

The background features a series of glowing, curved lines in shades of purple, pink, and blue, creating a sense of motion and depth. The lines are most prominent in the lower half of the image.

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# Foreword

## If it wasn't for bad luck....

The British economy is suffering from a sequence of bleak shocks in its capacity to produce goods and services. These started with the financial crisis, which although international, particularly affected an economy focused on financial services. It continued with the management of the exit from the European Union, which festered and ran like a sore through economic policy. The impact of the pandemic was amplified in an economy so heavily concentrated on the hospitality sector. And as a trading nation reliant on energy and intermediate goods imports, the supply chain disruptions and Russian invasion of Ukraine further exposed the economy to a deterioration in its supply capacity. This fall in productive capacity has left us with one of two options, we accept that on average as a nation we are poorer or, to maintain our level of income, we must increase the hours we work. To be clear these are not the direct concern of monetary policy, which must simply decide following these inflation shocks at what rate to disinflate.

These shocks have meant that much of what we buy, which is priced in overseas currency, has gone up sharply in price. The terms of our overseas trade have turned against us and this means that we have to give up more of our production for imports. The sharp increase in traded prices has meant, as with most major central banks, the Bank of England has raised its policy rate rapidly. This is to ensure that the supply shocks do not lead to chronic inflationary pressure. The increase in interest rates has two obvious objectives: first to ensure that once the temporary inflation has abated wage and price setters condition their future rounds of decision making on inflation expectations that are consistent with price stability and second to ensure that demand is brought down in line with a lower level of capacity than was previously thought to be the case.

There is though another aspect of the Bank's strategy that is often overlooked. While it is probably true that an earlier response from the Bank might have shaved a percentage point or two off the peak in inflation, the pattern would have been much the same. It is also the case that had a considerably stronger interest rate response been adopted in late 2021 and 2022, it might have stamped on inflation more forcefully, but only by threatening a surge in unemployment and financial disruption in, as we now know, rather febrile markets. The substantive risk of a subsequent deflation was very real. And, following so soon from the tragedy of COVID, that would not have been the right response. The regime change from easy money to normalisation and a shrinkage in the central bank balance sheet, although long heralded, represents a regime shift that ought to be handled with great care. And that is where policy at the other side of town comes in.

Double digit inflation is not an outcome anyone wanted, and it is imposing genuine hardship on many families towards the bottom of the income distribution. We have consistently maintained however that it is up to the Treasury, not the Bank of England, to offset the distributional consequences by offering more targeted relief. Our own calculations, published around the time of the Spring Budget, suggested that the inflation tax – in inflating the public purse – has created more than enough fiscal space to support poorer families without generating further excess demand. There is another more subtle point that has been overlooked. The government, by stating a target for halving inflation this year, has inadvertently provided an unhelpful focal point for inflation at some five per cent by the year end. The previous central case was for something well below that and nearer the inflation target. People are now planning at five per cent rather than four per cent or less and this is making inflation more persistent. The government, having set the Bank of England a target for inflation along with operational independence, should not involve itself in forecasting inflation or attempt to take credit for an imminent fall in inflation. Recall that the 'control of inflation' job, which involves forecasting and deploying instruments of the open market and open mouth kind, was handed over to the Bank in May 1997. This year the government has itself made the Bank's job harder by saying it will get inflation down. The chairman, having picked the manager, should not try to take any last-minute penalties. The question then is: if he does take that penalty, is it a case of bad luck when he misses?

**Jagjit S. Chadha, Director, NIESR**  
May 2023

# National Institute UK Economic Outlook – Spring 2023

- Despite recent positive news, we still think GDP growth will remain close to zero in 2023 and that GDP will grow only slowly in 2024.
- UK inflation remains in double-digit territory and core inflation remains high. Inflation is forecast to fall in 2023, but not as quickly as the external consensus forecasts. We do not expect it to return to target until late 2025. This creates a dilemma for the Monetary Policy Committee.
- Real personal disposable income saw a very slight improvement in the last quarter of 2022, the first time in four quarters. But, this is likely to be short lived, and we now forecast real household personal disposable income to fall in 2023. This will be contingent on the rate at which inflation slows and the level of pay increases.
- Despite higher interest rates, there has been a significant increase in business and consumer confidence across a range of survey and sentiment indicators. This may seem surprising against a backdrop of increasing interest rates and high inflation. However, it may be better to characterise this reported increase in confidence as a collective sense amongst business and consumers that, perhaps, the worst of the energy price shock is behind us.
- The labour supply shortage and the chronic investment deficit remain. We feel the budget measures were a step in the right direction but insufficient to deliver the needed structural changes to encourage a return of stronger productivity growth to the UK economy.

**Table 1.1** Summary of the forecast (percentage change unless otherwise stated)

	2019	2020	2021	2022	2023	2024	2025	2026	2027
GDP	1.6	-11.0	7.6	4.1	0.3	0.6	1.1	1.0	1.3
Per capita GDP	1.1	-11.4	7.2	3.5	0.2	0.1	0.7	0.7	0.9
CPI Inflation	1.8	0.8	2.6	9.1	7.4	3.9	1.9	2.5	2.5
RPIX Inflation	2.5	1.7	4.2	11.5	8.7	4.3	2.5	3.2	3.2
RPDI	2.1	-1.3	1.3	-1.4	-0.7	-1.1	-0.2	0.6	1.2
Unemployment, %	3.8	4.6	4.5	3.7	4.0	4.6	4.6	4.7	4.7
Bank Rate, %	0.8	0.2	0.1	1.5	4.3	4.3	3.9	3.6	3.3
Long Rates, %	0.9	0.3	0.8	2.4	3.4	3.4	3.3	3.3	3.2
Effective exchange rate	-0.5	0.5	4.7	-1.8	-0.9	0.2	-0.3	-0.4	-0.1
Current account as % of GDP	-2.9	-3.1	-1.5	-3.8	-5.9	-3.3	-2.0	-1.3	-0.3
Net borrowing as % of GDP	2.5	15.0	5.7	6.5	3.5	1.8	1.2	0.7	-0.1
Net debt as % of GDP	80.7	96.0	98.9	97.9	98.6	97.6	94.0	89.9	86.2

Note: Numbers reported are yearly averages except for net borrowing, which is reported for the full fiscal year, and net debt, which is reported for the end of the fiscal year.

# 1. The macroeconomic outlook for the United Kingdom

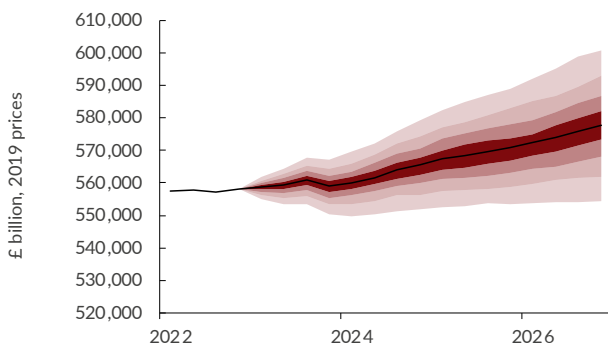
By Paula Bejarano Carbo, Hailey Low, Leaza McSorley, Stephen Millard, Urvish Patel and Kemar Whyte<sup>1</sup>

## Economic background and forecast summary

With King Charles crowned last weekend, it feels like a new era is on the horizon for the United Kingdom. Indeed, in the period between our Winter and Spring Outlooks the UK economic outlook has improved a little, with a recession in 2023 now looking less likely. But the UK economy is still facing the problems of sluggish growth and high inflation and while the Chancellor's Spring Budget of 15 March contained a number of policies that represented steps in the right direction, there was not the fundamental shift in the direction of public investment that will be needed if UK productivity growth is going to return to anything like pre global financial crisis rates.

Nonetheless, there is some reason for optimism. As noted in our April GDP Tracker (Bejarano Carbo and Nowinska 2023), we now expect GDP to have grown by 0.1 per cent in the first quarter of 2023 and we expect GDP to grow a further 0.3 per cent in the second quarter of 2023. Looking further ahead, we expect sluggish growth in 2023 and 2024 of 0.3 and 0.6 per cent, respectively. At least to begin with, the third Carolean era is not going to herald a new dawn of high output growth.

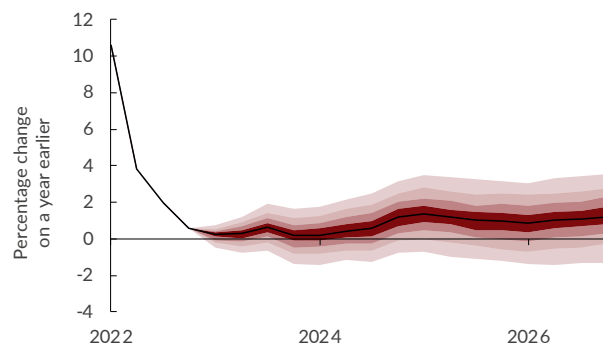
Figure 1.1 GDP



Note: The shades within the fan chart represent a 10 per cent chance that GDP will lie within the boundary of that shade. There is a 20 per cent chance that GDP will lie outside the shaded area of the fan.

Source: NiGEM database, NIESR forecast and NiGEM stochastic simulations.

Figure 1.2 GDP growth



Note: The shades within the fan chart represent a 10 per cent chance that GDP growth will lie within the boundary of that shade. There is a 20 per cent chance that GDP growth will lie outside the shaded area of the fan.

Source: NiGEM database, NIESR forecast and NiGEM stochastic simulations.

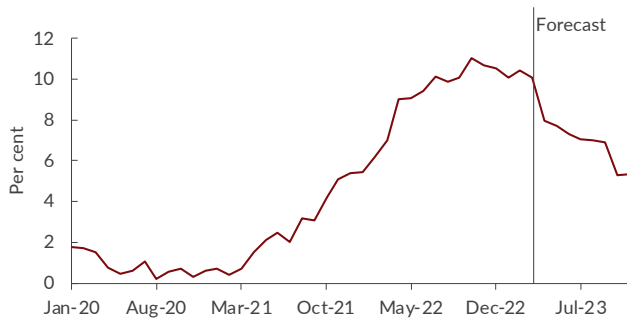
While we are expecting the United Kingdom to avoid a 'technical recession' in 2023, the anaemic growth and ongoing 'cost-of-living' crisis, together with the possibility of rising unemployment, will lead many households to feel like they are 'experiencing' a recession. NIESR continues to make the point that we should not be tied to the 'two negative quarters of GDP growth' definition when thinking about recessionary conditions but, rather, should be employing a broader definition along the lines suggested by, eg, the National Bureau of Economic Research (NBER) Business Cycle Dating Committee and the UK Business Cycle Dating Committee (Broadberry et al., 2022), who define a recession as a significant decline in economic activity spread across the economy, lasting more than a few months.

<sup>1</sup> The authors are grateful to Bart van Ark, Barry Naisbitt and Jagjit Chadha for helpful comments, and to Joanna Nowinska for preparing the charts and the database underlying the forecast. The forecast was completed on 21 April 2023 and is based on financial markets data up to and including 17 April; more recent data is incorporated in the text. Unless otherwise specified, the source of all data reported in tables and figures is the NiGEM database and NIESR forecast baseline. All questions and comments related to the forecast and its underlying assumptions should be addressed to Kemar Whyte (enquiries@niesr.ac.uk).

