadweight cost when broadening subsidies.

A final consideration in broadening the use of subsidies is that the likely additional costs associated with this reform would need financing. Perhaps the obvious way to free up funds for expanded subsidies is to lower the current 95% and 110% subsidy rates.

Summary

The apprenticeship levy is the government's central mechanism for incentivising employer investment in training, which is why its design is so important. Since its introduction, the number of apprentices has fallen and the longer-term decline in employer investment in training has continued. However, the change in apprenticeship participation also highlights the importance of regulatory changes, as these appear to have played a significant part in driving a shift towards longer apprenticeships at higher levels. That is why fiscal incentives need to be accompanied by effective regulation.

The apprenticeship levy itself should be reformed to provide a single subsidy rate for all employers set at a lower rate than the current ones. This would lead to a more equitable and streamlined system that does not disproportionately favour employers based on their size. It would create a consistent incentive across the board, reducing distortions in employers' training decisions. While there may be a case for broadening the use of levy funds to equalise incentives

across different forms of training, previous experiences with programmes such as Train to Gain suggest that this comes with the significant risk of deadweight loss.

9.7 Taxation of training

Compared with other areas of skills policy, the tax treatment of training has remained relatively unchanged over time. This policy stability, when contrasted with the frequent chopping and changing to other aspects of skills policy, is an attractive feature. But it is still important to assess whether the existing system is well designed. The current approach to taxing training expenditure in the UK is primarily determined by the source of funding: spending on employer-funded training is not taxed up front, while self-funded training tends to be financed from income after tax (see Box 9.3 for more details). In this section, we discuss the current tax treatment of training and set out the trade-offs associated with extending the categories of untaxed training expenditures.

Box 9.3. The taxation of training in the UK

The current approach towards taxing training expenditure in the UK is primarily determined by the source of the funding – whether the training is financed by employers or the cost is borne by individuals. Employer-funded training is not taxed. VAT-registered employers can reclaim any VAT on their training expenses, treating it as a deductible business cost. And profit-making firms can deduct training expenses from their taxable income for corporation tax purposes.

On the other hand, self-funded training (for employees, the self-employed or non-workers) does not enjoy the same broad tax exemptions. It is usually paid for out of post-tax income. There are, however, two exceptions:

- Employees can claim tax relief on the cost if they are obliged to undertake and pay for training that is incurred 'wholly, exclusively and necessarily in the performance of the duties of the employment'.
- Self-employed individuals can deduct training costs that are incurred 'wholly and exclusively' for their business where it maintains or updates existing skills but not when it introduces new skills.

Employers' expenditure on training is not considered part of an employee's taxable income (i.e. it is not a taxable benefit), so it is exempt from both income tax and employer or employee National Insurance contributions. However, if the training increases the employer's subsequent profits or individuals' future earnings, these will of course be taxed.

In determining the tax treatment of a good, the key question is the extent to which it is an input into production or a consumption good. While the former plays a role in the production of other goods and services, the latter is a final product consumed directly by the end user. Economic theory (Diamond and Mirrlees, 1971) suggests that it is more effective to tax consumption than production inputs. This is because taxing production inputs can distort a firm's production decisions. Taxing production inputs also introduces 'double taxation': the input is taxed initially and the increased future income resulting from the initial input investment is also taxed.

Determining whether training is a production input or a consumption good is complex. While training may increase productivity, it may also have intrinsic consumption value for the trainees. For instance, someone might take a pottery course not to increase their productivity at work, but simply as a hobby. In effect, the current UK tax system uses the source of funding as a proxy for this classification. If the training is funded by an employer or falls within certain exemptions, it is considered an input into production and is not taxed. The expectation is that this will lead to a more productive worker and increased profits, which will be subject to taxation. Conversely, most self-funded training is taxed, and is viewed primarily as consumption. This existing categorisation is likely to be overly stringent, given that not all self-funded training is purely consumption (while one would expect the vast majority, if not all, employer training to be purely production).

Beyond considerations about the efficiency of the tax system, expanding tax exemptions for more types of self-funded training could decrease the effective cost of such training, promoting greater participation in education. This strategy could be vital in reaching demographics with traditionally low training participation, such as the self-employed – a growing demographic within the UK's workforce (Giupponi and Xu, 2020). As of 2022, only 13% of self-employed individuals reported engaging in work-related education or training over the past three months, compared with 28% of all workers (Labour Force Survey). Using tax policy to reduce training costs could be an effective tool to boost training among this group.

Extending tax relief offers potential benefits, but it is not without its challenges. A government consultation (HM Treasury, 2018) on extending tax relief for self-funded work-related training concluded that it was unclear whether it would lead to significant amounts of additional training. The policy may also lead to an increase in training that is consumption rather than production. In the 1990s, the UK implemented a vocational training tax relief policy, allowing trainees to deduct an amount equal to the basic income tax rate from training costs paid to UK training providers. Approximately 200,000 individuals claimed this relief each year. While its intent was to promote skill acquisition, a notable portion of the subsidised training was probably not directly productive. For instance, in 1997–98, over a quarter of the £36 million tax relief related to claims for flying and diving. It was also common for people to claim tax relief for other

courses related to hobbies, such as cookery and horse riding. Hence any policy reform in this area must be carefully designed with consideration of its application.

In summary, the current tax system applies a harsh categorisation to self-funded training expenditure. While there is an underlying logic – assuming self-funded training leans more towards consumption – there are indeed instances where such training serves productive purposes. By expanding the set of untaxed training categories, the government could boost training investment among groups that traditionally exhibit low training participation, such as the self-employed. The decision to pursue this policy will depend on the government's tolerance for the likely deadweight costs as well as its ability to regulate such a policy effectively. This is a tricky balance, but if the government wants to encourage private investment, it is a policy lever worth revisiting.

9.8 Conclusion: reforming the skills system

Since the early 2000s, the UK has seen a marked decline in participation in adult education and training. There has been a fall in both public and private investment in training. The decrease in training participation and investment does not automatically warrant increased government intervention, but there are theoretical reasons to suppose that individuals and employers will tend to underinvest in training, relative to what would be socially optimal, due to the presence of multiple market failures. These reasons underpin the current set of policies in place, aimed at tackling these market failures, including public funding for adult education, student loans, training subsidies, taxation and regulation. In light of the large decline in training participation, and with concerns in particular about skills shortages and poor productivity, it is worth considering whether the existing skills system could be reformed and improved. Below we set out five key recommendations.

1. Refrain from setting targets based on qualification counts

Historically, governments have been inclined to set targets based on the number of qualifications achieved. In the 2000s, the Labour government set a target of 2.25 million adults completing a basic skills course. The following decade saw both the coalition government and the subsequent Conservative government set targets for the number of apprenticeship starts. Although such targets can create political salience, their practical effect is often less commendable. They can inadvertently prompt education providers and learners to pursue training purely to fulfil these benchmarks, instead of focusing on the most beneficial education. Instead of setting targets based on qualification counts, the government should focus on using the policy levers at its disposable to provide both employers and individuals with appropriately strong incentives to undertake training.

2. Review funding of adult skills courses

If this or a future government wanted to change participation in training, perhaps the most obvious place to start is with the level of funding available for adult learning. Since its peak in 2003–04, public funding for adult skills has fallen by 31% in real terms. The decline in funding has been driven both by a fall in the number of learners and by a long-term freeze in funding rates. Any measures to increase the number of learners must be weighed against the often low returns from these courses, which is why it is not as simple as reverting back to previous funding levels. The long-term freeze in cash funding rates should be reviewed to ensure that funding rates reflect the true cost of delivering courses. These are issues that ought to be considered ahead of the next spending review.

3. Ensure timely implementation and clarity on loan reforms

One area where the government has already committed to reform is the introduction of the Lifelong Learning Entitlement. The LLE will unify the separate loan systems that currently exist for further education and higher education courses, and is intended to make the loans system more flexible. However, progress in implementing the LLE has been slow, and there are suggestions that the LLE could be delayed beyond the planned date of 2025. Moreover, there remain important questions about the design of the system, such as which courses will be covered by the new loan entitlement. The government should provide clarity on the LLE as soon as possible, and ensure that it moves forward with implementing the LLE within a reasonable time frame.

4. Reform the apprenticeship levy

Since the introduction of the apprenticeship levy, the number of apprenticeship starts per year has fallen despite higher employer subsidies for apprenticeship training. However, the changes in participation are likely to have been driven by regulatory changes that coincided with the introduction of the levy. This highlights the fact that regulations as well as fiscal incentives are critical to employers' decisions. Nevertheless, several potential reforms to the apprenticeship levy merit consideration. A uniform subsidy rate for all employers, set at a lower rate than the existing rates, is likely to be both more appropriate and much simpler to administer. The Labour party's proposal to broaden the use of the levy warrants attention. This could equalise incentives across different forms of training, but there is a significant risk of deadweight loss that cannot be ignored and is not easy to mitigate. An obvious way of covering the cost of broadening what the levy can be used to finance would be to lower the existing subsidy rates.

5. Revisit the tax treatment of self-funded training

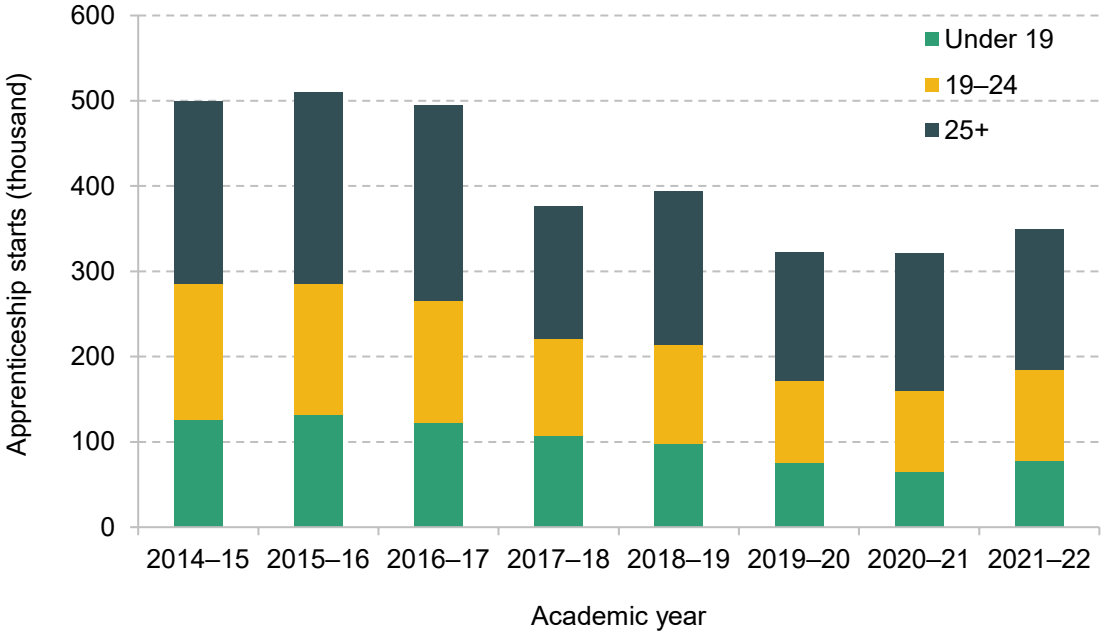
Under the current tax system, spending on employer-funded training is not taxed, whereas self-funded training generally does not benefit from the same broad tax exemptions. While there may be economic justifications for this approach, such as self-funded training being less likely to be

an investment in productivity, there may be value in widening the range of untaxed training categories. Such an extension could particularly boost training incentives for groups such as the self-employed, who have historically shown low training uptake. This effect needs to be weighed against the risk of subsidising training that is for consumption purposes. Yet if fostering greater private investment in training is the aim, revisiting the tax treatment of self-funded training should be considered.

Adult skills policy is not a simple area, nor one that is easy to 'solve'. But it is important – to the millions who benefit from courses at local colleges or on-the-job training, to their employers (or would-be employers) and to our wider prosperity. The five sets of policy recommendations outlined above provide specific ways in which the existing skills system can be improved. The sums involved in some of the proposals here are not particularly large, in the grand scheme of the public finances. However, any changes in spending, or increases in the generosity of tax exemptions, would need to be balanced against the fiscal consequences elsewhere. But if this or the next government is serious about reforming skills policy, then it is high time that some of these options are seriously considered.