Twelve-month Consumer Price Index (CPI) inflation fell to 10.1 per cent in March from 10.4 per cent in February, but is being driven by food price inflation, which rose to 19.1 per cent, the highest in over 45 years. Headline inflation remains in double digits – the seventh consecutive month for which this has been the case – and the rate is still among the highest in four decades. Inflation also remains markedly above the Bank of England’s inflation target of 2 per cent and this is the 20th consecutive month for which this has been the case. As discussed in our April 2023 CPI Tracker (Bejarano Carbo, 2023a), there are worrying signs that inflation is becoming more persistent. In March, CPI inflation excluding food, alcoholic beverages and tobacco remained flat at 6.2 per cent, while our trimmed-mean measure of CPI inflation rose to 9.9 per cent, the highest it has ever been.

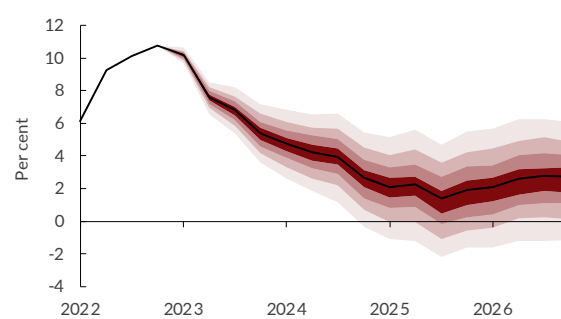
As a result of the high and persistent core inflation, and the likely higher wage inflation resulting, in part, from the current wave of industrial unrest, we continue to expect inflation to remain persistently above target. Specifically, we expect CPI inflation to fall only to 5.4 per cent by the end of 2023 and not reach the Bank of England’s target of 2 per cent until the third quarter of 2025 (figures 1.3 and 1.4). Although interest rate hikes may almost have finished, if core inflation remains high, interest rates may have to remain at their peak for a longer period than we and the markets currently anticipate, with implications for government debt interest costs and the debt to GDP ratio.

**Figure 1.3** Annual consumer price index inflation



Source: ONS, NIESR calculations.

**Figure 1.4** CPI inflation fan chart



Note: The shades within the fan chart represent a 10 per cent chance that inflation will lie within the boundary of that shade. There is a 20 per cent chance that inflation will lie outside the shaded area of the fan.

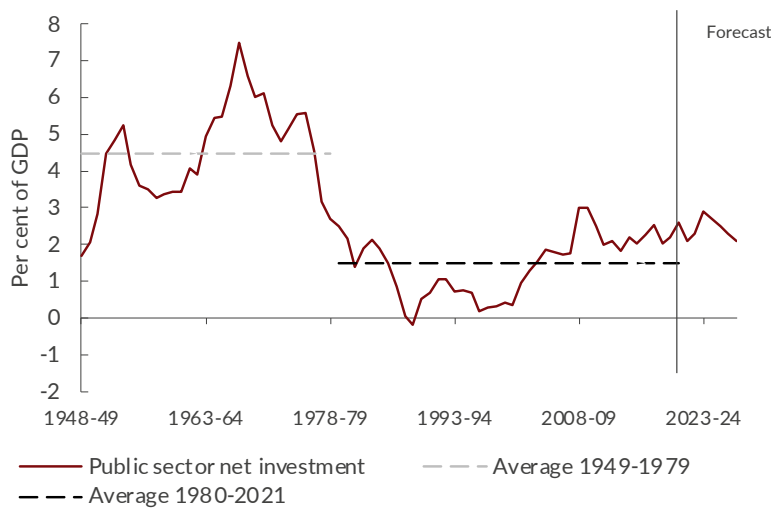
Source: NiGEM database, NIESR forecast and NiGEM stochastic simulations.

## Policy

### *Fiscal policy*

On 15 March, the Chancellor of the Exchequer delivered his Spring Budget, which was notably more focused on sparking growth in what appears to be a flatlining economy, rather than restoring stability as had been the case in November. That said, both budgets have been similar in that they offered calculated compromises to most stakeholders and left the Chancellor prey to arbitrary fiscal rules.

Broadly, the Chancellor employed a range of policies to tackle two main structural problems - the labour supply shortage and the chronic investment deficit – alongside other spending and tax decisions, including extending energy support measures and the freeze on fuel duty. It is just as relevant to note some key fundamental problems that were left entirely unaddressed by the budget, such as public sector pay (or lack thereof), productivity stagnation and insufficient public investment, which has averaged only around 2 per cent of GDP since 1979 as opposed to around 5 per cent of GDP between 1948 and 1979 (Figure 1.5). Such omissions are disappointing in their own right, but also leave question marks around how the government intends to deal with their long-term consequences, such as a possible outflow of skilled public-sector workers, a lowering of potential output and a further deterioration in British living standards.

**Figure 1.5** Public-sector net investment

Source: OBR, ONS, NIESR calculations.

Addressing the United Kingdom's labour supply shortage was one of the main pillars of the Chancellor's budget, with reforms to childcare, pensions, disability and universal credit benefits, and skills centres all utilised to this end. The most significant reform is that to childcare, extending the 30 hours-a-week of free childcare allowance for working parents of nine-month to two-year olds. The Office for Budget Responsibility (OBR) forecast that this new extension of the British welfare state will account for an increase in employment of 60,000 by 2027-28, boosting potential output significantly (OBR, 2023). Indeed, the OBR calculates that the entire labour supply package is set to boost GDP by 0.2 per cent in 2027-28, representing the greatest upward revision to potential output they have made since 2010. That said, it is important to note that these policies will take effect with a lag, only coming significantly into effect in 2025-26.

In his Budget, the Chancellor also sought to boost business investment, which is necessary if UK productivity growth is ever going to recover. The main reform was the introduction of temporary 100 per cent capital allowances to cover the costs of qualifying business investment in plant and machinery undertaken between 2023-24 and 2025-26. This policy should boost output in the near term, contributing 0.1 percentage point to GDP growth in 2023-24 and around 0.2 percentage points in the following year, tapering off as the labour supply package measures kick-in in 2025-26. In this sense, this supply-side policy can be interpreted as a stopgap rather than a serious attempt at resolving the United Kingdom's chronic investment deficit. In fact, given that the policy has no effect on the optimal capital stock in the long run, the OBR estimates that business investment in 2027-28 will be 4 per cent lower than it otherwise would be.

## The State of Public Finances

Higher-than-expected GDP data, falling energy prices and a comparatively less aggressive monetary tightening cycle, among other factors, meant that the government finances were in much better shape at the time of the Spring Budget relative to the Autumn Statement. Indeed, OBR (2023) suggested that Public Sector Net Borrowing (PSNB) was £24.7 billion lower in 2022-2023 than they had expected in November. Since the Budget, the near-term outlook has continued to improve with GDP expected to grow by 0.1 per cent in the first quarter of this year rather than contract as expected by the OBR in March (Bejarano Carbo and Nowinska, 2023). Against that, however, the rise in interest rates over the past year has greatly increased government debt-interest spending, acting to worsen the public finances.

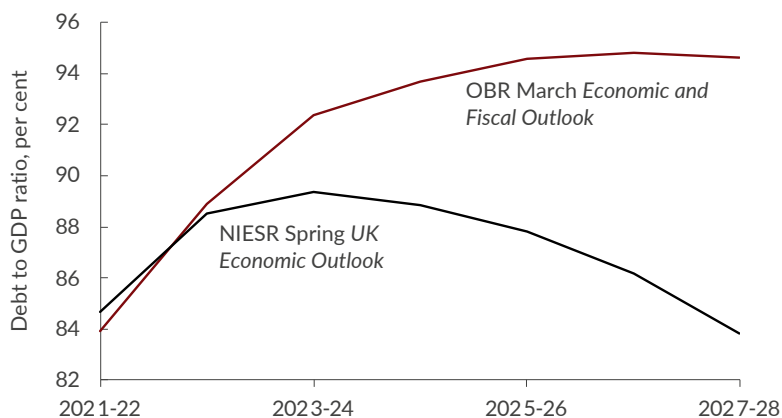
The Chancellor's fiscal targets, as established in his November 2022 Autumn Statement, require: 1) Public-Sector Net Debt (PSND) excluding the Bank of England to fall by 2027-28; and 2) PSNB to be less than 3 per cent of GDP in five years' time. Given the measures announced in the Spring Budget, as well as data revisions, the OBR's March forecast expects Chancellor Hunt to be meeting these targets by margins of £6.5 billion and £39.2 billion, respectively. It is notable that the margin by which the Chancellor is expected to meet his first target is the narrowest since the OBR was established in 2010, falling from its previous margin of £9.2 billion in the November forecast.



This fall reflects factors such as a flatter outlook for economic growth in the medium-term and increased spending from the budget policy measures. Evidently, a narrow margin threatens the viability of delivering planned policies in the case of unexpected spending needs or revenue decreases. On the other hand, the margin by which the Chancellor is meeting the second target has more than doubled since November, reflecting lower borrowing and an upwards revision to nominal GDP.

However, as we stressed in our Pre-Budget and Budget analyses (Bejarano Carbo et al., 2023, and Cornforth et al., 2023), these forecasts are based on particular assumptions about output growth and inflation over the coming five years. In particular, the OBR assumes nominal GDP growth of 17.8 per cent over this period; this compares with NIESR's forecast of 21.9 per cent growth in nominal GDP between now and 2027-28. As a result, we think that the Chancellor has more fiscal space than calculated by the OBR. More specifically, we expect PSNB to fall towards zero over the coming five years, leaving the Chancellor meeting his deficit target by £91.8 billion, and we expect PSND to start falling relative to GDP in 2024-25 (figure 1.6).

**Figure 1.6** Public sector net debt to GDP ratio



Source: NiGEM Database, NIESR forecast.

The longer-term outlook for the state of public finances, however, is rather bleak. The ONS's first estimate of public sector net worth (PSNW), which is the widest measure of the public balance sheet, suggests that PSNW deteriorated from a deficit of £531.1 billion at the end of March 2022 to a £605.8 billion deficit at the end of March 2023. Maintaining or allowing this deficit to worsen is likely unsustainable and will place an immense debt burden on younger generations, who are already consuming less than their predecessors did at similar ages as real wages have stagnated and wealth becomes increasingly concentrated in the hands of the very well-off and older generations (McCarthy et al. 2022). Further efforts by the ONS to improve understanding of public sector finances, as well as data on generational wealth transfers across the income distribution, will be helpful to researchers looking to propose much-needed changes to the existing fiscal structure.

Finally, we should note that NIESR has long argued that fiscal policy should concentrate on improving the welfare of UK households and should not be set purely to satisfy such targets which are, essentially, arbitrary. This argument is laid out in detail in Chadha et al. (2021). At the same time, it has been argued – in particular by Bacon and Eltis (1978, 1996) – that the government should not absorb too much of the economy's resources, otherwise not enough will be left for productivity-enhancing sectors such as manufacturing. This argument is examined in Box A in this Outlook.

## Monetary policy

### UK inflation still in double-digit territory...

Twelve-month CPI inflation fell to 10.1 per cent in March after having unexpectedly increased to 10.4 per cent in February. Despite the welcome fall, annual inflation remains among the highest seen in four decades, above the Bank of England's 2 per cent target for the twentieth consecutive month, and, most concerning, in double-digit territory for a seventh consecutive month.

## Box A: Is the UK public sector too large?

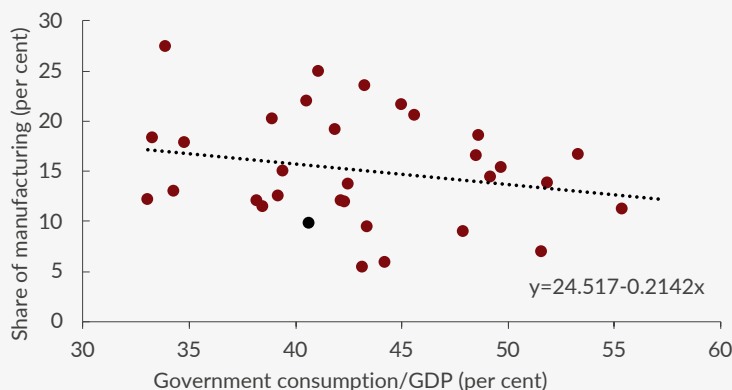
By Paul Mortimer-Lee

There is much debate about why Britain's economic performance in the last decade and a half has been so lacklustre. With slow growth, high inflation, strikes, and a high share of taxation in GDP, there is a strong aroma of the 1970s about present-day Britain. In this box, we look back at one of the reasons advanced for Britain's economic decline since the 1970s, which is that the public sector is too large. We find that figures for the share of public consumption in GDP do not support this argument. Nor at first sight do employment figures. However, the headline figure for public-sector jobs reported by the Office for National Statistics (ONS) drastically understates how many people depend on the public sector for employment due to contracting out and other organizational changes.

The main advocates of an excessive expansion of the public sector being behind Britain's relative economic malaise, which included the decline in the share of manufacturing in the economy, were Robert Bacon and Walter Eltis (1978, 1996). They argued that there were too few producers in the UK economy. This, they claimed, was due to an increasing share of non-marketed output in the total, i.e., that the size of the public sector had crowded out private-sector activity. Given manufacturing's continued slide – it accounts for only 9 per cent of output today, compared with double that in 1990 and 25 per cent in the mid- 1970s – it is worth re-examining Bacon and Eltis's arguments.

One of the objections to the Bacon and Eltis hypothesis is that other countries that have higher government current consumption as a share of GDP have not experienced the same problems with manufacturing as the United Kingdom. International data show that there is an inverse relationship between the share of government consumption and manufacturing – on average, a 1 percentage point higher share of government spending is associated with a 0.2 percentage point lower manufacturing share in GDP. While the relationship is weak, it does support the Bacon and Eltis hypothesis. However, the United Kingdom (in black) has a lower share of manufacturing than all but five countries (Luxembourg, Greece, Norway, Australia, and Iceland), and the share is significantly lower than in the other major industrial countries. The United Kingdom's actual share of manufacturing is six percentage points below what the average relationship in figure A1 would suggest. If we examine Italy, the share of government consumption in GDP is almost eight percentage points higher than the United Kingdom's, and yet the share of manufacturing in Italian GDP was 16.6 per cent in 2019, compared with 9.7 per cent in the United Kingdom.

**Figure A1** Government expenditure and manufacturing shares of GDP



Source: OECD.

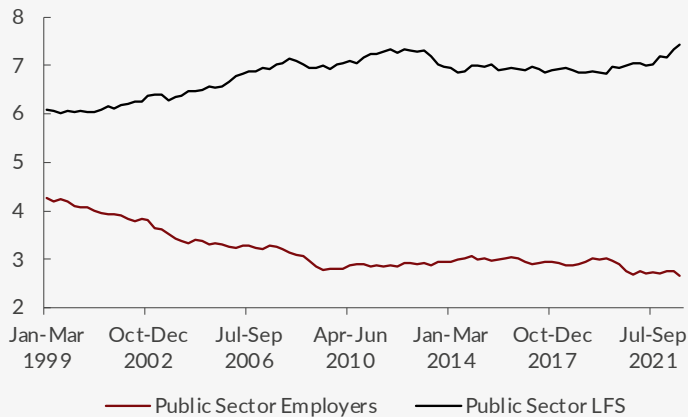
The share in GDP of government current consumption in volume terms shows a slight reduction since 1970 (figure 2), running counter to perceptions in some quarters of a rising share of the public sector. However, the stability of government consumption in GDP contrasts sharply with numbers that show a significant increase in the share of the population working in public administration, education and health and social services.

**Figure A2** Share of government consumption in GDP (per cent)

Source: ONS.

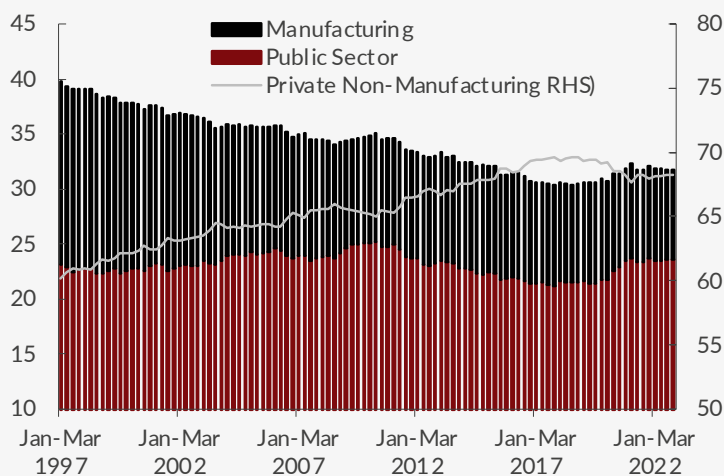
Bacon and Eltis believed that the increased size of the public sector in the 1960s and 1970s had diverted employment towards the public sector and away from manufacturing. Since the mid-1990s, the share of manufacturing in employment has halved. Measuring the employment of the public sector is more difficult than one might think, due to developments such as contracting out and the Private Finance Initiative (PFI). However, over the same period, according to the Labour Force Survey (LFS), public-sector employment has risen only slightly, from 23.1 per cent of total employment in early 1997 to 23.6 per cent at end-2022. Public-sector employment rose as a share of total employment after the Great Financial Crisis because private-sector employment is more cyclical than employment in public sector jobs. As the recovery progressed, the share of the public sector fell again.

Note that these figures are taken from the LFS and reflect employees' assessment of where they work. These employees include workers who are directly employed by private-sector firms but who work in public-sector establishments, for example, cleaners in the National Health Service (NHS). The number of workers employed directly by the public sector (based on employer returns which the ONS assess is a more reliable basis than the LFS-based data) is much smaller, currently 5.8 million, about two million less than recorded in the LFS. The former series shows a decline in the early 2000s (figure 3) reflecting an increase in outsourcing (Sasse et al., 2019), including under the PFI, affecting institutions including hospitals and prisons, as well as the expansion of social care, most of which is in the private sector. We believe that the LFS figures give a more accurate picture of employment tied to the public sector. However, Bacon and Eltis emphasized the importance of 'non-market' employment in the public sector, implicitly assuming that these employees were not available to work in manufacturing, presumably because their remuneration (including non-pecuniary advantages) exceeded that in the private sector. Outsourcing means that the number of employees in 'non-market' activities has declined, with the outsourced employees now in the market segment. This reduction in non-market employment runs against the Bacon and Eltis hypothesis that public sector expansion explains manufacturing's decline.

**Figure A3** Alternative measures of public sector employment (millions)

Source: ONS.

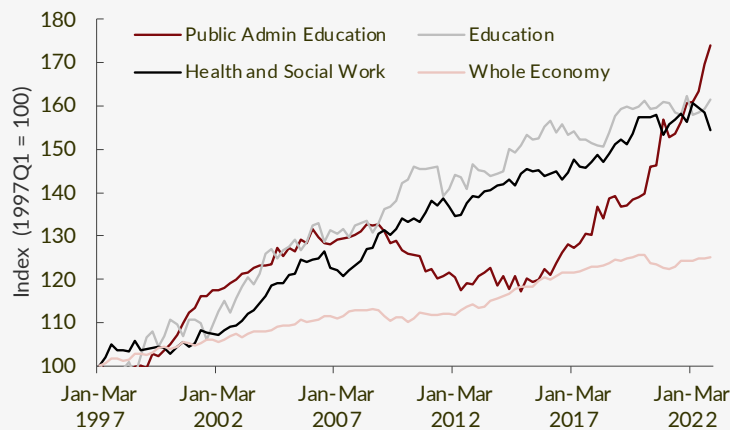
Public-sector employment on the narrow definition was 20 per cent of total employment in 1999, and 17.5 per cent in 2022. On the LFS measure, the increase from 1997 to 2022 was less than a percentage point to 23.5 per cent (figure 4). Thus, these figures suggest that the shrinkage in manufacturing employment was due to the expansion of the non-manufacturing private sector rather than due to an expansion of the public sector.

**Figure A4** UK shares in total employment (per cent)

Source: ONS.

However, there remain serious doubts about the public-sector employment data. For example, if we compare the workforce jobs data<sup>1</sup> with the data in the ONS publication EMP13, we see that there are big differences in the employment numbers in sectors we would identify as public sector. The data reported for the third quarter of 2022 for public administration, defence, and compulsory social security is 1.6 million in the first and 2.6 million in the second. Education is shown as 3.1 million in the first and 3.4 million in the second. If we take the LFS measure of jobs in public administration, defence and social security and add it to the number in education and human health and social work, the total is 10.6 million jobs in the fourth quarter of 2022, compared with 7.8 million reported as in the public sector in the same publication (EMP13).

1 JOBS02 <https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/datasets/workforcejobsbyindustryjobs02>

**Figure A5** Employment trends

Source: ONS.

Figure 5 shows that employment in sectors we would typically think of as ‘public sector’ has increased significantly more than in the economy as a whole. The rise in public administration numbers in recent years is particularly striking.

The differences between the three different measures of public employment can be summed up as follows:

1. Employer returns record about 5.7 million people working in the public sector (these are direct employees)
2. The LFS records 7.6 million people regarding themselves as working in the public sector (this includes direct employees and some of those employed producing public-sector output)
3. About 10.6 million people work in industries that are traditionally regarded as in the public sector

It can be argued that the third measure is a better reflection than the other two of the reality of the use of labour resources in the economy. It is not who employs the labour that matters for resource allocation, but what that labour produces. If labour produces services for the public sector, it should be classified as public-sector (e.g., self-employed speech and language therapists in schools, workers in PFI establishments, employees in care homes).

Taking this broad definition of public employment indicates an increase in the number of employees producing public output of four million from 1997 to 2022 (i.e., a rise of 60 per cent, with the number in public administration rising by almost three-quarters). Over this period, the share in total jobs rose from an average of a quarter in 1997 to a third in 2022. With the total number of employees rising by 6.5 million over the period, employment in public-sector-dominated sectors accounted for 60 per cent of this. It seems extremely difficult to argue that an expansion of 4 million jobs in industries supplying public-sector output did not affect the availability of labour to the manufacturing sector, which in 1997 had just over 4 million employees. In 1997, there were three times as many employees in manufacturing as in public administration. Now, the numbers are level pegging. In 1997, the manufacturing workforce was more than double that in education. Now, it is only 60 per cent as large as that in education. A shift in manufacturing’s share of the labour force would have been expected because the rate of productivity growth in manufacturing is higher than in services like education or public administration. However, the size of the shift is significantly larger than the productivity differential would suggest.

## Conclusion

There is international evidence that supports the Bacon and Eltis argument that a higher share of public spending is associated with a lower share of manufacturing in total value added. However, the relationship is weak, and the United Kingdom has a far lower share of manufacturing – six percentage points lower

– than the average relationship suggests. A major explanation for manufacturing's lower share is that the United Kingdom has a comparative advantage in services, including financial services. A UK comparative advantage exists when the opportunity cost of an activity in the United Kingdom is lower than abroad. What this means is that the United Kingdom producing manufactures would cost more in foregone services output than it would cost abroad. Hence both the United Kingdom and foreign countries would be better off if the United Kingdom specialized relatively more in producing services and other countries concentrated more on manufactures. According to this explanation, the United Kingdom's shrinking share of manufacturing would be due to an increase in its comparative advantage in services. This might come from an increase in UK service productivity relative to abroad, or it might be because the United Kingdom has been losing its manufacturing edge – either development could give rise to the same reduction in share.