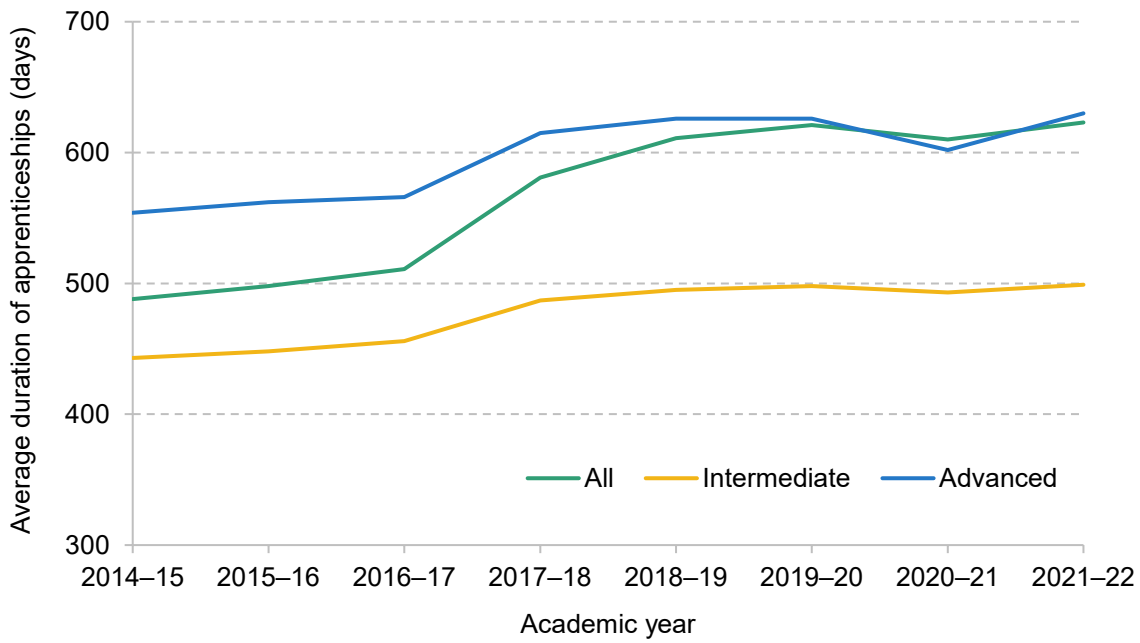
Appendix 9A

Figure 9A.1. Number of apprenticeship starts in England by age



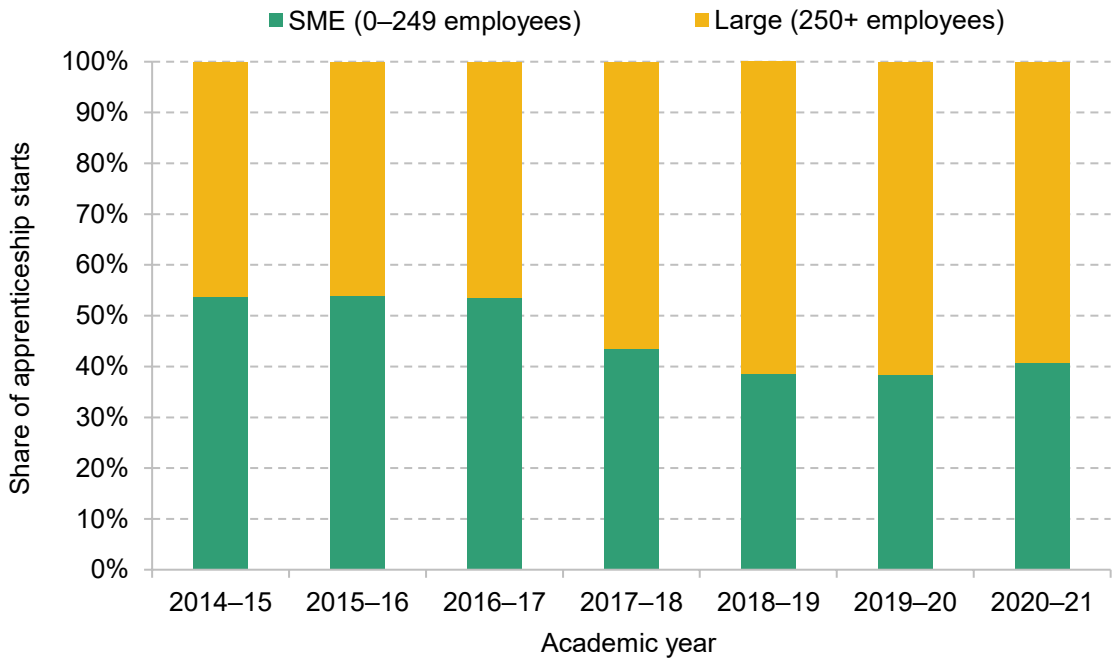
Source: Department for Education statistics.

Figure 9A.2. Average duration of apprenticeships in England by level



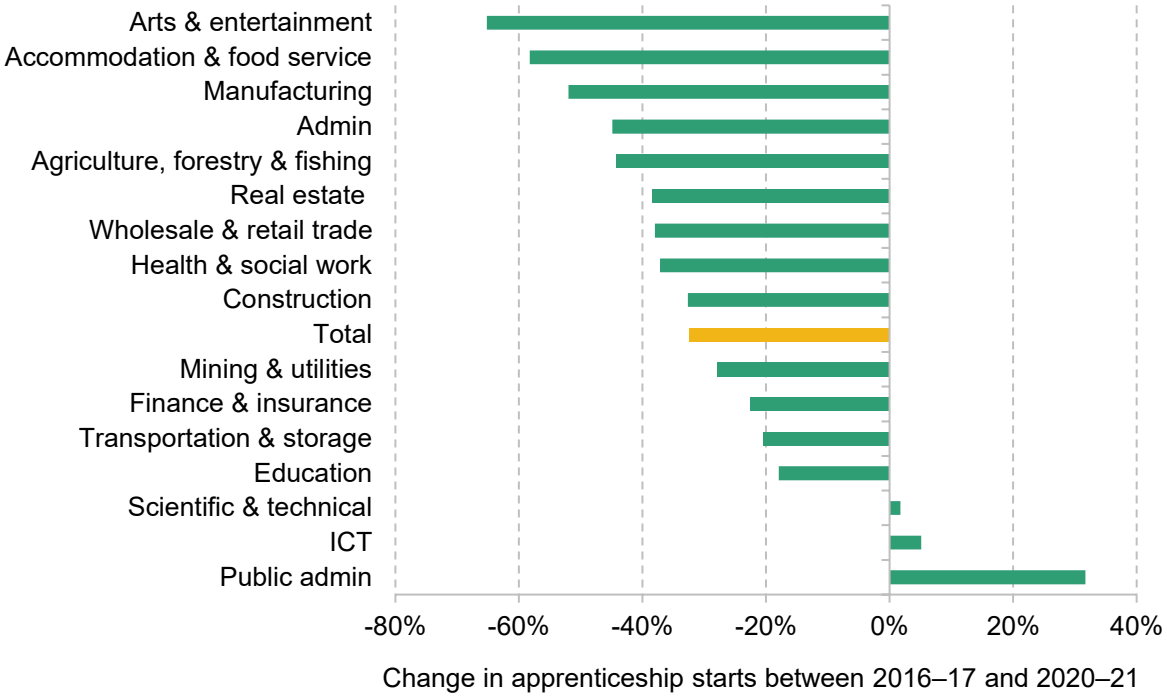
Source: Department for Education statistics.

Figure 9A.3. Breakdown of apprenticeship starts in England by employer size



Source: Department for Education statistics.

Figure 9A.4. Change in the number of apprenticeship starts in different industries between 2016–17 and 2020–21



Source: Department for Education statistics.

References

Abramovsky, L. Battistin, E., Fitzsimons, E., Goodman, A. and Simpson, H., 2011. Providing employers with incentives to train low-skilled workers: evidence from the UK employer training pilots. *Journal of Labor Economics*, 29(1), https://doi.org/10.1086/656372.

Amin-Smith, N., Cribb, J. and Sibieta, L., 2017. Reforms to apprenticeship funding in England. In C. Emmerson, P. Johnson and R. Joyce (eds), *The IFS Green Budget: February* 2017. https://ifs.org.uk/books/reforms-apprenticeship-funding-england.

Augar, P., 2019. Post-18 review of education and funding: independent panel report. Department for Education, https://www.gov.uk/government/publications/post-18-review-of-education-and-funding-independent-panel-report.

Belfield, C., Farquharson, C. and Sibieta, L., 2018. 2018 annual report on education spending in England. IFS Report 150, https://ifs.org.uk/publications/2018-annual-report-education-spending-england.

Bolton, P., 2023a. Higher education student numbers. House of Commons Library Research Briefing 7857, https://researchbriefings.files.parliament.uk/documents/CBP-7857/CBP-7857.pdf.

Bolton, P., 2023b. Student loan statistics. House of Commons Library Research Briefing CBP01079, https://researchbriefings.files.parliament.uk/documents/SN01079/SN01079.pdf.

Buttar, J., Alonso, R. and Martin, K., 2023. Labour market value of higher and further education qualifications: a summary report. Social Mobility Commission, https://www.gov.uk/government/publications/labour-market-value-of-higher-and-further-education-qualifications-a-summary-report.

Clayton, N. and Evans, S., 2021. Learning at work: employer investment in skills. Learning and Work Institute, https://learningandwork.org.uk/resources/research-and-reports/learning-at-work-employer-investment-in-skills/.

Dearden, L., Reed, H. and Van Reenen, J., 2006. The impact of training on productivity and wages: evidence from British panel data. *Oxford Bulletin of Economics and Statistics*, 68(4), 397–421, https://doi.org/10.1111/j.1468-0084.2006.00170.x.

Department for Education and Skills, 2007. Departmental Report 2007. CM 7092, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/228675/7092.pdf.

Department for Education, 2023a. Lifelong Learning Entitlement: impact assessment. https://www.gov.uk/government/publications/lifelong-loan-entitlement-impact-assessment.

Department for Education, 2023b. Lifelong Learning Entitlement overview. https://www.gov.uk/government/publications/lifelong-learning-entitlement-lle-overview/lifelong-learning-entitlement-overview.

Diamond, P. A. and Mirrlees, J. A., 1971. Optimal taxation and public production II: tax rules. *American Economic Review*, 61(3), 261–78, https://www.jstor.org/stable/1813425.

Drayton, E., Farquharson, C., Ogden, K., Sibieta, L., Tahir, I. and Waltmann, B., 2022. Annual report on education spending in England: 2022. IFS Report 234, https://ifs.org.uk/publications/annual-report-education-spending-england-2022.

Farquharson, C., McNally, S. and Tahir, I., 2022. Education inequalities. IFS Deaton Review of Inequalities, https://ifs.org.uk/inequality/education-inequalities/.

Foley, N., 2021. Apprenticeship statistics. House of Commons Briefing Paper 06113, https://commonslibrary.parliament.uk/research-briefings/sn06113/.

Giupponi, G. and Xu, X., 2020. What does the rise of self-employment tell us about the UK labour market? IFS Deaton Review of Inequalities, https://ifs.org.uk/publications/what-does-rise-self-employment-tell-us-about-uk-labour-market.

HM Government, 2015. English apprenticeships: our 2020 vision. https://assets.publishing.service.gov.uk/media/5a74eacde5274a59fa715f9d/BIS-15-604-english-apprenticeships-our-2020-vision.pdf.

HM Treasury, 2018. Taxation of self-funded work-related training. https://www.gov.uk/government/consultations/taxation-of-self-funded-work-related-training.

Kuczera, M. and Field, S., 2018. OECD Reviews of Vocational Education and Training: apprenticeship in England, United Kingdom. https://www.oecd-ilibrary.org/sites/9789264298507-6-en/index.html?itemId=/content/component/9789264298507-6-en.

Leitch, Lord, 2006. Leitch Review of Skills. https://www.gov.uk/government/organisations/leitch-review-of-skills.

Leuven, E. and Oosterbeek, H., 2004. Evaluating the effect of tax deductions on training. *Journal of Labor Economics*, 22(2), https://doi.org/10.1086/381257.

Lewis, J. & Bolton, P., 2023. The lifelong loan entitlement. House of Commons Briefing Paper 9756, https://commonslibrary.parliament.uk/research-briefings/cbp-9756/.

Li, J., Valero, A. and Ventura, G., 2020. Trends in job-related training and policies for building future skills into the recovery. Centre for Vocational Educational Research, Discussion Paper 033, https://cver.lse.ac.uk/textonly/cver/pubs/cverdp033.pdf.

Mansfield, I. and Hirst, T., 2023. Reforming the apprenticeship levy. Policy Exchange, https://policyexchange.org.uk/publication/reforming-the-apprenticeship-levy/.

Marsden, J. and Dickinson, P., 2013. International evidence review on co-funding for training. BIS Research Paper 116, https://www.gov.uk/government/publications/co-funding-for-training-international-evidence.

Méndez, F. and Sepúlveda, F., 2016. A comparative study of training in the private and public sectors: evidence from the United Kingdom and the United States. *Contemporary Economic Policy*, 34(1), 107–18, https://doi.org/10.1111/coep.12120.

Mirza-Davies, J., 2015. Apprenticeships policy in England, 2010–2015. House of Commons Briefing Paper CBP7278, https://commonslibrary.parliament.uk/research-briefings/cbp-7278/.

National Audit Office, 2009. Train to Gain: developing the skills of the workforce. https://www.nao.org.uk/reports/train-to-gain-developing-the-skills-of-the-workforce/.

OECD, 2021. Incentives for SMEs to invest in skills: lessons from European good practices. https://www.oecd.org/els/incentives-for-smes-to-invest-in-skills-1eb16dc7-en.htm.

Richard, D., 2012. Richard Review of Apprenticeships. https://www.gov.uk/government/publications/the-richard-review-of-apprenticeships.

Sepúlveda, F., 2010. Training and productivity: evidence for US manufacturing industries. *Oxford Economic Papers*, 62(3), 504–28, https://doi.org/10.1093/oep/gpp028.

Sibieta, L., Tahir, I. and Waltmann, B., 2021. Big changes ahead for adult education funding. Definitely maybe. IFS Report BN325, https://ifs.org.uk/publications/big-changes-ahead-adult-education-funding-definitely-maybe.

Wells, A., 2007. Memorandum submitted by Mr Alan Wells OBE. Select Committee on Education and Skills, https://publications.parliament.uk/pa/cm200607/cmselect/cmeduski/333/7022102.htm#n2.

Winterbotham, M., Kik, G., Selner, S., Menys, R., Stroud, S. and Whittaker, S., 2020. Employer Skills Survey 2019. Department for Education research report, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/925744/Employer_Skills_Survey_2019_research_report.pdf.

Wolf, A., 2011. Review of Vocational Education: The Wolf Report. Department for Education, https://www.gov.uk/government/publications/review-of-vocational-education-the-wolf-report.

Wolf, A., 2015. Fixing a broken training system: the case for an apprenticeship levy. Social Market Foundation, https://www.smf.co.uk/wp-content/uploads/2015/07/Social-Market-Foundation-Publication-Alison-Wolf-Fixing-A-Broken-Training-System-The-Case-For-An-Apprenticeship-Levy.pdf.

Data

Department for Education, 2023. Employer Skills Survey 2022. https://explore-education-statistics.service.gov.uk/find-statistics/employer-skills-survey/2022.

Eurostat, 2022. EU Labour Force Survey. https://ec.europa.eu/eurostat/web/microdata/european-union-labour-force-survey.

Office for National Statistics, 2023. *Labour Force Survey*. [data series]. *9th Release.* UK Data Service. SN: 2000026, DOI: http://doi.org/10.5255/UKDA-Series-2000026.

10. Full expensing and the corporation tax base

Stuart Adam and Helen Miller (IFS)

Key findings

1. Corporation tax is the fourth-biggest source of UK government revenue: the £82 billion it is expected to raise this year amounts to 8% of total government revenue. In the coming years, **corporation tax revenue is forecast to reach its highest-ever share of national income**.

2. **For decades, UK corporation tax policy followed a broad pattern of rate cutting and base broadening. This pattern has now sharply reversed.** In April 2023, the main corporation tax rate was increased from 19% to 25%. At the same time, the base was narrowed through a temporary 'full expensing' policy which allows companies to immediately deduct 100% of the cost of qualifying plant and machinery investments when calculating profits.

3. For now, the full-expensing policy has been put in place for three years. The government has stated a desire to make the policy permanent.

4. **The design of the corporation tax base creates a range of undesirable distortions**, including to the level and type of investment and to how investments are financed.

5. **If the full-expensing policy ends up being temporary, it will have little or no long-run effect on the UK's capital stock.** It will bring forward some investment that would otherwise have happened later, but there is no obvious reason to want to distort the timing of investment in that way at the moment.

6. The key reason the full-expensing policy is temporary appears to be cost: the Treasury estimates an up-front cost of around £10 billion a year for each of the three years it is in place. That estimate may be correct in terms of the short-run effect on measured

government revenue, but it gives a vastly inflated impression of the long-run cost of the policy. Most of the up-front cost will be recouped in future years (because full expensing is instead of a stream of capital allowances). **Accounting for this, the true ultimate cost is around £1–3 billion for each year the policy is in place.** There is a risk of letting short-run scorecard impacts govern long-term policy choices.

7. **If full expensing is made permanent, it would bring benefits**, simplifying the tax system and removing the corporation tax penalty for equity-financed investment. **But, in isolation, it comes with trade-offs.** Notably, it creates a bias towards investing in the kinds of assets that qualify (i.e. towards investing in plant and machinery rather than other assets), and it increases the large and problematic existing subsidy for debt-financed investment – it makes even more unprofitable projects viable. This is not good for productivity. **Our view is that, on balance, making the current policy permanent would be preferable to letting it expire – though neither is ideal.**

8. **Ideally, the full-expensing policy would be made permanent as part of a broader reform package that extended full expensing to all investment and changed the treatment of debt interest payments.** There are several ways to move towards a well-designed corporation tax base.

9. Uncertainty is bad for investment. **The government – and the opposition – should set out a clear long-term plan for corporation tax.**

10.1 Introduction

The 2023 Budget announced that, from April 2023 to April 2026, companies will be able to deduct 100% of qualifying plant and machinery investment immediately (known as 'full expensing') when calculating taxable profits. In April this year there was also a big increase in the main rate of corporation tax, from 19% to 25%; this was the first rate increase since 1973, half a century earlier.

This year therefore marks a major change in direction in corporation tax policy. Chancellors over several decades (and in most developed countries) have tended to reduce the headline rate while also broadening the base. Across the 2010s, the UK's main corporation tax rate was cut substantially (from 28% to 19%) while the tax base was broadened, including by making most capital allowances less generous.

In February 2022 Rishi Sunak, the then Chancellor, argued that it was 'unclear' that recent cuts to the corporation tax rate had led to 'a step change in business investment'[1] and that increasing capital allowances would be better at promoting investment. The 2022 Spring Statement suggested various specific options for increasing capital allowances for plant and machinery investment, and a policy paper in the May sought views on them (HM Treasury, 2022). While briefly Chancellor, Kwasi Kwarteng chose to announce an increase in the generosity of the capital allowance regime in one of the specific ways suggested in the Spring Statement, setting the annual investment allowance (AIA) at £1 million on a permanent basis from April 2023 rather than allowing it to fall back to £200,000 as it had been due to.[2] Temporary full expensing, which is equivalent to an unlimited AIA (for the investments it applies to), thus continues to move in the same direction.

The question facing the government (and future governments) is whether to make this full-expensing policy permanent and, if so, whether to do it alongside a broader set of reforms.

The temporary nature of the full-expensing policy is a problem. The UK needs an investment-friendly tax system for the long term, not just for the next three years. The increased generosity of capital allowances will boost business investment in the short run, but essentially by changing the timing of investment rather than its overall level. There is no good reason to distort the timing of investment at this point in time. And even the short-run impact will be limited because some large investments cannot be arranged quickly enough to be carried out within three years. The Office for Budget Responsibility (OBR) predicts that the long-run impact of the policy on the UK's capital stock will be zero. Said differently, the policy will only have a meaningful positive impact if it is made permanent.

Making the current full-expensing policy permanent, rather than letting it expire in April 2026, would come with trade-offs. On the one hand, it would provide a simple, neutral and robust treatment of equity-financed investment in ordinary plant and machinery on a permanent basis and this would be valuable. On the other hand, the current policy is limited to (certain types of) plant and machinery, and to companies but not unincorporated businesses, meaning there would be a greater distortion to some asset choices (e.g. plant and machinery versus buildings) and across legal forms. In addition, the more generous capital allowances also interact with the treatment of financing costs to increase the subsidy for many debt-financed investments. That is not a good thing. What matters is not only how much firms invest overall, but what they invest in. Economic growth is not well served by subsidising unproductive investments that would be unviable in the absence of tax. It is difficult to weigh up the economic trade-offs involved in

[1] https://www.gov.uk/government/speeches/chancellor-rishi-sunaks-mais-lecture-2022.

[2] Mr Kwarteng also cancelled the planned rise in the corporation tax rate from 19% to 25% that Mr Sunak had announced, but the planned rise was reinstated when Mr Kwarteng was sacked.

making the current full-expensing policy permanent. In addition, there are political economy considerations: would permanent full expensing of main-rate plant and machinery for companies make further reform more likely (e.g. by marking a clear direction of travel towards a different system) or less likely (e.g. because takeaways related to the treatment of debt finance may be harder in isolation than if accompanied by the giveaway of full expensing)? Our view is that, on balance, making the current full-expensing policy permanent would be preferable to letting the temporary measure expire, but this is a finely balanced judgement and others could reasonably take a different view. We would have much more confidence that making the full-expensing policy permanent was part of a move towards a well-designed tax base if the government had set out a plan for corporation tax.

Ideally, the full-expensing policy would be made permanent as part of broader reforms that include extending full expensing to all investment and changing the tax treatment of debt finance.

A better-designed corporation tax base would improve investment incentives. UK rates of business investment are among the lowest in the developed world; in 2019, UK business investment was the lowest in the G7 and the third-lowest in the OECD (Adam, Delestre and Nair, 2022). Higher investment in economically profitable projects would boost productivity, which would improve living standards and make meeting future challenges easier (see Chapter 3 of this Green Budget).

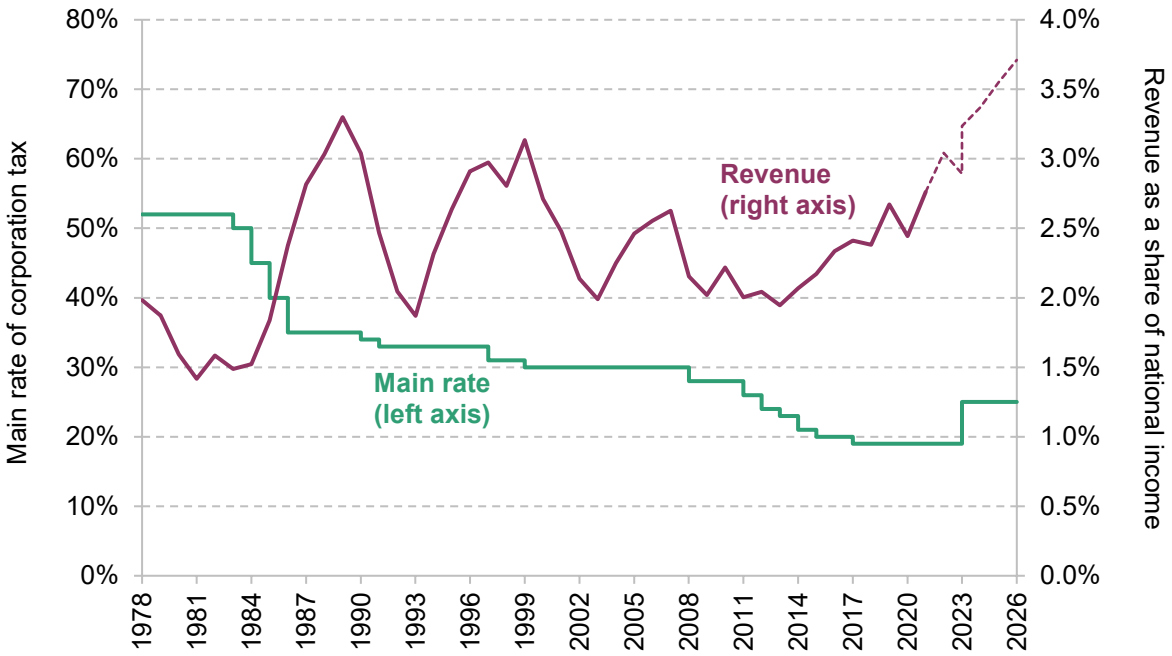
The government should set out a clear sense of direction and a plan for the corporation tax base. Ideally, that would involve a fully reformed base that improves investment incentives and lays down the conditions for higher and more productive business investment in the long run. But, whatever the plan, it is important that businesses know what to expect. There is clear evidence that policy uncertainty holds back investment, so should be avoided where possible. Important features of corporation tax have changed almost every year since 2010. The temporary full-expensing policy is just the latest in a long line of (often temporary) changes to capital allowances that have been put in place since 2010. This is a bad way to make policy. For any level of allowances, investment would be higher if the system were stable.