Regarding the question of whether the public sector excessively absorbs labour and leaves too little labour supply for manufacturing, the assessment is muddled by there being competing ways of measuring public-sector employment, each of which has drawbacks. However, there has been a massive expansion of employment in sectors that are usually regarded as within the public sector, which has absorbed almost two thirds of the increase in the labour force over the last quarter century. This will have severely limited labour supply to manufacturing. This also means that the United Kingdom has increasingly directed its labour supply towards sectors with low rates of productivity growth and away from manufacturing where productivity growth is higher.

### References

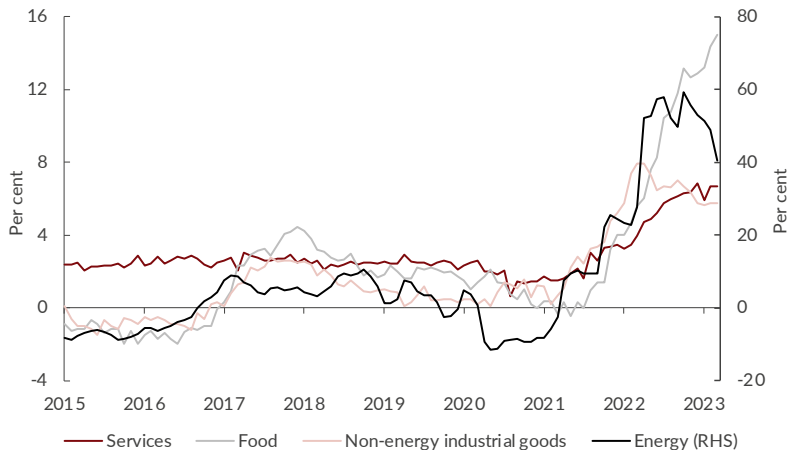
Bacon, R., & Eltis, W. (1978). *Britain's economic problem: Too few producers*. Springer.

Bacon, R., & Eltis, W. (1996). *Britain's Economic Problem Revisited*. Springer.

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Sustained high inflation is eroding UK living standards, disproportionately so for lower-income households who spend a greater proportion of their disposable incomes on food and energy. As seen in Figure 1.7, these necessities have seen the greatest price rises within the CPI basket over the last two years. In March, annual food inflation rose to a 45 year high of 19.1 per cent; this is particularly worrying given that, unlike energy, there is no government support to help low-income households offset this cost. Encouragingly, energy inflation has seen a steep decrease in the last few months, reaching a twelve-month low of 40.5 per cent in May and is expected to fall further.

**Figure 1.7** Annual inflation rates for elements of the consumer price index



Source: ONS.

Note: 'Food' encompasses food, alcoholic beverages, and tobacco.

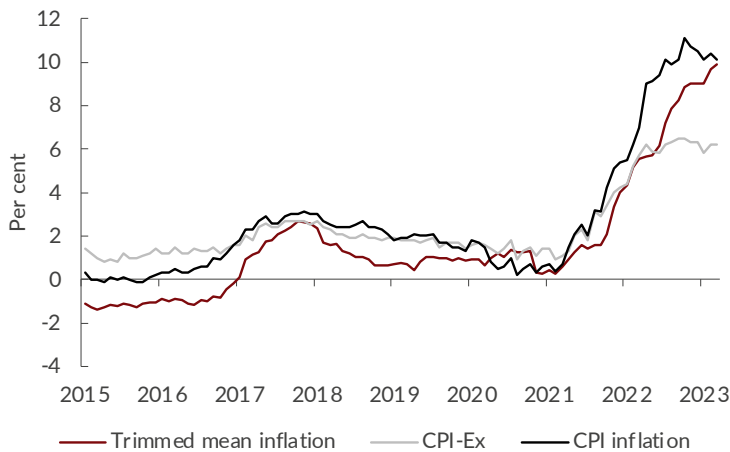
### ... exhibiting extraordinary persistence...

The external inflationary shock to food and energy prices caused by the Russian invasion of Ukraine has stoked far more persistent and broad-based underlying inflationary pressures in the UK than previously expected. Figure 1.8 compares headline CPI inflation with two measures of underlying inflation: CPI inflation excluding energy, food, alcoholic beverages, and tobacco – commonly referred to as core CPI inflation; and NIESR's measure of trimmed-mean CPI inflation, which excludes the 5 per cent largest price changes on either end of the CPI distribution.

It is clear from figure 1.8 that all three measures of inflation are extraordinarily elevated compared to recent years, and in the case of headline and core CPI inflation, seem to have flatlined at a high rate over the last year. A high rate of underlying inflation suggests that headline CPI inflation will exhibit persistence in 2023, ie, fall more gradually than it otherwise would. We now compare the evolution of distinct measures of underlying inflation, as each gives us a different insight that can help inform our understanding of overall inflation dynamics.

NIESR's measure of trimmed-mean inflation has risen steadily over the past year, reaching a series high of 9.9 per cent in March. This measure suggests that, even though the original inflationary impulse at the start of 2022 could be seen as a product of volatile price movements, by 2023 it is a rate which broadly reflects the average weighted annual price change among items in the CPI basket.

Over the past year, core CPI has fluctuated around 6 per cent, unsurprisingly mirroring the trend in services and non-energy industrial goods inflation illustrated in figure 1.7. In a similar vein, the annual growth rate in the GDP deflator – which is a good measure of domestically-generated inflation – was 5.4 per cent in 2022. These measures indicate that, as a result of the original inflation shock, inflationary pressures have permeated indirectly (sometimes referred to as 'second-round inflation effects') to other areas of the economy. Broadly speaking, it is useful to think of these measure as picking up the inflation that the MPC wants to, and can, return to the 2 per cent target through use of its conventional monetary instrument. That they are averaging 6 per cent is a concern in that it implies a possible need to tighten monetary policy by more than the MPC have already.

**Figure 1.8** Consumer price index headline and core inflation (annual per cent)

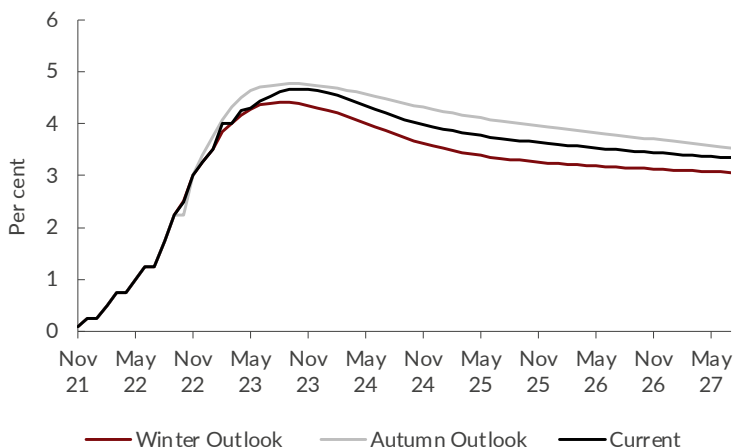
Source: ONS, NIESR calculations.

Note: CPI-Ex refers to CPI inflation excluding energy, food, alcoholic beverages, and tobacco. Trimmed mean inflation is measured by excluding 5 per cent of the highest and lowest price changes in the CPI calculation.

### ... and we have yet to see the effect of upcoming pay settlements on the headline rate

Average weekly earnings, excluding bonuses, grew by 6.6 per cent in the three months to February - the largest recorded growth in regular pay outside of the pandemic period. Though there are signs that the recessionary outlook is beginning to cool the labour market, as signalled for instance by a fall in the vacancy to unemployment ratio (as discussed in the 'Current Economic Conditions' section, below), the labour market remains tight, contributing to exceptional wage inflation. We expect earnings to continue growing strongly through the first half of 2023, given the latest movements in traditional indicators of earnings growth such as inflation expectations and labour market tightness, and strong earnings momentum. Indeed, the Bank of England's latest Decision Maker's Panel (DMP) survey recorded an expected average unit cost growth of 7 per cent throughout 2023. With public sector pay review bodies' recommendations set to be implemented by government in the near term, ongoing industrial action, and the latest services inflation figure of 6.6 per cent (which tracks private-sector wage growth quite well), there seems to be little downside risk to the outlook for wage growth in 2023.

This dynamic will not only increase the headline inflation rate, as labour costs are inevitably passed onto consumer prices, but will also threaten to further embed persistence in inflation dynamics through expectations.

**Figure 1.9** Bank Rate Forecast

Source: Bank of England, NiGEM.

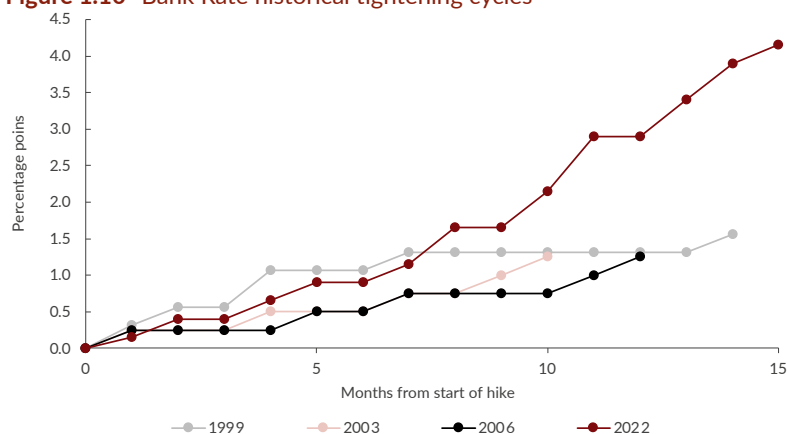


## The Bank of England continues its (unprecedented) aggressive tightening cycle...

Against a backdrop of double-digit inflation, the Monetary Policy Committee raised interest rates for an eleventh consecutive time in March, bringing the Bank Rate to 4.25 per cent. Figure 1.9 graphs the market-implied Overnight Index Swaps (OIS) forward yield curve on 17 April. At that time, markets expected the bank rate to peak at 4.50 per cent in July and this peak to be sustained into the New Year.

As shown in Figure 1.10 below, since the Bank of England gained independence in 1997, the current tightening cycle is the most aggressive in terms of pace and magnitude of rate hikes. With rates rising by as much and as quickly as we have experienced in this past year, vulnerabilities in financial markets – particularly widespread illiquidity – have been exposed; the latest sign of this is the financial market turbulence that began with the Silicon Valley Bank closure in the United States. The subsequent contagion to other American and international banks altered market expectations regarding the path of interest rates, with markets originally expecting an end to rate rises by July. However, with inflation remaining persistently elevated, markets have since shifted their expectations, foreseeing further rate rises. Indeed, on the day of the ONS's latest inflation data release, markets reacted by raising expectations from a 4.5 per cent peak to a 5 per cent peak. Though our forecast closed at a time when markets expected rates to peak at 4.5 per cent, we believe it is possible that the MPC will opt for a further rise to 4.75 per cent, conditional on future inflation developments.

**Figure 1.10** Bank Rate historical tightening cycles



Source: Datastream.