Section 10.2 describes how corporation tax affects investment incentives and how this compares with what a well-designed tax base would achieve. Section 10.3 sets out policy options. Section 10.4 concludes.

10.2 Corporation tax and investment incentives

Corporation tax is the fourth-biggest source of revenue for the UK Treasury. In March 2023, it was forecast to raise around £82 billion in 2023–24, 7.8% of total government revenue. Corporation tax revenue is forecast to reach its highest-ever share of national income. In part, this is the result of the increase in the main rate from 19% to 25%. Looking back, revenues from corporation tax have been volatile, but have not declined overall despite large cuts in headline rates in the 1980s and 2010s (see Figure 10.1). This is partly because the tax base was broadened while the rate was cut (Adam, 2019).

Figure 10.1. Corporation tax rate and revenue over time



Source: https://ifs.org.uk/taxlab/taxlab-data-item/ifs-revenue-composition-spreadsheet and https://ifs.org.uk/taxlab/taxlab-data-item/ifs-fiscal-facts.

In this section, we summarise how corporation tax works. We focus on the role that capital allowances play, including how investments are treated under so-called 'full expensing', and how these have changed in recent years. We demonstrate how corporation tax affects investment incentives by presenting measures of effective tax rates.

How does corporation tax work?

Corporation tax is levied on the profits of companies operating in the UK. In broad terms, profit is revenue minus costs.

Deductible costs include day-to-day expenses (known as 'current' or 'revenue' expenditure), which include wages, raw materials and interest payments on borrowing.

Unlike current expenditure, investment (or capital) spending on things such as machinery and buildings is not automatically deductible when calculating taxable profits. Instead, capital allowances can be used by companies to deduct their capital expenditure from taxable profits gradually over a number of years.

Capital allowances and temporary full expensing

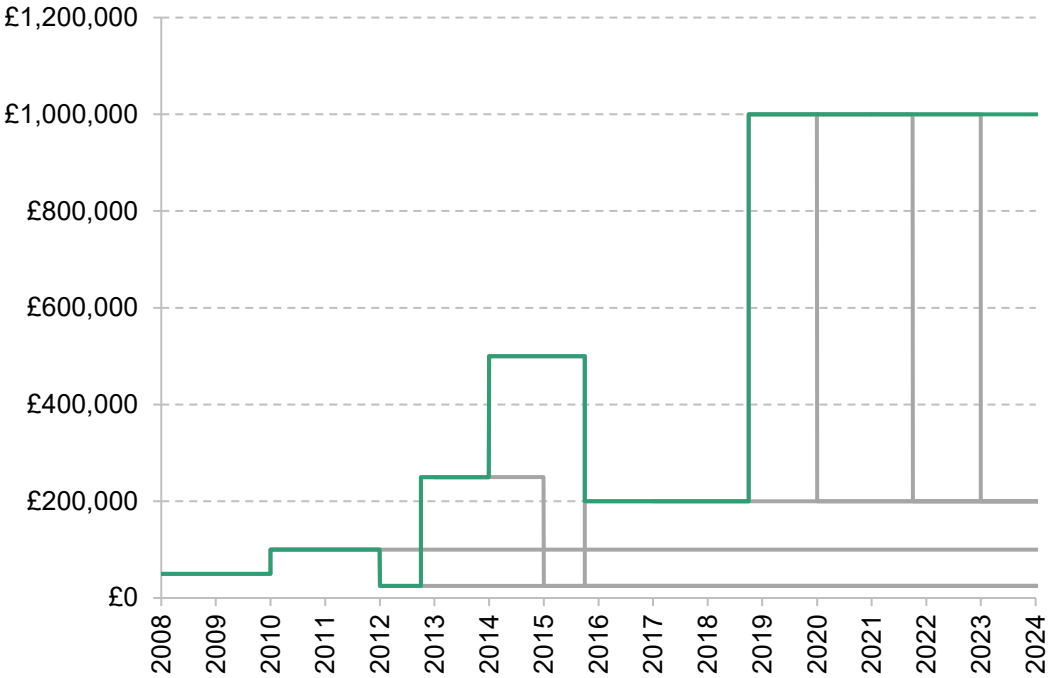
The capital allowances available for investment depend on the type of asset bought. Some capital allowances can be thought of as crudely allowing for depreciation, the decline in an asset's value over time (e.g. as a result of wear and tear). Others are clearly more generous than that and can better be thought of as treating the asset purchase itself as a business expense, or as encouraging certain kinds of investment over others.

For **plant and machinery**, which covers everything from computers and desks to lorries, industrial equipment and other tools of the trade, but excludes cars, there are two main elements of the baseline system (i.e. the system without full expensing):

- The **annual investment allowance** allows (incorporated and unincorporated) businesses to deduct investment immediately up to a certain limit each year. (This is known as 'expensing', since firms can deduct the outlays immediately in the same way as with current expenses.) The amount that can be deducted under the AIA has varied a lot over time – and its planned level has changed even more often than the actual level (see Figure 10.2).[3]
- Investment in excess of the AIA is deducted on a **'declining-balance' basis**. Most assets are subject to the main rate of 18%, meaning that for each £100 of investment, taxable profits are reduced by £18 in the first year (18% of £100), £14.76 in the second year (18% of the remaining balance of £82) and so on. So-called 'special rate assets', which include integral features in a building (such as lifts, air conditioning and lighting systems) and assets with an expected life of at least 25 years, are subject to the same treatment but at a rate of 6%. In both cases, all of the investment spending can be deducted eventually, but the delay makes the deduction less valuable. How much less valuable depends on the market interest rate, since that is the rate of return the firm could earn (or save in debt interest) in the meantime if it received the money earlier.

[3] The AIA has been temporarily increased many times. Most recently, it had been 'temporarily' increased from £200,000 to £1 million in 2019 and was due to fall back to £200,000 in April 2023, but in Mr Kwarteng's 'mini Budget' of 23 September 2022 it was announced that the AIA would be fixed at £1 million permanently.

Figure 10.2. The annual investment allowance over time



Note: Green line shows the actual AIA; grey lines show previous plans that did not take effect. The horizontal axis has April of each year marked; as shown in the chart, some changes took effect in January.

Source: Actual level from https://www.gov.uk/capital-allowances/annual-investment-allowance; previous plans from Office for Budget Responsibility, 'Policy measures database' (https://obr.uk/data/) and various Budgets and Autumn and Spring Statements.

For three years starting on 1 April 2023, companies can fully expense (i.e. immediately write off) the full cost of main-rate plant and machinery investment. This is like an uncapped AIA in that companies can immediately write off the full investment cost. But it applies only to companies (not to unincorporated businesses, i.e. the self-employed – sole traders and partnerships) and only to investments that would qualify for the 18% main rate. Special-rate assets will receive a 50% first-year allowance over the same period.[4]

For most businesses, the AIA is more than enough to cover all of their plant and machinery investment.[5] As such, full expensing does not change their incentives. But a small number of giant businesses account for most UK investment, and this means that most plant and machinery

[4] For a two-year period – 1 April 2021 to 31 March 2023 – a temporary 'super-deduction' was is in place which allowed companies to deduct 130% of the cost of their total (uncapped) main-rate plant and machinery investment and 50% of their special-rate plant and machinery investment. This allowance was introduced partly to prevent the preannouncement of the big April 2023 tax rate rise from discouraging investment. See Adam, Delestre and Nair (2022).

[5] In 2019–20, just under £23 billion of investment was carried out under the AIA (https://www.gov.uk/government/statistics/corporation-tax-statistics-2021).

investment falls outside the AIA. Full expensing therefore primarily benefits this relatively small group of companies investing very large amounts in qualifying plant and machinery.[6]

'Plant and machinery' is a major asset class, but there are other assets, investment in which is subject to a range of different allowances: cars, buildings, intangible assets, assets used for research and development (R&D), and certain environmentally friendly investments.[7] The different tax treatment of different types of assets is undesirable; we return to this below.

The Office for National Statistics provides data on business investment, but the categories used do not map neatly onto the categories used for tax. The most recent data (for 2022) show that 'ICT equipment and other machinery and equipment' and 'transport equipment' together account for around a third of business investment. This category is closest to the definition of plant and machinery for tax purposes (but, for example, does not distinguish long-life assets or cars, both of which attract different capital allowances from other plant and machinery). 'Intellectual property products' account for around two-fifths of investment (but in some cases may be treated as 'plant and machinery' for tax purposes). Buildings and structures account for around 30% of investment. (Office for National Statistics, 2022, table 1.)

Effective tax rates and investment incentives

Corporation tax – including features such as capital allowances and the treatment of borrowing, as well as headline rates – affects the financial incentives companies face to invest.

Economic theory identifies two measures of effective tax rates that capture the effects of tax on different kinds of decision:[8]

- The **effective average tax rate** (EATR) is the proportion by which tax reduces the rate of return on an investment.
- The **effective marginal tax rate** (EMTR) is the proportion by which tax reduces the rate of return on a *marginal* investment: that is, one that is only just worthwhile. It measures how much lower the *cost of capital* (the rate of return investors require) would be in the absence

[6] As well as allowing all main-rate plant and machinery investment to be deducted immediately, full expensing for such investment also frees up the AIA to be used for special-rate plant and machinery investment, which is covered by the AIA but not by the temporary full-expensing policy.

[7] The detailed rules on capital allowances are complicated. For a brief introduction, see https://ifs.org.uk/taxlab/taxlab-taxes-explained/corporation-tax-explained. There are no capital allowances for financial assets (such as shares in other companies) or other 'non-depreciable' assets.

[8] These measures were developed by Hall and Jorgenson (1967), King and Fullerton (1984) and Devereux and Griffith (1998 and 2003). For a fuller description and discussion, see Devereux and Griffith (2003), Auerbach, Devereux and Simpson (2010) and the chapters by Sørensen and Devereux in Sørensen (2004).

of taxation.[9] The higher the EMTR, the greater the required pre-tax rate of return, and hence the weaker is the incentive to invest.

The EMTR is therefore a special case of the EATR for a marginal investment. In short and broadly speaking, the EMTR is relevant for considering how tax affects the *scale* of investment that happens in the UK while the EATR is relevant for considering how tax affects the *location* of investment.[10] Adam, Delestre and Nair (2022) provide a fuller discussion of these measures and summarise the empirical evidence on the effects of corporate taxes on investment and other business decisions. In short, there is clear evidence that tax, while not the only factor that matters, does affect where firms locate their investment projects, and how much they invest.[11]

Broadly speaking, a good rule of thumb is that a well-designed tax system should strive to be neutral. Neutrality means taxing similar activities similarly; neutral tax systems will tend to be simpler, fairer and have less effect on the choices that people and firms make.[12] In a neutral system, the EMTR would be zero for all types of investment, regardless of legal form, source of finance, or the rates of tax, interest or inflation. The intuition is straightforward: any tax on marginal investments (those that just break even) would make such investments unviable, and worthwhile projects would not happen. (Conversely, a negative EMTR means subsidising unviable investments.) But while the EMTR would ideally be zero, the EATR would still be positive: taxing profits in excess of what is needed to compensate investors (i.e. taxing non-marginal investments) does not discourage investment.