## ...while a second realm of normalisation, quantitative tightening, takes place in the background

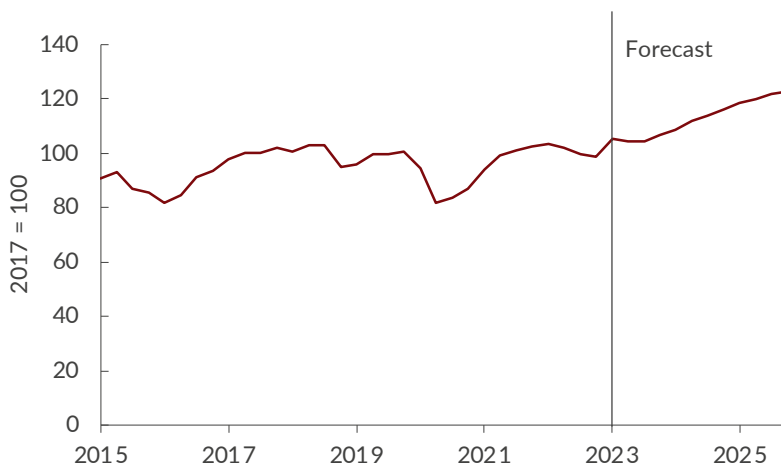
Since October, the Bank of England has engaged in balance sheet normalisation, also known as quantitative tightening (QT). Though this central bank policy has perhaps been comparatively overlooked – given the intensity of the ongoing inflation shock and various spells of financial market turbulence – now that QT is well underway it is important to take stock of what we have learnt so far. NIESR hosted a workshop on ‘QT and Reserves’ on 16 February. Attendees agreed that, given the way QT has unfolded, a first lesson is that it should not be seen as a policy tool in its own right but rather as a ‘reverse’ quantitative easing (QE) – or a means of decommissioning QE. Much like nuclear decommissioning, QT is likely to be complex and costly. It was noted that September’s market turbulence required the Bank to delay the start of its QT programme, acting to teach us that the Bank should allow for flexibility in QT sales – for instance, by tying sales to market sentiment – rather than committing to selling a fixed quantity of bonds each month. There is a clear innate tension between the speed, costs and risks of execution of QT. On the one hand, the direct costs are likely to be lower if QT is passive, ie, bonds are left to mature or ‘taper,’ though the risks of holding such an unbalanced portfolio – consisting of very short liabilities (central bank reserves) and very long maturity assets (gilts) – for such a long time become increasingly untenable. Conversely, an active aggressive sell-off of bond holdings would reduce their riskiness but will lead the Asset Purchase Facility (APF) to incur serious losses. The APF made significant profits on QE but, since QT has started, the APF has begun to make losses. Since the Treasury has indemnified the APF, it has, and will continue to, cover any such losses. However, it is possible that the public will perceive this as taxpayers bailing out the Bank of England, which would be embarrassing. If APF profits had been kept in a contained facility, rather than used to improve the government’s fiscal position, current APF losses would not be so badly perceived nor could they be so easily weaponised.

## The forecast in detail

### Financial markets

Since the extreme turbulence in the UK financial markets of September and October 2022, resulting from the large swings in fiscal policy associated with changes in Prime Minister and Chancellor, the UK financial markets have become much more settled. Ten-year benchmark bond yields have fluctuated within a relatively small band between 3.01 per cent and 3.67 per cent. UK equity prices (as measured by the FTSE all share index) rose from a 2022 low of 3712 on 12 October 2022 to 4375 on 20 February 2023, since when it has fallen slightly to 4268, as of April 25. We don't expect to see much in the way of renewed optimism in 2023, with the index rising only slightly. We then expect a stronger rise over the following three years (figure 1.11).

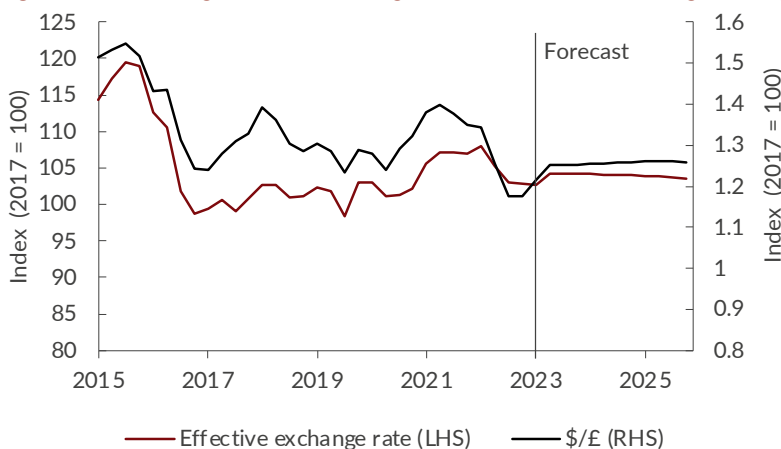
Figure 1.11 FTSE all share index



Source: NiGEM Database; NIESR Forecast.

Since reaching a low of \$1.07 on 26 September, sterling has appreciated by 17 per cent and, as of 26 April, is worth \$1.25. Given the near impossibility of forecasting exchange rate movements, we project sterling to remain at around this rate through the forecast period (figure 1.12). That said, it is possible that the excitement generated by the coronation could lead to increased tourism over 2023 and a further appreciation of the exchange rate.

Figure 1.12 Sterling effective exchange rate and US dollar/sterling exchange rate

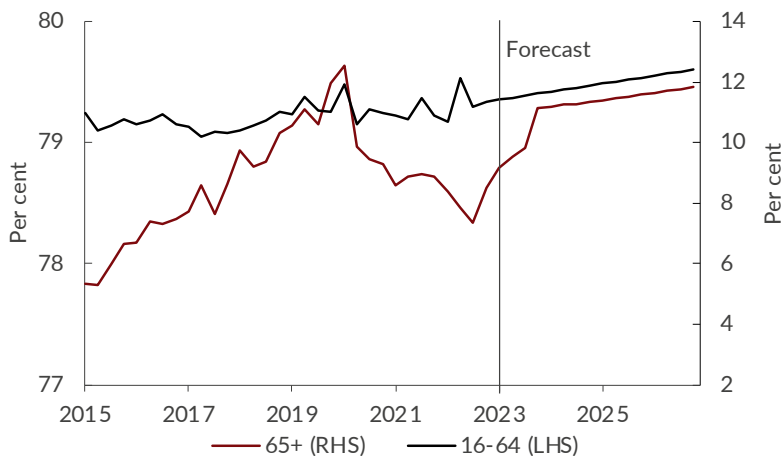


Source: NiGEM Database; NIESR Forecast.

## The labour market

The key question when thinking about the UK labour market remains the extent to which the marked increase in economic inactivity since the Covid-19 pandemic will persist. Looking at the participation rate for the working-age population, our view remains that it will return to its pre-Covid level over the course of the next few years as workers in the 50-64 age group return to the labour force as they find their savings run down and fewer workers retire early (figure 1.13). In addition, we expect an increase in the number of workers aged 65 and over staying in the labour force, again reflecting the need to replace the savings that have burnt through in response to the cost-of-living crisis. Overall, we expect the participation rate among the whole population aged above 16 to remain at around 63 per cent throughout the forecast period. Looking further into the future, the increase in longevity will lead to a rise in the proportion of the population aged over 65 and, hence, lower the labour force participation rate. As argued in, eg, Goodhart and Pradhan (2020), this trend has serious implications for both monetary and fiscal policy. These issues are discussed further in Box B in this Outlook.

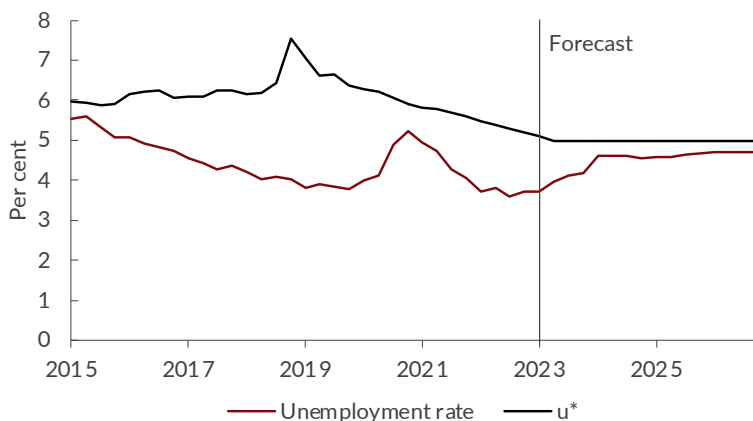
**Figure 1.13** Disaggregated participation rates



Source: NiGEM database and NIESR forecast.

Turning to the evolution of unemployment, we expect anaemic output growth over our forecast to lead to a slow rise in the unemployment rate. Given the currently high vacancy rate, we expect companies to adjust first by withdrawing vacancies and then by laying-off workers; indeed, we have already seen this to a degree as vacancies have fallen. As a result, the unemployment rate takes time to increase, reaching a peak of around 4.6 per cent in the first quarter of 2024 (figure 1.14). At that point, the actual unemployment rate will be more or less in line with our view as to the ‘natural rate’ of unemployment,  $u^*$ ; until then, we expect the labour market to remain tight in the sense of contributing positively to wage inflation.

**Figure 1.14** Unemployment rate and  $u^*$



Source: NiGEM database and NIESR forecast.

## Box B: Economics and population change

By Norma Cohen

### Introduction

Watching population change, it may be said, is akin to watching paint dry. It is noticeable almost only in times of national upheaval such as wars or epidemics. Usually, it is a phenomenon of which we gain awareness only over long time periods. The economics profession, for its part, habitually looks at change from the opposite end of the telescope; that which is happening in the nearby to intermediate future, perhaps a quarter or maybe a year ahead. The practice of economic forecasting, therefore, has been almost completely divorced from that needed to consider the economics of population change.

But from the second half of the 20th century in particular, population change has occurred at a furious pace compared with that of a century earlier and it is no longer possible – or sensible – for economists to ignore it. Indeed, a quick look at the recent upheaval in France shows the risks of avoiding this discussion. There, rising life expectancy is forcing government to look at some of its most cherished social programs and enact very unpopular overhauls. This needs to be done to make these affordable in the face of a population not only changing in size, but perhaps most critically, in shape as well.

Britain, like most nations in the industrialised world – and many emerging economies as well – needs to take account of that change in the shape of its population and consider how it will respond. By the mid-20th century, the age profile of much of the industrialised world formed a pyramid shape, very large numbers of children and young people at the bottom and very few elderlies near the top. Now, for many nations, the shape more closely resembles that of an obelisk with similar numbers of those at the youngest ages compared with numbers in old age.

Given the fact that longevity at older ages is continuing to rise and that the rate at which new babies are produced is falling, is there a risk that eventually, Britain's population shape resembles that of a champagne flute? The implications of population change are profound.

Much has been made in recent months about what appears to be a slowdown in the rate at which longevity in Britain is rising and what that ought to mean for the economy and the nation's finances. A review of the State Pension Age in 2017 predicted that on average, women who lived to age 65 would live more than a further 25 years by 2050, while men would live a further 23.5 years. That has now been downgraded to 23 years for women and 21 years for men. What is the economic impact of rising longevity, albeit at a slower pace than had been expected only a few years ago?

This box will look at the big population trends and consider the economic and fiscal impacts of each. But first, it is helpful to step back and consider how Britain's population has changed shape over time and look at how that shape-shift may have changed its economy.

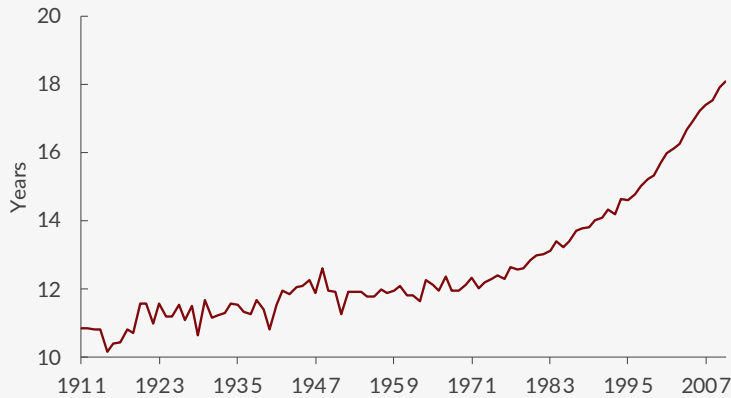
### Population trends in Britain

Life expectancy in Britain has been rising steadily since records began in 1841. Efforts to address old age poverty were first set out in legislation in 1908, providing the neediest over age 70 with a limited, means-tested pension that required recipients also to meet a moral test. In 1925, the then Chancellor Winston Churchill introduced Britain's first contributory pension for those earning what was then considered an annual salary below that earned by the middle classes, ie, below £250 annually. The age at which it could be drawn was set at 65.

The English Life Tables show that on average, a male born in the decade when that age was set would live to be 55.6 years while a woman born at that time would, on average, live to an age of 59.6 years. Mostly, the low life expectancies at birth reflected the very high levels of childhood mortality prevailing at the time. But reading between the lines, half the population born in the decade in which UK pensions were created were unlikely to live long enough to draw one. Data from the Department for Work and Pensions shows that on

average, life expectancy for men who lived to age 65 hovered between 11 and 12 years from 1911 until 1971 (figure B1).

**Figure B1** Average additional life expectancy for men aged 65



Source: Department for Work and Pensions.

But far more Britons now live into old age than before. In the 40 years between 1980 and 2020, the mortality rate among British men in their 50s more than halved. That means that far more men are living into old age than ever. At age 66, the current State pension age, the mortality rate among men in the nation is slightly less than a half the rate of only 40 years ago. Many more men today will live to claim their State pension than did just a few decades ago. Indeed, the Office for National Statistics (ONS) calculates that the fastest-growing age group of the UK population between now and mid-2045 will be those of pensionable age, while the percentage of children will decline slightly.

Of course, averages can be misleading because they obscure what happens at the margins. One measure cited by actuaries is the 'slope measure of inequality' which offers a glimpse into how longevity differs by socioeconomic status. According to data compiled by the OECD, for men over age 15, as of the 2010s the inequality gap is wider in Britain than it is in the Netherlands, Italy, Spain or Sweden but is narrower than the inequality gap in Germany or France. For women, the slope of inequality is wider, as of the 2010s, than for any other European country. Not all Britons are benefitting from rising longevity in the same way.

### Why does this matter?

The Office for Budget Responsibility (OBR) spells this out annually in its Fiscal Risks and Sustainability report. Its July 2022 Report, OBR (2022), set out spending on overall welfare by age in Britain. They found that per capita welfare expenditure, net of tax receipts, is lowest for those of prime working ages 25 to 49 years old and tax receipts, per capita, peak among those in their late 40's. While expenditure is relatively high, and tax receipts non-existent, for the very young aged 0 to 15 years, it is a fraction of per capita expenditure for those aged 80+ years. For the latter group, average per capita expenditure is roughly £43,300, more than double the £19,800 per-head spent on the nation's youngest.

Using the most recent (ie, 2020) ONS population projections, the percentage of those aged 80+ will rise to 9.4 per cent of the total population by 2050, fewer than 30 years from now, from the 5.0 per cent these were as of 2020. Worse, what is known as the Old Age Dependency Ratio (OADR) – the number of people of pensionable age for every 1,000 of working age – will rise to 341 from the 2020 level of 280. A big element behind the rising OADR is falling fertility, a trend since 1973 across Britain generally and indeed, in much of the industrialised world. In short, Britain is producing too few new babies to replace the population that is ageing and dying. To keep population stable, women need to bear 2.1 babies each on average. ONS data suggest that, although there was a slight uptick in fertility in England and Wales in 2021 to 1.61 babies per woman, that is far below the trend in recent years. And the OADR may be even more painful than the numbers show. That is because it does not take account of the actual size of the workforce; it uses broad

total population measures. The steep rise in economic inactivity seen among those aged 50 to 64, therefore, implies a level of taxation for workers that is even more burdensome in the future.

### What can be done?

The short answer is that it will not do to wait until the full effect of population change has arrived. Economists can help by building into their forecasts the full effects of this change not only on tax revenue and expenditure but also on income, output, productivity and housing demand and pricing.

Many of the world's current State social protection systems – including that of pensions - were created in the aftermath of the Second World War which, as economic historian Alan Milward (1994) put it, forced widespread questioning of what States were for if they could not protect the lives and property of their citizens. One thing is clear: the general public – not just that in the UK but in much of the industrialised world as well – has come to believe that withdrawal from the workplace in one's seventh decade of life is, and should be, the norm. The rising prevalence of longer, healthier lives has become synonymous with a longer period of leisure, perhaps subsidised by the tax revenues of others.

Also, it may be helpful to recall the economic conditions into which Britain's 1925 State pension was introduced, conditions which have parallels with US legislation in 1935. In both instances, each nation was facing record unemployment rates. One objective of proponents of State retirement systems in each country was a desire to syphon off 'surplus' labour, creating job vacancies.

But it is helpful to discuss alternatives. Gratton and Scott (2016) urge a move to 'transitions': periods of life where individuals prepare for yet a new stage of their lives, perhaps returning to school to train for entirely new careers. So far, there is no evidence that this is happening in Britain. Data from the Office for Students shows that both the absolute numbers and percentage of participants in higher education aged 40 and older, slipped in the years 2010-11 through 2017-18, even before the effects of Covid showed up.

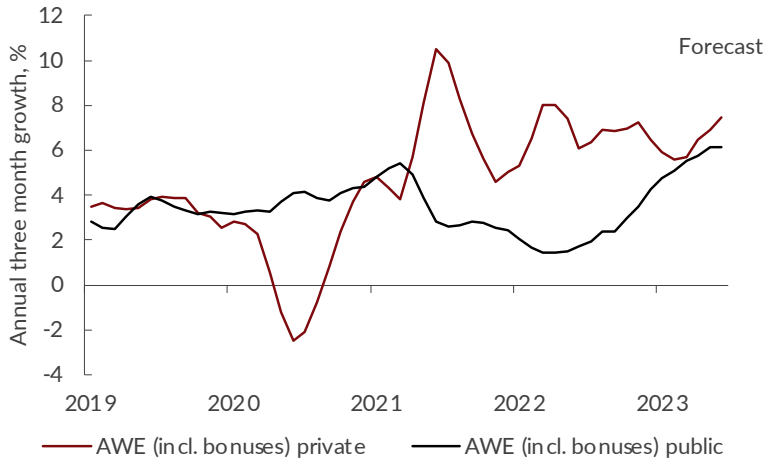
Nevertheless, Gratton and Scott (2016) note that at the start of the 20th Century, there were only two stages of life; childhood and adulthood. The concepts of 'adolescence' and 'retiree' were life stages that did not exist a century ago. Now, these are firmly embedded into national consciousness. It is possible that more of these transitional stages can be introduced into Britain's national psyche.

### References

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- Office for Budget Responsibility (2022), *Fiscal risks and sustainability*

As noted in our April Wage Tracker (Bejarano Carbo, 2023b), we estimate that total and regular average weekly earnings will have grown at 6.0 and 6.7 per cent, respectively, in the year to the first quarter of 2023. Given the tight labour market, and persistent inflation, we expect nominal wage growth to remain high in the second quarter of this year with total earnings growing at 7.2 per cent and regular pay at 6.0 per cent, with the former reflecting high expected private sector bonus growth (figure 1.15). However, given how high we think CPI inflation is likely to be in 2023, this still implies that nominal wage growth fails to keep up with price inflation; in other words, real wages continue to fall throughout 2023. Further out, we expect annual wage growth to settle at around 3 per cent.

**Figure 1.15** Growth in total average weekly earnings: public and private sectors

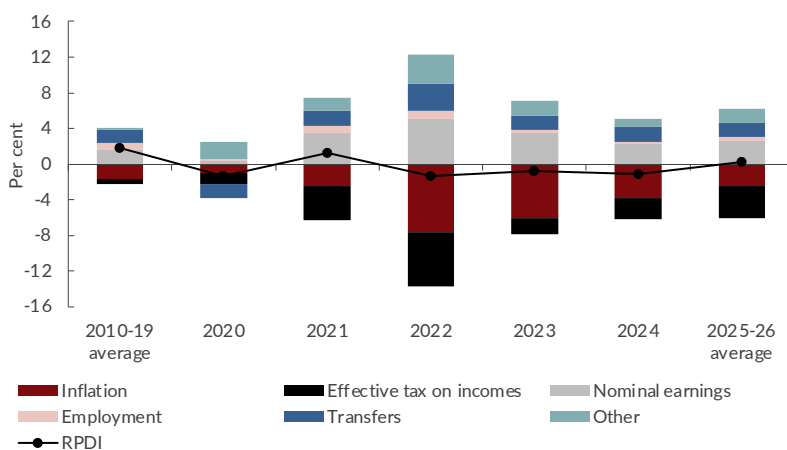


Source: ONS and NIESR forecast.

### The household sector

The fall in real wages has led to a cost-of-living squeeze and falling real disposable income with real personal disposable income falling by 1.4 per cent in 2022. The bad news is that we expect real personal disposable incomes to continue falling 2023 and 2024, by 0.7 and 1.1 per cent, respectively, as inflation remains above target while nominal earnings growth and transfers fall (figure 1.16). Over the medium term, as price inflation comes down below nominal wage growth, real incomes start to grow, but only by around 0.2 per cent (figure 1.16).

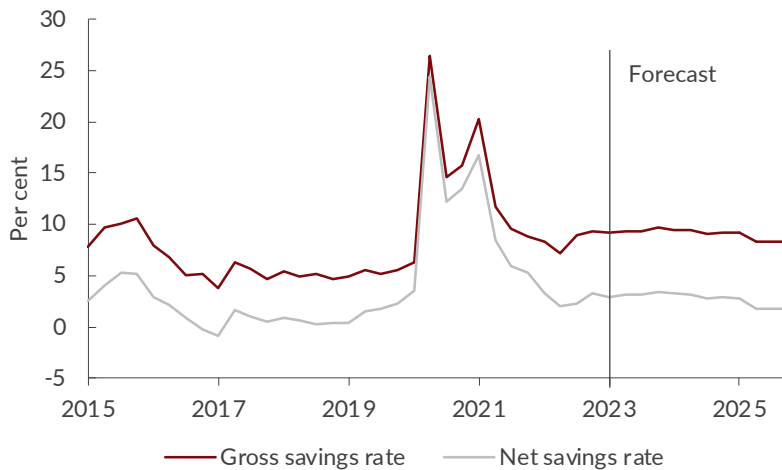
**Figure 1.16** Contributions to growth in real personal disposable income



Source: NiGEM database and NIESR forecast.

As we have stated in previous Outlooks, the Covid-19 lockdowns led households to build up their savings, to the tune of around £200 billion in aggregate. Since the pandemic, households have been drawing down their savings to maintain their consumption in the face of the cost-of-living crisis. Despite the small rise in the savings rate in the fourth quarter of 2022, we expect households to continue to draw down on their savings and the net savings rate to fall to 2.9 per cent in the first quarter of 2023 before falling towards a level of around 2 per cent in the medium term (figure 1.17). Given the falls in real personal disposable income, and the slight rise in the savings rate, we expect aggregate consumption to fall by 1.3 per cent in 2023 and 1.1 per cent in 2024. Consumption then starts to grow in 2025 but at the slow rate of 0.6 per cent (figure 1.18). The gloomy picture for households is completed by the outlook for house prices, where we are expecting a fall in house prices between their peak in the fourth quarter of 2022 and the fourth quarter of 2025 of around 9.6 per cent.