Figure 10.3 shows EMTRs for a range of different example investments under particular assumptions (see figure notes). Effective tax rates vary between assets, depending on how high capital allowances are relative to the rate at which the asset depreciates, and on the source of finance. Debt-financed investments are those financed by borrowing (e.g. a bank loan or issuing corporate bonds); equity-financed investments are those financed using shareholders' capital (which can be money retained in a company from past profits or money newly injected by shareholders). The UK's corporation tax base therefore distorts not only the level of investment but the choices over which assets to invest in, which legal form to use and how to finance investment. This variation will push against the efficient allocation of resources and will thereby ultimately reduce productivity, economic output and wages.

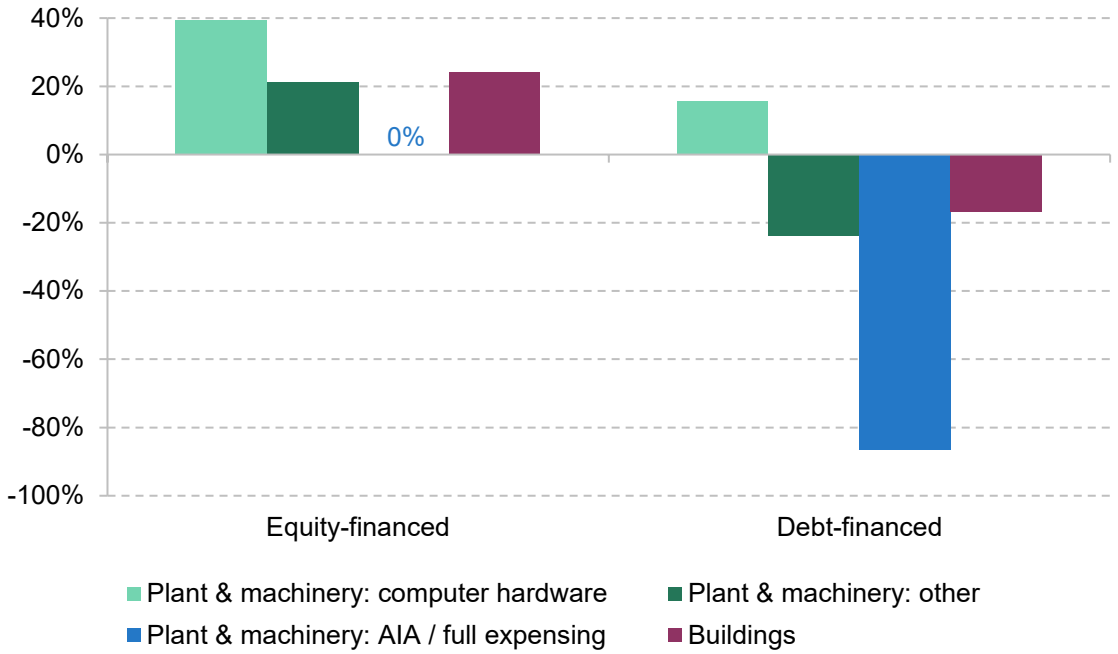
9 The cost of capital, a standard measure across economics, finance and accounting, is the pre-tax rate of return an investment must generate in order to provide, after tax, the rate of return that investors require.

10 For location decisions that do not involve real activity / investment – shifting paper profits between jurisdictions, for example by manipulating the 'transfer prices' that different parts of a multinational company charge each other for inputs or the interest rate on intra-company loans – it is the statutory tax rate (rather than the EMTR or EATR) that matters, along with any legal restrictions designed to prevent such behaviour.

11 See section 6.3 of Adam, Delestre and Nair (2022).

12 For further discussion of neutrality as a rule of thumb, including how it relates to the principles that underlie a well-designed tax system and what it means for other parts of the tax system, see Mirrlees et al. (2011, chapter 2). For a discussion of corporation tax design, see Mirrlees et al. (2011, chapters 17–19).

Figure 10.3. EMTRs on example investments and with different capital allowances



Note: Calculations assume a 5% real interest rate, a 2% rate of inflation, and depreciation rates of 37% for computer hardware, 12.6% for other plant and machinery, 17.5% for plant and machinery eligible for the AIA / full expensing, and 3.1% for buildings.

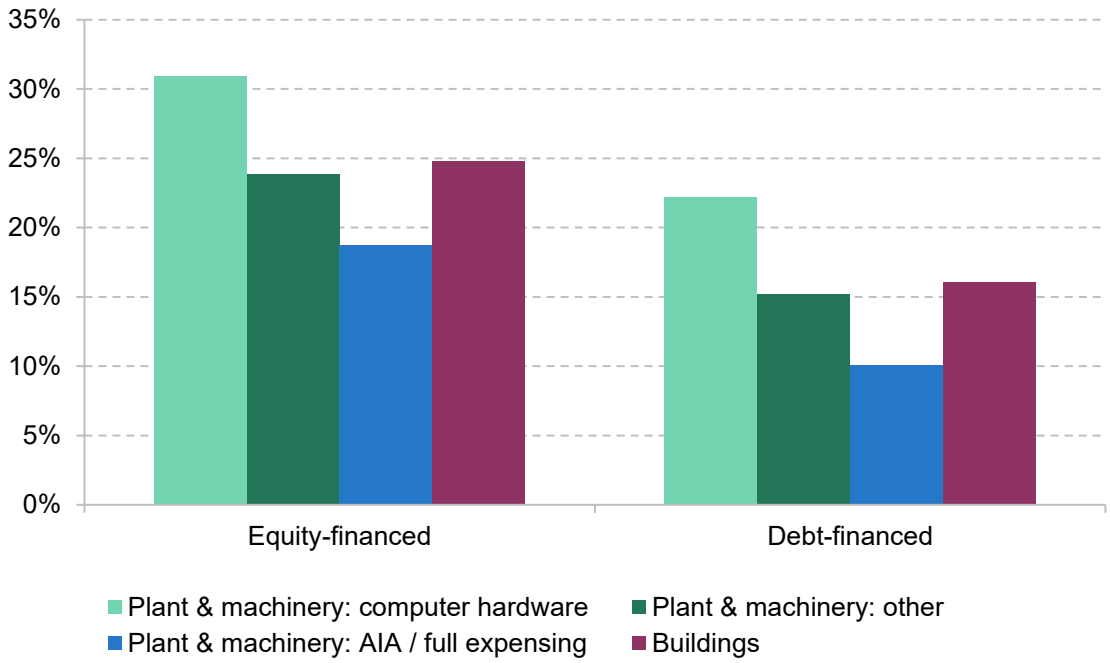
When equity-financed investments can be expensed (under the AIA or the temporary full-expensing policy), the **EMTR is zero, meaning the tax system neither encourages nor discourages investment in that asset**. The temporary full-expensing policy means that this treatment will apply to more investment (but not all).

For equity-financed investments outside the AIA or full expensing, the **EMTR is positive, meaning the tax system discourages investment**: some investments that would break even before tax will be loss-making after tax. The tax disincentive will remain for plant and machinery investment above the AIA done by the self-employed and for investment in buildings, for example. The EMTR depends on the capital allowances available and on the rate of depreciation of the assets. Investment incentives therefore vary across assets. We have shown the examples of computer hardware and of other plant and machinery that we assume depreciates less quickly.[13] In general, the tax system creates a bias towards investing in assets that depreciate less quickly relative to the capital allowances available for them. Since modern technology tends to depreciate more quickly than traditional machinery, this typically implies an anti-tech bias within each capital allowance category.

[13] Figure 10.3 is a summary for example investments. For illustration, we assume that computer hardware depreciates at 37% per year, while other plant and machinery depreciates at 12.6% per year (following OECD (2020)). But both qualify for the same 18%-a-year capital allowances, so effective tax rates on computers are higher than those on other machinery (and would be higher on some computer hardware than others, and so on).

Effective marginal tax rates are lower for debt-financed investment than for equity-financed investment. This is because debt interest payments can be deducted from revenues when calculating taxable profits, but there is no corresponding deduction for the implicit (opportunity) cost of equity finance: the minimum return that shareholders require to persuade them to provide equity capital. Indeed, **negative EMTRs for debt-financed investments mean that investment is *subsidised*** – unprofitable investments are made viable by the tax system.[14] The introduction of full expensing means that this undesirable subsidy has been extended to more investment. To give a broad sense of scale, overall around 30% of investment is financed by debt, though that varies widely across firms and sectors.[15]

Figure 10.4. EATRs on example investments and with different capital allowances



Note: Calculations assume a pre-tax real return of 20%, a 5% real interest rate, a 2% rate of inflation, and depreciation rates of 37% for computer hardware, 12.6% for other plant and machinery, 17.5% for plant and machinery eligible for the AIA / full expensing, and 3.1% for buildings.

Figure 10.4 shows EATRs on example investments that are assumed to make a return of 20%. Again, temporary full expensing extends the effective rates faced by investments that qualify for the AIA to all qualifying plant and machinery. This in turn will make the UK a more attractive location for this kind of investment. Full expensing does not change the EATR on investment

[14] For a worked example, see Adam and Miller (2021). Intuitively, a negative marginal tax rate (and therefore a subsidy) arises because firms are able to deduct more than the full cost of the investment. Full expensing means that a project that breaks even before tax will break even after tax. The interest deduction can effectively be used to reduce tax payments arising from *other* projects. This is how unprofitable projects can be made profitable: the associated interest deduction is valuable in allowing the firm to reduce overall taxable profits.

[15] De Mooij (2011) reviews a large range of studies and reports that the average debt-to-assets ratio of the meta-sample is 26%. This is sensitive to the exact definition of debt and varies significantly across firms.

(the majority) that is not main-rate plant and machinery. (Recall from above that plant and machinery is roughly 30% of investment (though this includes things such as long-life assets and cars which get different tax treatment); another 30% of investment is in buildings and structures and around 40% is in intellectual property products.)

Summary: how full expensing affects problems with the corporation tax base

The design of the UK's corporation tax base, in particular the various capital allowances and the treatment of finance costs, means that corporation tax is not neutral.[16] It distorts a range of decisions for no good reason, including:

- the **amount invested**;
- **asset choice**, including choices over whether to invest in plant & machinery, buildings, cars, training, intellectual property (IP) etc., as well as choices over how long to hold onto a particular asset and when to trade it for another;
- **source of finance** (i.e. whether to use (new or retained) equity or debt);
- **level of risk-taking**;[17]
- **legal form** (i.e. whether a business is incorporated or not), in combination with personal taxes.

Such distortions hinder the efficient allocation of resources and thereby ultimately reduce productivity, economic growth and wages.

The EMTR figures above are a partial reflection of some of these distortions – effective rates vary across asset types and financing source. Adam, Delestre and Nair (2022) additionally show that effective tax rates vary with the tax rate, inflation rates and interest rates. The inefficiencies created by the tax base are worse when tax rates are higher, interest rates are higher and inflation rates are higher. All three of these factors have increased substantially in recent years. As such, the distortions created by the tax base have got worse.

The temporary full-expensing policy lessens some of these distortions but worsens others:

[16] We do not discuss this here, but in designing corporation tax it is also important to consider the interactions with other parts of the tax system. These include the personal tax treatment of unincorporated businesses and company owners; Adam and Miller (2021) discuss this at length. For a discussion of corporation tax design in an international context, see Mirrlees (2011, chapter 18).

[17] The level of risk-taking is distorted because losses are not relieved symmetrically generously to how profits are taxed. In effect, the government takes a bigger share in the upside risk than in the downside.