**Figure 1.17** Gross and net savings rates



Notes: The net savings rate is defined simply as  $1 - \text{real consumption}/\text{real personal disposable income}$ . The gross savings rate accounts for revaluation effects in household financial wealth (ie, the change in the value of net equity in pension funds held by the household sector).

Source: NiGEM database and NIESR forecast.

**Figure 1.18** Annual consumption growth



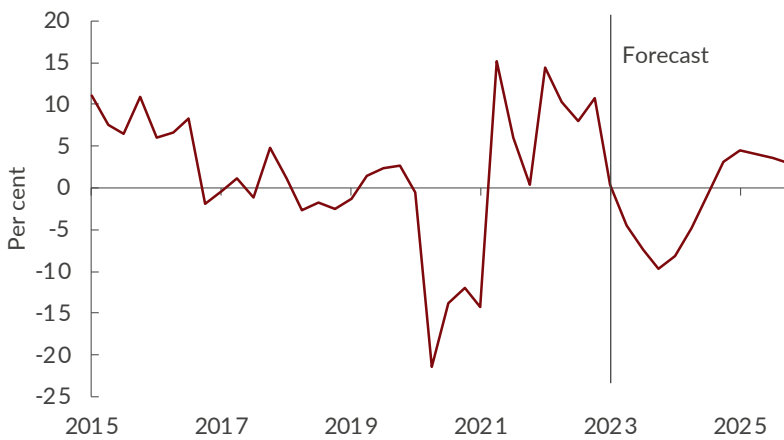
Source: NiGEM database and NIESR forecast.



**The corporate sector**

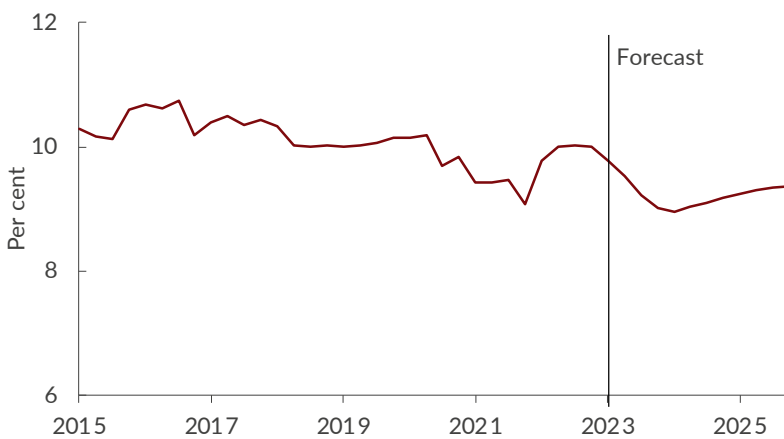
Business investment fell in the fourth quarter of 2022 and, given the bleak outlook for GDP, higher interest rates, and the withdrawal of much of the energy price support for firms, we expect falls in business investment of 5.3 per cent in 2023 and 2.8 per cent in 2024 (figure 1.19). As a result, the business investment to GDP ratio falls from 10 per cent to around 9 per cent (figure 1.20). NIESR has consistently said that to increase productivity growth in the United Kingdom, we need to raise business investment as a proportion of GDP. This view was also voiced in much of the evidence presented to the Productivity Commission (set up by NIESR) and written up in its evidence review (Productivity Commission, 2022). The Productivity Commission has made understanding the causes of low business (and public) investment its main priority for 2023 (Productivity Commission, 2023). Labour productivity per hour rose by 0.4 per cent in 2022. But, we expect it to fall this year by 0.5 per cent and to grow in 2024 by only 0.4 per cent. As we said earlier, the dawning of the third Carolean era is not by itself going to solve the United Kingdom’s long-standing productivity problem. Box C discusses the links between finance, business investment and productivity.

**Figure 1.19** Annual business investment growth



Source: NiGEM database and NIESR forecast.

**Figure 1.20** Business investment to GDP ratio



Source: NiGEM database and NIESR forecast.

## Box C: Finance, business investment and productivity

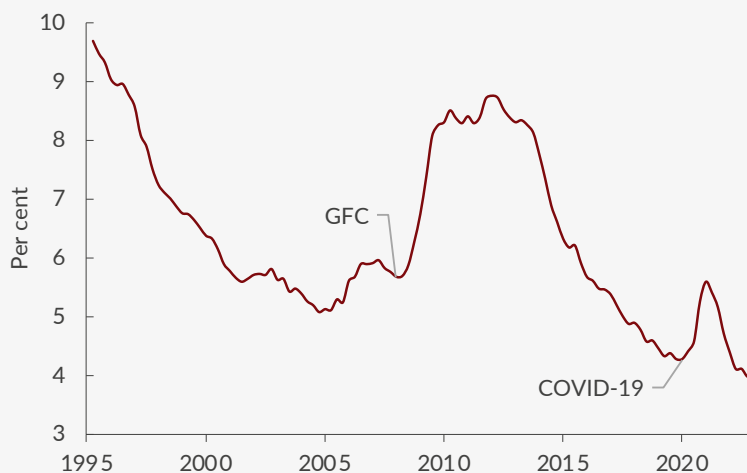
By Issam Samiri

As labour supply in the United Kingdom nears capacity, the performance of labour productivity, defined as output per hour worked is crucial to future growth. Labour productivity growth is typically attributed to three factors: changes in labour force quality, changes in the capital stock, and a total factor productivity residual (TFP), which represents the state of available technology.<sup>1</sup> Here, I concentrate on the potential impact of the recent Bank of England tightening, and changing financial conditions more generally, on business investment, which ultimately influences labour productivity growth.

### As the UK labour market nears capacity, productivity becomes key to economic growth

The UK labour market is currently very tight, with a low unemployment rate of 3.8 per cent and total hours worked approaching pre-pandemic levels. Economic inactivity is slightly higher than before the pandemic, but still low compared to historical standards. The Office for National Statistics (ONS) measures of underutilised labour are also close to their lowest recorded levels. Figure C1 displays an average of the six ONS measures for labour market availability, which has been trending downwards since the mid-1990s and, as of the fourth quarter of 2022, stands near its historic low at 4 per cent. The UK labour market is currently operating at near-capacity levels, which underscores the significance of labour productivity as a key driver of economic growth.

**Figure C1** Underutilised labour in the United Kingdom



Source: ONS and author's calculations.

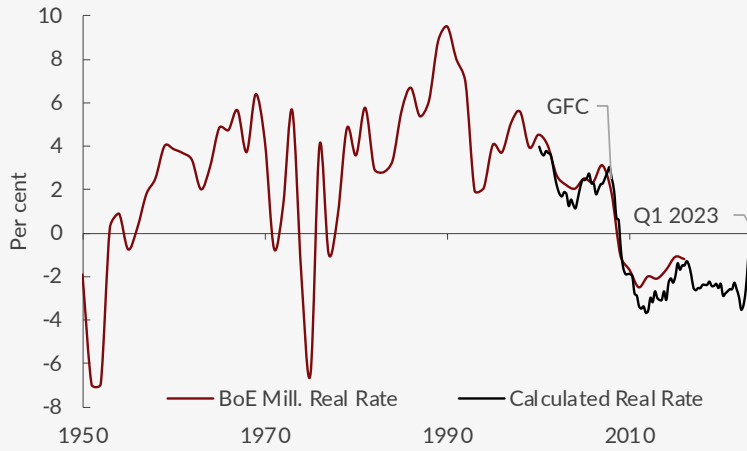
Note: Calculated as the unweighted average of the U-1 to U-6 measures.

### Is this the end of the post-Global Financial Crisis ample liquidity, low financing cost period?

Figure C2 illustrates a long-term downward trend in real interest rates that began in the early 1990s. The Global Financial Crisis (GFC) further accelerated this trend, pushing real interest rates into negative territory. Despite the recent tightening by the Bank of England, real interest rates remained negative until the fourth quarter of 2022 before turning slightly positive in the first quarter of 2023, the first time since 2008.

<sup>1</sup> See Chadha and Samiri (2022) for more details on the decomposition of labour productivity growth and its implications. The paper also comments on the issue of weak business investment in the United Kingdom despite low real interest rates in the post-GFC period.

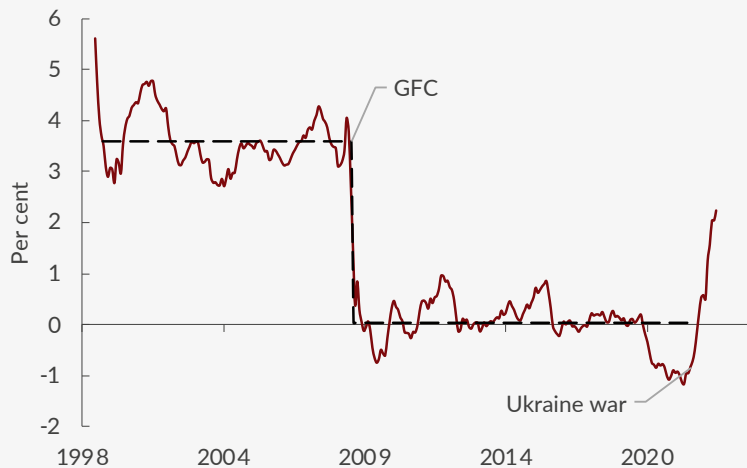
**Figure C2** Real interest rates in the United Kingdom



Source: Bank of England Millennium Dataset, Datastream and author's calculations.

Notes: Data from 1950 to 2016 are from the Bank of England. Data from Q4 1999 to Q1 2023 calculated as the difference between the Bank of England's base rate and the Bank of England's expected price change over the next 12 months.

**Figure C3** Real loan interest rate facing safer PNFCs



Source: Bank of England Millennium Dataset, Datastream and author's calculations.

Notes: Data from 1950 to 2016 are from the Bank of England. Data from Q4 1999 to Q1 2023 calculated as the difference between the Bank of England's base rate and the Bank of England's expected price change over the next 12 months.

The post-GFC drop in long-term real financing costs for safer private non-financial UK companies (PNFCs) has been even more striking, falling from an average of around 3.5 per cent to near zero in the decade following the GFC (Figure C3). As of February 2023, the real cost of financing safer PNFCs stood at 2.2 per cent, its highest level since December 2008. Confirming these trends, the March 2023 Decision Maker Panel Survey (DMP) reported a 1.4 percentage point increase in interest rates on firms' current borrowing, with expectations of a further small increase within a year (Figure C4).

**Figure C4** Effective interest rates on respondents' bank and non-bank borrowing

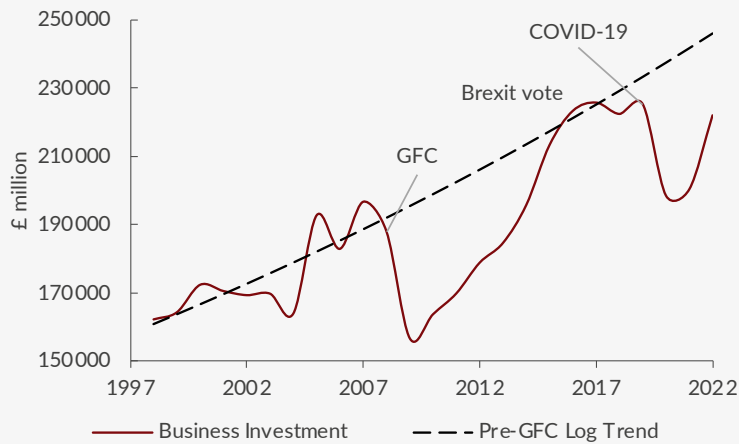
Source: Bank of England Decision Makers Panel.