- It **eliminates the disincentive for qualifying equity-financed investment –** that is, companies' investment in main-rate plant and machinery beyond the AIA. That is a good thing, stopping worthwhile investments being discouraged by tax.
- On the other hand, it **increases the subsidy for qualifying debt-financed investment**. That is a bad thing. The starting point for a well-designed system should be to ensure that tax does not affect investment decisions. There are some exceptions where subsidies may be warranted (e.g. if the investment creates value to society that is not internalised by the business doing the investment). But, more broadly, subsidies to investment are undesirable. It is possible to have too much investment. Notably, not all investments are profitable. By subsidising debt-financed investment, tax policy is encouraging investment that would be commercially unviable in the absence of tax, and full expensing exacerbates that.
- It **makes the UK a more attractive location** for qualifying investment.
- It does not change the treatment of investments that are already covered by the AIA, are in assets other than plant and machinery, or are done by unincorporated business.[18] But the fact that full expensing applies to some investments but not others means that it **increases the bias against non-qualifying investments** such as buildings and many types of intangible assets.
- The temporary nature of the policy **distorts the timing of investment**, encouraging companies to bring forward investments that would otherwise have happened after April 2026 so that they qualify for full expensing. It is hard to see why we would want to distort the timing of investment in that way at the moment.

If the policy expires in April 2026, barely three years after it was announced, that will limit its effect on investment. Many large investments are planned many years in advance (sometimes because they have to be assessed against regulations) and could not readily be delivered on that timescale unless they were going to happen anyway. This is a key problem for temporary corporation tax measures: even if a measure ends up being in place for many years, it will have very limited or no effect on large, complex investments if the measure is not expected to last that long. Overall, the OBR expects the full expensing policy 'to raise business investment in the three years the measure is in place by around 3 per cent when the scheme's effect is at its peak, equivalent to around £6 billion a year' (Office for Budget Responsibility, 2023, paragraph 3.12). However, it expects the resulting increase in the capital stock to be entirely temporary (ibid., paragraph 3.13 and box 2.2). This is partly because specific investments that are brought forward to qualify for full expensing would otherwise have happened later. In other cases, investment might be genuinely additional; but once the policy had expired, businesses would have no reason to want a higher capital stock in the long run than if the policy had never existed, so we would expect lower net investment in subsequent years (if only via depreciation of the additional assets

[18] Incentives to invest in special-rate plant and machinery, which benefits from an enhanced (50%) capital allowance (on top of the AIA) but not full expensing, are in between their pre-reform level and that of full expensing.

acquired in response to the policy) and the capital stock gradually to return to the level it would otherwise have been at.

10.3 Where next for the corporation tax base?

In the 2023 Spring Budget, the government said it 'intends to make this measure [full expensing] permanent when fiscal conditions allow'. Here we set out how (permanent) full expensing could help achieve a well-designed corporation tax base, but on its own it would exacerbate some problems while alleviating others.

We discuss some broad policy options for corporation tax base reform facing the Chancellor and the next government: extending the temporary measure; making the current full-expensing policy permanent; and making the policy permanent alongside broader reforms including extending full expensing to other investments (investment by unincorporated businesses and in other assets) and reforming the tax treatment of interest payments to remove the bias towards debt.

Full expensing as part of a well-designed tax base

It is important to evaluate policies in terms of whether they are moving towards a well-designed system. Too often, discussions of corporation tax policy – in policy papers and political debates – have not involved such first-principles thinking about what kind of corporation tax we want: they have been limited to tweaking isolated features of the system with no clear end goal beyond a general desire to increase business investment. A strategic approach is needed.

As we highlighted above, a key feature of a well-designed corporate tax base is a zero EMTR for all types of investment, regardless of the choice of asset, legal form, financing source, or the rates of tax, interest or inflation. (Justified exceptions are rare.)

There is more than one way to design a corporation tax base that achieves a zero EMTR for investments. One approach is known as a 'cash-flow corporation tax'.[19] Permanent full expensing (for all assets) is one part of this.

[19] We do not discuss the details, properties or merits of different approaches here. We would favour one of two options – a cash-flow corporation tax or an allowance for corporate equity (ACE) – which can remove distortions to the level, allocation and financing of domestic investment without the need to account accurately for inflation, depreciation or accrued capital gains. For discussions, see IFS Capital Taxes Group (1991), Auerbach, Devereux and Simpson (2010), Mirrlees et al. (2011) and Adam and Miller (2021).

Full expensing creates a zero EMTR at the firm level for equity-financed investment regardless of the tax rate (provided it is expected to remain constant over time) or the rates of inflation, interest or depreciation.[20] The intuition is that the company is taxed immediately on all receipts but can immediately deduct all outgoings at the same rate: with a 25% tax rate, the government covers 25% of the investment cost and takes 25% of the return, essentially becoming a compulsory silent partner in the project. If the revenue is worth more than the cost, 75% of the revenue will be worth more than 75% of the cost, so any project that is worthwhile before tax will be worthwhile after tax. That is a good thing.

To avoid distortions across asset type, full expensing (or an equivalent) would need to apply to all assets. And if all assets were subject to full expensing, there would be no need for any other capital allowances and no need to distinguish between capital and current spending. All investment costs would be deductible from profits immediately. This would remove a lot of complexity from the current system.

But full expensing in conjunction with the deduction for debt interest payments creates an undesirable subsidy for qualifying investment, the extent of which varies with rates of tax, interest and inflation. Implementing a well-designed corporation tax base therefore also requires an adjustment to the tax treatment of finance (we return to the options below).

Policy options

The corporation tax base needs reform. It creates many distortions, which are bigger at higher rates of tax, interest and inflation. There would be major benefits to moving to permanent full expensing of all assets, alongside reform to the treatment of debt interest. This points to the policy options for the government that we discuss below. We also discuss less radical options, including merely extending the current temporary full-expensing policy for an extra year or making it permanent with no other reform.

Whatever path the government chooses, there are two important factors to bear in mind.

First, **uncertainty over the path of policy will hold back investment. The government should set out a clear plan.**

Incentives to invest depend on expectations of future tax rules, not just on current ones. Major investments have long time horizons. If companies and investors expect the tax system to change, they will behave accordingly. And instability and uncertainty themselves will have an

[20] Note that we are discussing tax rates at the corporate level. Additional distortions are created by personal taxes. This is particularly an issue for owner-managed businesses. For a full discussion, see Adam and Miller (2021).

off-putting effect. Business groups consistently emphasise that certainty and stability in the tax system are as important as the competitiveness of the system itself.

This is particularly important in the current UK context given that the corporation tax regime has changed a lot in recent years. After years of tax rate reductions, an increase in the main rate from 19% to 25% was announced in March 2021, cancelled in September 2022 and then reinstated 21 days later, in October 2022. There has been constant change in the tax base, most notably as a result of repeated changes to the plans for the AIA. When Mr Kwarteng announced that the AIA would be set permanently at a level of £1 million, it was the ninth change to planned rates of the AIA since it was first introduced in the 2007 Budget. Alongside those changes were various other tax base changes, including, for example, to loss offsets. In 2021 there was the introduction of the so-called 'super-deduction' and now there is (perhaps temporary) full expensing. (And for the largest companies, this all sits alongside major changes to international aspects of corporation tax.) This constant change, in addition to the likelihood that the government will change at the next general election, does not inspire confidence that the current corporation tax base will be 'permanent'.

Ultimately, a period of stability would be welcome. If reform is planned, what is needed is a clear sense of direction and end goal that provide a basis on which companies can plan. There is precedent for that: the 2010 Corporate Tax Road Map was widely and rightly praised. But the plan needs clear details; the 2016 Business Tax Road Map was less good.

Second, **full expensing is far less expensive than it appears on the government's five-year 'scorecard'**.

The 2023 Budget 'scorecard' shows the temporary full-expensing policy costing £30 billion up front – roughly £10 billion for each of the three years it is in place. This gives a vastly inflated impression of the long-run cost of the policy.

The reason is straightforward: the effect of full expensing comes almost entirely through changing the timing of tax payments. As noted above, the investment spending that firms deduct immediately under full expensing would otherwise have been gradually deducted over a longer period. When firms deduct more investment up front they will not then be deducting that investment in future years (i.e. they will pay less tax in the year they invest but correspondingly more tax in later years). Full expensing merely allows firms to deduct their investment spending earlier, and so pay tax later, than they otherwise would. The up-front exchequer cost of full expensing is recouped later. This effect can start to be seen in the scorecard for the temporary full-expensing policy. Some of the cost of the policy starts to be recouped in the final year of the forecast (2027–28): bringing forward the timing of investment and the timing of capital allowances both mean lower capital allowance claims after the expiry of the temporary policy. If

the scorecard extended beyond five years, we would see that the temporary policy continued to *increase* government revenue in future years.[21]

To make this timing effect concrete, consider an example firm that invests £100. If this is subject to capital allowances of 18% a year (on a declining-balance basis), the firm will be able to deduct £18 in year one, £14.76 in year two, £12.10 in year three and so on until the investment has been written off. Under full expensing, the full £100 is offset against tax immediately. In both cases, the full investment cost is deducted for tax purposes. But under full expensing, allowances are higher in the first year (£100 rather than £18) and lower in year two (£0 rather than £14.76) and subsequently. There is a genuine cost to the exchequer and a benefit to firms of allowing costs to be deducted more quickly: tax paid earlier is more valuable to the government (and more costly to firms), because of the interest the money could earn (or save) in the meantime. For our example £100 investment, the value, in today's terms, of the stream of 18% allowances is around £75–90 (i.e. less than the £100 value of full expensing). The exact number depends on the interest rate used to discount future payments. Said more broadly, capital allowances of 18% a year (on a declining-balance basis) – i.e. the standard allowances that apply to plant and machinery – are worth around 75–90% as much as full expensing. It is the difference between 75–90% and 100% that reflects the increased generosity and therefore the 'true' cost of the full-expensing policy.[22]

We can look through the timing of government revenue and ask: **for each year's investment, how much more generous (in today's terms) is full expensing relative to the previous system?** Given the government's estimate of the initial revenue cost, the true cost of full expensing *for each year's investment* is more like **£1–3 billion** for each year the policy is in place (i.e. 75–90% of the initial cost is recouped). The official scorecard costing is not therefore wrong, in the sense that it reflects what will happen to measured government revenue in the short run, but, in this case, looking at the timing of government revenues is not a good guide to the true, long-run cost of the policy.

[21] The Office for Budget Responsibility (2023, paragraph 3.14) says of the policy: 'it actually *raises* receipts by £2.2 billion in 2027–28 (and for perhaps a further decade beyond the forecast horizon)'.

[22] We are illustrating the importance of accounting for the timing of government revenue, rather than setting out a full policy costing. In a full model of policy costs, one would also want to account for other factors that will affect the value of different allowances regimes. For example, there is a risk (for firms) that some future allowances will not be claimed if a business stops making profits against which to set them. In such cases, the value of the stream of allowances would be reduced. Conversely, some firms may not be able to make full use of a 100% up-front deduction if they do not make profits until some years after the investment, and in these cases full expensing is less valuable (the deduction creates a loss which is carried forward without interest to set against future profits, obviating the potential benefit of immediate deduction). We are also abstracting from the fact that a (small) part of the scorecard costing relates to providing a 50% immediate deduction (rather than just 6% annual declining-balance allowances) for special-rate plant and machinery, not the 100% immediate deduction (rather than 18% annual declining-balance allowances) for main-rate plant and machinery. However, the effect of these details is likely to be relatively minor, and the broad point – that most of the cost of more generous up-front deductions would be recouped in future years – would continue to hold.

If the full-expensing policy were made permanent, it would likewise be the case that most of the up-front cost (perhaps 75–90% in present-value terms, depending on the interest rate and the extent to which firms can make full use of available allowances) of giving full expensing for each year's investment would be recouped in future years. So while the OBR has said that making the full-expensing policy permanent 'could cost approaching £10 billion a year' (Office for Budget Responsibility, 2023, paragraphs 1.25 and 3.13), this is not a good guide to the cost of the policy. The true long-run cost would be far lower, at more like £1–3 billion in today's terms for each year's investment. If considering the path of government revenue, the loss of government revenue each year – on average about £10 billion for the first three years of the temporary policy, according to the government – would decline over time (quite sharply at first) as a share of national income.

The analysis above just addresses the mechanical revenue effects of the reform, ignoring any effect on investment. If the introduction of full expensing led to more productive investment in the UK, that would reduce the long-run exchequer cost, as the additional revenue generated by taxing the returns to additional investment would exceed the up-front cost of giving deductions for the investment spending. In this case, the long-run cost would be even lower. However, to the extent that it led to more unproductive (e.g. subsidised debt-financed) investment, the exchequer cost would be higher.

Extend the temporary full-expensing policy for another year

The government has stated that it would like to make the full-expensing policy permanent when fiscal conditions allow. The public finances will continue to be tight (see Chapter 3 of this Green Budget). And there is no doubt a range of other policies the government would like to enact 'when fiscal conditions allow'. Given this, and as an alternative to making the policy permanent, the government could initially extend the policy for another year, to expire in April 2027 rather than April 2026.

As with the current temporary full-expensing policy, the effect of the extension on investment would be limited. Some large investments are planned many years in advance and could not readily be brought forward to before April 2027. There would nevertheless be some additional investment in 2026–27 in response to the policy, but we would expect that that would largely be investment that would otherwise have happened later, with little long-run effect on the capital stock (for the same reasons as under the current temporary policy, discussed above). There is no obvious reason to want to distort the timing of investment in that way at the moment.

There is little value in the policy if it is temporary. Extending the policy is potentially valuable only if it is a pathway to its becoming permanent. This could be because an extension helps to signal that the government does not want the policy to expire and really does intend to make it

permanent; or a series of temporary extensions, leading people to think the policy would remain in place, might make it harder for the government to let it expire.

But that is not a good way to make policy. In our view, it would be more valuable for the government to make a clear statement about its goal for corporation tax and what a pathway towards that might look like.

Make the current full-expensing policy permanent

The government could make the current full-expensing policy permanent. As discussed above, such a policy would come with a large up-front 'scorecard' cost, but a much smaller long-run cost.

As set out above, there are trade-offs that come with the current full-expensing policy, even if it is made permanent. Plant and machinery is a major asset class and most investment is equity-financed, so having a simple, neutral and robust treatment of equity-financed investment in plant and machinery on a permanent basis would be valuable. It could also be part of a move towards a well-designed system (i.e. if it were accompanied or followed by further policy action). But the policy does not apply to all investments, so it increases some of the distortions across different assets and different legal forms of business. It also increases the subsidy for marginal debt-financed investment. And it is possible that making full expensing permanent could make meaningful reform *less* likely, because it means that the government is doing much of the giveaway now and leaving the takeaways needed for fuller reform to a later date. On balance, we think a move to permanent full expensing would be preferable to letting the temporary measure expire, but it is a finely balanced judgement.

Make the full-expensing policy permanent as part of broader reform to the tax base

As discussed above, a well-designed corporate tax base could be achieved by extending full expensing to all investment and making an appropriate adjustment to the treatment of borrowing. Here we summarise what those two broader reforms would look like. In practice, there is a spectrum of choices: the government could do some but not full reform; it could phase reforms in quickly or over a long period. Unless the corporate tax base is fully reformed, different combinations of policies would come with different trade-offs.

Extend full expensing to more or all investment

The current temporary full-expensing policy does not apply to all investment: it applies only to companies, not unincorporated businesses, and only to certain kinds of assets. As a result, some investments continue to be discouraged and there are distortions across asset types and legal forms of business.

The main asset classes that do not qualify for full expensing under the temporary policy are:

- **Structures and buildings**, including infrastructure, which is around 30% of total business investment. There has been significant change in this area over the years. Industrial buildings allowance was gradually withdrawn between 2008 and 2011, leaving no capital allowances at all for such investment for several years; a new structures and buildings allowance was introduced for new construction and repairs from 2018 at a rate of 2% and increased to 3% in 2020. It operates on a straight-line basis, meaning that firms can deduct 3% of the investment each year for 33⅓ years. Increasing this allowance from 3% to 100% would clearly be a large change.
- **Long-life plant and machinery**, including features integral to a building. Outside the AIA, this can normally be deducted at 6% a year on a declining-balance basis, though during the three-year period when ordinary plant and machinery can be fully expensed (and the two-year period of the 'super-deduction' which preceded it), the 6% rate has been temporarily increased to 50%.
- **Cars used for business**. The purchase of new electric (and other zero-emission) cars can already be fully expensed, but other cars cannot; the rate of capital allowances depends on the emissions category. This is not a well-targeted policy to reduce greenhouse gas emissions from cars, as it provides an incentive for new business cars but not other cars, it makes only a crude distinction between different broad categories of car, and it provides no incentive to drive cars less once they have been bought. It would be better to treat all business cars like other assets, regardless of emissions category, and instead reduce emissions from all cars by increasing fuel duties or by making vehicle excise duty in the year a new car is purchased more strongly linked to the car's emissions.[23] For example, all business cars could be subject to the AIA, or to full expensing. However, since the government plans to ban the sale of new petrol and diesel cars from 2035, their tax treatment is becoming increasingly moot.
- **Training for the self-employed**. Businesses can deduct the cost of training for their employees, but the self-employed cannot deduct the cost of their own training unless it is to update existing skills rather than learn new ones. Undertaking training for work/business purposes ought in principle to be tax-deductible, although some care is needed to ensure that, for example, training in new skills is genuinely for business purposes rather than a hobby – just as caution is already needed for many other purchases that have potential private as well as business uses. Chapter 9 discusses this issue further.
- **Intangible assets**. This is now the single largest category of investment. It includes assets such as intellectual property, software licences, brand assets, customer lists and goodwill. Its treatment is complicated and several different rates of capital allowances (or none at all)

[23] For more on this, see the analogous discussion of company car taxation in section 9.7 of Adam and Stroud (2019).

may be available, depending on the details. The tax treatment of intangibles could be greatly simplified, and the simplest treatment of all would be to allow all of them to be fully expensed.

Extending full expensing to all investment would mean applying it to all of these asset types, and to both incorporated and unincorporated businesses. The government could also go part of the way there by:

- Applying full expensing to a wider range of investment. This could be done by, for example: extending full expensing of main-rate plant and machinery to unincorporated businesses (this would be relatively cheap given that investment by such businesses is typically low and therefore already covered by the AIA); increasing the level of the AIA (but keeping a cap); or extending full expensing (or the AIA) to more asset classes.
- Making allowances outside full expensing more generous (like the 50% first-year allowance currently in place for special-rate assets, but on a permanent basis).

More generous capital allowances are not necessarily better, for two key reasons.

First, if full expensing is extended to some assets but not others, it would remove the distortions across assets that are eligible for full expensing but increase the bias against those assets 'left behind'. Short of applying full expensing across the board, one important criterion should be to ensure more similar treatment across assets that are closer substitutes, such as between cars and vans or between different forms of intangible assets.[24]

Second, on their own, any of the options for making capital allowances more generous would increase the subsidy to debt-financed investment as well as reducing the penalty for equity-financed investment, and would therefore come with a trade-off. The only way to escape that trade-off is to address the tax treatment of finance directly.

Reform the tax treatment of debt interest

A major problem with the current corporation tax base is the bias in favour of debt financing and the subsidy for most debt-financed investment. The subsidy would be increased by any increase in the generosity of capital allowances beyond the rate at which the asset depreciates, including any extension of full expensing.

[24] For example, the fact that the 'special rate' of allowances for fixtures integral to a building and other long-life plant and machinery is in between that for ordinary plant and machinery and that for buildings – and was set at an intermediate rate when both the previous super-deduction and the current full-expensing policy were introduced – presumably reflects the fact that special-rate assets share similarities with both of those other asset classes.

Independently of whether full expensing is made permanent, the bias towards debt finance is a problem that should be addressed. Not all firms use debt despite the tax preference; the incentive (and ability) to use debt varies across firms for a variety of reasons. As noted above, on average around 30% of investment is financed by debt. But for most small, owner-managed firms, debt is zero. And for some firms, notably those involved with leveraged buyouts (when one company buys another using debt), and in some industries, such as utilities, the use of debt finance can be very high. There is empirical evidence that corporate tax leads firms to use more debt (De Mooij (2011) reviews). It is hard to quantify the economic costs of having a subsidy for debt finance, not least because not only does it distort individual firms' financing and investment decisions but it may create a risk to financial stability. There are various channels through which high debt can cause problems for macroeconomic stability. For example, firms with higher levels of debt are more likely to fail when there is an adverse shock, such as a fall in demand that reduces cash flows and makes it harder to service a (nominal) debt (that becomes larger relative to the reduced value of assets). Through supply chains, one firm's default can spill over to other firms. This is a key reason why excessive debt is concerning, even though it is not the major source of financing for most firms. There is empirical evidence that the build-up of debt during expansion periods tends to make subsequent recessions more likely, deeper and longer lasting (Jordà, Schularick and Taylor, 2013). Excessive leverage of financial institutions is a particular concern because bank failure creates contagion effects in the financial system and can have big adverse effects on the real economy. In the financial sector, tax policy is at direct odds with regulatory efforts to require financial institutions to hold more capital (i.e. more equity). A recent IMF report discusses these issues in detail. It concludes that 'corporate debt bias, induced by deductibility of interest but not equity costs for the corporate income tax, remains a key [macroeconomic] stability concern' and advises that 'addressing debt bias should feature prominently in countries' tax reform plans in the coming years' (International Monetary Fund, 2016).[25]

There are different options for how borrowing could be treated in order to remove the distortion in favour of debt (rather than equity) financing and ensure that full expensing did not create a subsidy for economically unviable investments. These are summarised in Box 10.1.

If the UK is moving towards a cash-flow treatment of investment (by adopting full expensing in more cases), it would seem most natural to adopt a cash-flow treatment of borrowing (option (b) in the box). This would mean keeping the current interest deduction but also adding a deduction for repayments of principal and taxing all principal borrowed. But an alternative would be to modify the interest deduction so that only interest payments in excess of a normal rate of return on the outstanding loan would be deductible (option (c)). A hybrid – simply abolishing the

[25] See also International Monetary Fund (2009), which includes a summary of evidence showing that the debt bias in corporation tax significantly increases debt–equity ratios.

deduction for interest payments (and taxation of interest income) for most firms (option (a)) but with a special regime for banks and other financial firms – might also be an option.

Box 10.1. Options for the tax treatment of business borrowing

There are three possible ways to treat business borrowing that ensure that marginal (debt-financed) investments are not taxed and that tax does not affect financing decisions:

(a) Borrowing could be ignored completely. In practice, this amounts to ending the current tax-deductibility of interest payments (and the taxation of the corresponding interest income in the hands of lenders, typically banks or bondholders).
(b) Borrowing could be taxed on a cash-flow basis. The amount borrowed would be taxable and repayments of principal as well as interest would be deductible (while, symmetrically, amounts lent would be deductible and receipts of principal and interest would be taxable).
(c) Interest payments in excess of a 'normal' rate of return on the outstanding debt – that is, in excess of the interest rate on a risk-free asset such as a government bond – could be deductible (while recipients of excess interest payments would be taxed).

If all borrowing were done at the normal rate of interest, (a) and (c) would be identical, and (b) would be equivalent in present-value terms: the present value of cash inflows and outflows would be the same, netting out at zero.

In reality, loans are usually provided at above-normal interest rates; banks typically lend at higher interest rates than they offer on deposits. This 'interest rate spread' represents an implicit charge for financial services, through which banks cover their costs and make profits. In the hands of the bank, this charge for financial services will (rightly) be taxed as profits (after deducting any costs, such as staff wages, incurred in providing the services). In the hands of a business that takes out a loan, the charge for financial services is a business cost and, like other business costs, should be tax-deductible. An interest rate above the normal return may also reflect that a loan is deemed risky, with a chance it would never be paid back. This risk premium should also be deducted at the business level (as a cost of doing business). For these reasons, option (b) or (c) is in principle preferable to option (a) for business loans.

Option (a) does have the advantage of being simpler, however. One option would be to pursue option (a) for most businesses but have a special regime for banks and other financial firms to ensure that profits from providing financial services to households and non-taxpayers were taxed.

In practice, transitional issues and the question of how to treat transactions where one party is outside the UK would be crucial in choosing among these options.

We do not discuss the pros and cons of each option in full here; nor do we discuss potential ways that the system could transition towards a different treatment of debt. We note that most countries have a bias towards debt finance, but there are a few that have moved to a different system of corporation tax (involving an 'allowance for corporate equity' or ACE) which largely eliminates the debt bias.[26] There are also many countries (including the UK) that operate 'thin-capitalisation rules', which restrict interest deductibility beyond a certain amount (usually such that they only affect the largest multinational companies) and thereby affect corporate debt ratios. The International Monetary Fund (2016) discusses this and other options for limiting or removing the corporate debt bias.

10.4 Conclusion

The corporation tax base needs reform. It embeds major unwelcome distortions, and these ultimately drag on productivity, economic output and wages. The recent policy focus has tended to be on capital allowances, but the treatment of financing costs is also critical. The IMF has highlighted that the 'corporate debt bias, induced by deductibility of interest but not equity costs for the corporate income tax, remains a key [macroeconomic] stability concern'.

Achieving an ideal corporate tax base – for example, through full expensing for all investment and a reform to the treatment of debt interest – would entail major change. It need not happen overnight. There are lots of options for moving towards a well-designed tax base. Making the full-expensing policy permanent could be one part of this. There are also various ways to make capital allowances more generous for other assets, and different options for dealing with debt.

The government has taken a step towards major reform. But if full expensing turns out to be temporary, it will have little or no long-run effect on the UK capital stock. It is not clear what the point of the policy is in that case.

The government needs a plan: a clear statement of what the end goal is. That is always important in policy, but especially for investment because of the long time horizons involved, and especially now because there has been so much change, including a sharp reversal of the direction of travel from the past four decades.

On balance, we think there is a case for making the current full-expensing policy permanent, but this judgement is far from clear-cut, and doing this reform on its own would involve trade-offs. One reason it is difficult to judge whether it would be better if the policy were made permanent

[26] An ACE can achieve neutrality with any schedule of capital allowances; with full expensing, it is equivalent to option (c) in the box. For non-technical overviews and discussions of the ACE approach, see Bond (2000), Mirrlees et al. (2011, chapters 17 and 18), Devereux and Vella (2020) and Adam and Miller (2021).

is the political economy of tax changes. Fuller reform would include other giveaways (extending full expensing to other assets and to unincorporated businesses) but also takeaways (in relation to the treatment of debt). A danger is that the government is tempted to take the easy path of tax giveaways while postponing the difficult part, reforming the treatment of finance – thereby making it even more difficult than it would be as part of a balanced reform. Such a path might make it harder rather than easier to attain a good long-run goal.

References

Adam, S., 2019. Cancelling further cut to corporation tax rate leaves revenue the same as before the 2008 crisis. IFS, Comment, https://ifs.org.uk/articles/cancelling-further-cut-corporation-tax-rate-leaves-revenue-same-2008-crisis.

Adam, S., Delestre, I. and Nair, V., 2022. Corporation tax and investment. In C. Emmerson, P. Johnson and B. Zaranko (eds), *The IFS Green Budget: October 2022*. https://ifs.org.uk/publications/corporation-tax-and-investment.

Adam, S. and Miller, H., 2021. Taxing work and investment across legal forms: pathways to well-designed taxes. IFS Report 184, https://ifs.org.uk/publications/taxing-work-and-investment-across-legal-forms-pathways-well-designed-taxes.

Adam, S. and Stroud, R., 2019. A road map for motoring taxation. In C. Emmerson, C. Farquharson and P. Johnson (eds), *The IFS Green Budget: October 2019*. https://ifs.org.uk/books/road-map-motoring-taxation.

Auerbach, A., Devereux, M. and Simpson, H., 2010. Taxing corporate income. In J. Mirrlees, S. Adam, T. Besley, R. Blundell, S. Bond, R. Chote, M. Gammie, P. Johnson, G. Myles and J. Poterba (eds), *Dimensions of Tax Design: The Mirrlees Review*, Oxford University Press for the Institute for Fiscal Studies, https://ifs.org.uk/sites/default/files/output_url_files/mirrlees_dimensions.pdf.

Bond, S., 2000. Levelling up or levelling down? Some reflections on the ACE and CBIT proposals, and the future of the corporate tax base. In S. Cnossen (ed.), *Taxing Capital Income in the European Union: Issues and Options for Reform*, Oxford University Press, https://global.oup.com/academic/product/taxing-capital-income-in-the-european-union-9780198297833?cc=gb&lang=en&.

De Mooij, R.A., 2011. The tax elasticity of corporate debt: a synthesis of size and variations. International Monetary Fund, Working Paper 2011/095, https://www.imf.org/en/Publications/WP/Issues/2016/12/31/The-Tax-Elasticity-of-Corporate-Debt-A-Synthesis-of-Size-and-Variations-24816.

Devereux, M. and Griffith, R., 1998. Taxes and the location of production: evidence from a panel of US multinationals. *Journal of Public Economics*, 68(3), 335–67, https://doi.org/10.1016/S0047-2727(98)00014-0.

Devereux, M. and Griffith, R., 2003. Evaluating tax policy for location decisions. *International Tax and Public Finance*, 10, 107–26, https://doi.org/10.1023/A:1023364421914.

Devereux, M. P. and Vella, J., 2020. Reflections on the ACE after three decades. In G. Loutzenhiser and R. de la Feria (eds), *The Dynamics of Taxation: Essays in Honour of Judith Freedman*, Hart Publishing, https://www.bloomsbury.com/uk/dynamics-of-taxation-9781509929092/.

Hall, R.E. and Jorgenson, D.W., 1967. Tax policy and investment behavior. *American Economic Review*, 57(3), 391–414, https://www.jstor.org/stable/1812110.

HM Treasury, 2022. Potential reforms to UK's capital allowance regime – inviting views. Policy Paper, https://www.gov.uk/government/publications/potential-reforms-to-uks-capital-allowance-regime-inviting-views/potential-reforms-to-uks-capital-allowance-regime-inviting-views.

IFS Capital Taxes Group, 1991. Equity for companies: a corporation tax for the 1990s. IFS, Report, https://ifs.org.uk/publications/equity-companies-corporation-tax-1990s.

International Monetary Fund, 2009. Debt bias and other distortions: crisis-related issues in tax policy. https://www.imf.org/external/np/pp/eng/2009/061209.pdf.

International Monetary Fund, 2016. Tax policy, leverage and macroeconomic stability. IMF Policy Paper 16/151, https://www.imf.org/external/np/pp/eng/2016/100716.pdf.

Jordà, Ò., Schularick, M. and Taylor, A.M., 2013. When credit bites back. *Journal of Money, Credit and Banking*, 45, Supp. 2, 3–28, https://www.jstor.org/stable/42920043.

King, M. and Fullerton, D., 1984. The theoretical framework. In M. King and D. Fullerton (eds), *The Taxation of Income from Capital: A Comparative Study of the United States, the United Kingdom, Sweden, and Germany*, University of Chicago Press. https://www.nber.org/system/files/chapters/c11495/c11495.pdf.

Mirrlees, J., Adam, S., Besley, T., Blundell, R., Bond, S., Chote, R., Gammie, M., Johnson, P., Myles, G. and Poterba, J., 2011. *Tax by Design: The Mirrlees Review*, Oxford University Press, https://ifs.org.uk/books/tax-design.

OECD, 2020. Corporate tax statistics – corporate effective tax rates: explanatory annex. https://www.oecd.org/tax/tax-policy/explanatory-annex-corporate-effective-tax-rates.pdf.

Office for Budget Responsibility, 2023. Economic and fiscal outlook – March 2023. https://obr.uk/efo/economic-and-fiscal-outlook-march-2023/.

Office for National Statistics, 2022. Business investment by asset. https://www.ons.gov.uk/economy/grossdomesticproductgdp/datasets/businessinvestmentbyasset.

Sørensen, P.B. (ed.), 2004. *Measuring the Tax Burden on Capital and Labor*, MIT Press, https://mitpress.mit.edu/9780262536509/measuring-the-tax-burden-on-capital-and-labor/.

Abbreviations

ACE	allowance for corporate equity
AI	artificial intelligence
AIA	annual investment allowance
AIM	London Stock Exchange's market for small and medium size growth companies
AME	annually managed expenditure
AR	Agricultural Relief
BCC	British Chambers of Commerce
BEA	Bureau of Economic Analysis
BEIS	Department for Business, Energy and Industrial Strategy
BICS	Business Insights and Conditions Survey
BLS	Bureau of Labor Statistics
bn	billion
BoE	Bank of England
bp(s)	basis point(s)
BR	Business Relief
CBI	Confederation of British Industry
CFO	Chief Financial Officer
CGT	capital gains tax
CHF	Swiss francs
CO_2	carbon dioxide
CPI	Consumer Prices Index
CPIH	Consumer Prices Index including owner-occupiers' housing costs
DB	defined benefit
DC	defined contribution

DELs	departmental expenditure limits
DLA	disability living allowance
DWP	Department for Work and Pensions
E&W	England and Wales
EA	Euro Area
EATR	effective average tax rate
ECB	European Central Bank
ELQ	equivalent and lower qualification
ELSA	English Longitudinal Study of Ageing
EM	emerging market
EMTR	effective marginal tax rate
ESA	European System of Accounts
ESRC	Economic and Social Research Council
ESS	Employer Skills Survey
EU	European Union
F	forecast
FCA	Financial Conduct Authority
FE	further education
Fed	Federal Reserve
FTSE	Financial Times Stock Exchange
FX	foreign exchange
G7	Group of Seven countries: Canada, France, Germany, Italy, Japan, UK, US
GB	Green Budget
GCSE	General Certificate of Secondary Education
GDP	gross domestic product
GFC	Great Financial Crisis
GFCF	gross fixed capital formation
GFSM	Government Finance Statistics Manual
GOS	gross operating surplus
GVA	gross value added
H	half

HE	higher education
HHUB	Henry Hub
HHWI	Hamburgisches WeltWirtschaftsInstitut (Hamburg Institute of International Economics)
HICP	Harmonised Index of Consumer Prices
HM	Her/His Majesty's
HMRC	Her/His Majesty's Revenue and Customs
HNC	Higher National Certificate
HND	Higher National Diploma
ICAEW	Institute of Chartered Accountants in England and Wales
ICT	information and communication technology
IfATE	Institute for Apprenticeships and Technical Education
IFS	Institute for Fiscal Studies
IMF	International Monetary Fund
IP	intellectual property
IS	investment and savings
ISA	Individual Savings Account
ISM	Institute for Supply Management
JKM	Japan Korea Marker
JSA	jobseeker's allowance
K	thousand
kWh	kilowatt-hour
LFS	Labour Force Survey
LH	left-hand
LHA	local housing allowance
LHS	left-hand side
LLE	Lifelong Learning Entitlement
LNG	liquefied natural gas
MIC	Japanese Ministry of Internal Affairs and Communications
MIDAS	mixed data sampling
MLAR	Mortgage Lending and Administration Return
MPC	Monetary Policy Committee

MWh	megawatt-hour
n.a.	not applicable
N/A	not available
NAIRU	non-accelerating inflation rate of unemployment
NAWRU	non-accelerating wage rate of unemployment
NBER	National Bureau of Economic Research
NEIG	non-energy industrial goods
NHS	National Health Service
NICs	National Insurance contributions
NIESR	National Institute of Economic and Social Research
NQF	National Qualifications Framework
NRB	nil-rate band
NVQ	National Vocational Qualification
OBR	Office for Budget Responsibility
OECD	Organisation for Economic Cooperation and Development
ONS	Office for National Statistics
PAYE	Pay-As-You-Earn
PIP	personal independence payment
PMI	Purchasing Managers' Index
PNFC	private non-financial corporate/corporation
PPI	producer price index
ppt	percentage point(s)
PSCR	public sector current receipts
PSNB	public sector net borrowing
PSND	public sector net debt
PSNFL	public sector net financial liabilities
PSNW	public sector net worth
Q	quarter
QE	quantitative easing
QQ	quarter on quarter
R&D	research and development

RH	right-hand
RHS	right-hand side
RICS	Royal Institution of Chartered Surveyors
RNRB	residence nil-rate band
RPI	Retail Prices Index
SIC	Standard Industrial Classification
SMEs	small and medium enterprises
SNB	Swiss National Bank
TME	total managed expenditure
TTF	Title Transfer Facility
UC	universal credit
UEL	upper earnings limit
UK	United Kingdom
UNCTAD	United Nations Conference on Trade and Development
US	United States
USD	US dollars
VAT	value added tax
vs	versus
V/U	vacancies/unemployment
WAS	Wealth and Assets Survey
WCA	work capability assessment
YY	year on year