After a prolonged period of cheap financing and ample liquidity in the post-GFC era, firms are now facing positive real financing costs for the first time since the Great Recession. This is expected to have a negative impact on business investment and, consequently, on the prospects for productivity growth in the United Kingdom. In the medium term, the impact on the business capital stock will depend on future developments regarding inflation and their implications for monetary policy in the United Kingdom.

### No persistent recovery of business investment after the GFC and the role of uncertainty

According to standard economic models, low real financing rates are expected to encourage private investment. However, UK business investment remained weak in the years following the GFC (Figure C5). While there was a temporary increase in investment in the years leading up to the Brexit vote, this trend was cut short by the referendum result. The subsequent uncertainty surrounding Brexit and the more significant disruptions caused by COVID-19 led to a collapse in business investment in 2020, followed by a partial recovery to pre-pandemic levels by 2022. This persistence of uncertainty has become a significant roadblock in reviving business investment to pre-GFC trends. The recent high inflation episode has introduced a new source of uncertainty for businesses to consider.

The UK business sector missed the opportunity to increase capital expenditure during the decade following the financial crisis, despite the availability of low financing rates. The current tighter financial conditions are unlikely to help reverse this trend. DMP data indicates that decision-makers have consistently reported an 8 per cent decline in investment due to the increase in nominal rates over the past three quarters. Meanwhile, UK companies exhibit more optimism regarding their future sales as the economy recovers from the COVID-19 disruption. However, this newfound optimism has yet to translate into a revival of business investment, as business investment in the first quarter of 2023 remained slightly below pre-pandemic levels. A revival of business investment is essential to promote productivity growth and compensate for the capital the economy failed to accumulate following the GFC.

**Figure C5** Business investment

Source: ONS and author's calculations.

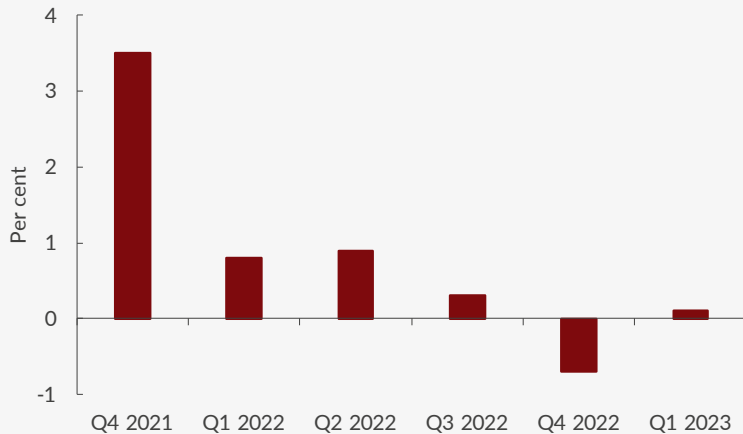
Bunn et al. (2022) used DMP data to demonstrate that inflation rates among firms became more dispersed and skewed during the post-pandemic recovery. Moreover, their findings reveal that firms have become more uncertain about future inflation. Fischer (2013) studied loan-level data for small businesses and discovered that higher inflation leads to a significant reduction in investments, with businesses shifting their investments away from fixed investment to working capital, a more flexible production factor. This literature suggests that as other sources of uncertainty begin to diminish, firms' revenues are now vulnerable to a new source of uncertainty: firm-specific inflation.

### Bank lending to UK businesses is stable but risks remain in the nonbank sector

The potential effects of inflation on business investment extend beyond the direct impact on firms, as inflation can create ripple effects within the financial sector. As noted in Bejarano Carbo et al. (2023), the current cycle of monetary policy tightening implemented by the Bank of England is aggressive by historical standards. This raises concerns about potential instability within the UK financial system.

The Bank of England's Credit Conditions Report indicates that the availability of credit provided to the corporate sector slightly deteriorated in the fourth quarter of 2022, while the most recent data from the first quarter of 2023 suggests that lending to the corporate sector has stabilized (Figure C6). This indicates that the recent tightening of monetary policy has not materially impacted bank lending.

It is important to note that bank lending is just one aspect of the financial system. Nonbank lending is becoming increasingly important in the supply of financing to the business sector. The nonbank sector includes various entities such as pension funds, insurance companies, asset managers, hedge funds, and structured finance vehicles. IMF (2022) reports that nonbanks in the United Kingdom are very large and diverse. Despite the available data not including non-UK-domiciled hedge funds operating in the United Kingdom and other non-domiciled sterling money market funds, it suggests that the size of the nonbank sector by balance sheet is just below that of banks. The events surrounding the 'mini-budget' in September 2022 showed how quickly problems can develop in the nonbank sector, with potential implications for business investment. These events underscored the need to control systemic risks emanating from all parts of the financial sector.

**Figure C6** Availability of credit to the UK corporate sector

Source: Bank of England Financing Conditions Survey.

Notes: Net percentage balances are calculated by weighting together the responses of those lenders who answered the question 'How has the availability of credit provided to the corporate sector overall changed?'. Positive balance indicates an increase in credit availability.

Given the sequence of events that have kept uncertainty high for businesses after the global financial crisis, the UK economy may remain on its low business investment trajectory if the current uncertainty surrounding inflation persists or is compounded by other systemic disruptions in the financial system. And, if the United Kingdom continues with such low levels of business investment, then its poor productivity performance will likely continue.

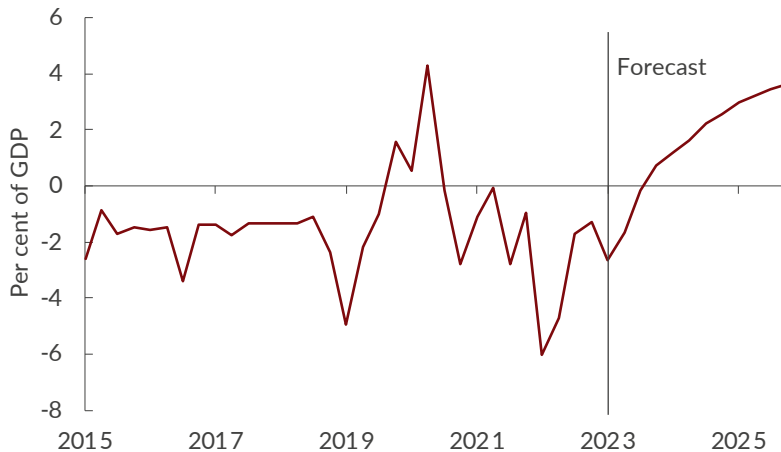
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## Trade

The depreciation of sterling through 2021 and 2022, both in effective terms and against the dollar, is likely to help increase exports and reduce imports into 2023. In addition, anaemic GDP growth is also likely to reduce imports in 2023 and the boost to demand in Asia resulting from the reopening of China as the Chinese Government abandon the 'Zero Covid' policy may help to push up on exports in 2023. Given all this, we expect an improvement in the balance of trade in 2023, which we expect to move into surplus in the fourth quarter of this year (figure 1.21).

**Figure 1.21** Balance of trade



Source: NIGEM database and NIESR forecast.

## Risks to the forecast

In this Outlook, we are publishing our forecast for the post-Coronation UK economy against a background of high and persistent inflation and sluggish growth in output. Since our previous forecast, we have seen some evidence for a pick-up in output and confidence. At the same time, we have also seen some turbulence in financial markets resulting from the failures of Silicon Valley and Signature Banks in the United States and Credit Suisse in Switzerland. Further, there remains much uncertainty in the economy particularly around the evolution of inflation and monetary policy.

In terms of GDP growth, we think the risks are balanced overall. Our central forecast is still for anaemic growth in GDP over 2023 but it is possible that the recent positive news, together with the 'feel good' effect of the Coronation, lead to increases in consumer and business confidence and, so, higher spending than is currently in our forecast. Against that, there is the risk that confidence, which is low currently, does not pick up and the ensuing gloom leads to a recession in 2023. Another downside risk can be seen in the financial sector. The recent bank failures could lead to a tightening in credit conditions beyond that assumed in our central forecast. That said, the efficiency with which the Bank of England dealt with the failure of the UK arm of Silicon Valley Bank using the Resolution Procedures developed in response to the financial crisis, together with the high degree of capitalisation of UK banks currently, points to the UK financial system being able to absorb this shock without a marked tightening in credit conditions. More broadly, the Chicago Board Options Exchange (Cboe) Volatility Index (Vix), a widely used measure of financial market uncertainty, rose only slightly in response to the bank failures and is now back close to its long-run average, also suggesting that the risk of a worsening in financial conditions is quite low (figure 1.22).

**Figure 1.22** Recent movements in the Cboe Market Volatility Index

Source: Chicago Board Options Exchange.

In terms of risks to inflation, we again think the risks are balanced overall. The ongoing war in Ukraine, as well as the current wave of industrial action, make the path of inflation over the next year or two particularly uncertain. Core inflation is high and has not clearly peaked yet. There is a risk that core inflation could rise further and/or remain much higher than the MPC's 2 per cent inflation target. Similarly, if the current wave of industrial action results in faster wage growth in the public – and potentially, private – sector, then there is a risk of firms passing these wage rises into higher prices, a 'wage-price spiral'. And, finally, there is the ongoing risk of an escalation in the war in Ukraine and/or a colder than average winter in Europe leading to a return to higher energy prices. If any of these risks were to transpire, then we would expect to see headline CPI inflation remaining above target for even longer than is currently the case in our forecast. On the downside, there is the risk that inflation falls faster than we are expecting over the coming months as last year's rises in energy prices drop out of the index and are not replaced by new inflation.

A separate risk to inflation on both the upside and downside is posed by the evolution of monetary policy. On the downside, it may be that the recent upside surprises in inflation lead the MPC to raise rates too high and/or hold them at their peak for too long. Doing so might lead to a faster fall in inflation accompanied by a sharper increase in unemployment and a possible recession. Against that, there is the possibility that the MPC starts loosening policy too soon as it is worried about the perception of being 'behind the curve' in loosening policy as it was seen to be behind the curve in tightening. If this were to happen, then it could result in higher inflation becoming embedded in inflation expectations and a much more persistent period of high inflation. Thus, the timing and responsiveness of MPC decisions in such a set of circumstances will be key to minimising risks.

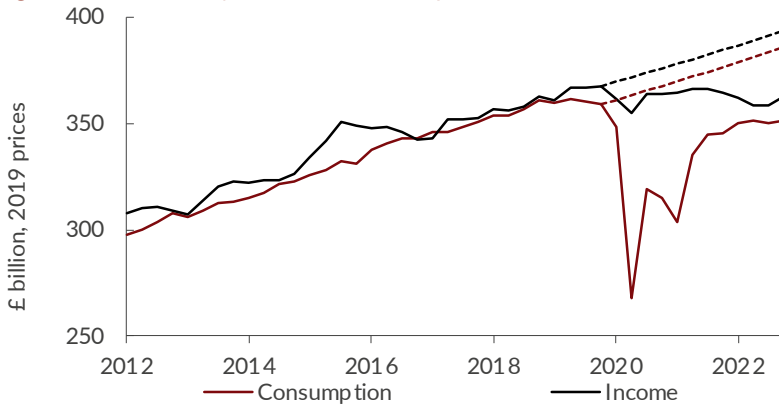
## Current economic conditions

### *Demand and output*

Household consumption remained flat in the fourth quarter of 2022 despite a slight uptick in household income. Both household consumption and income remain below their pre-pandemic trend (figure 1.23). The aggregate increase in household income is the first improvement to household income since the second quarter of 2020, which was when the UK Government announced, and then gradually implemented, its plans for lifting the first UK-wide Covid-19 lockdown.

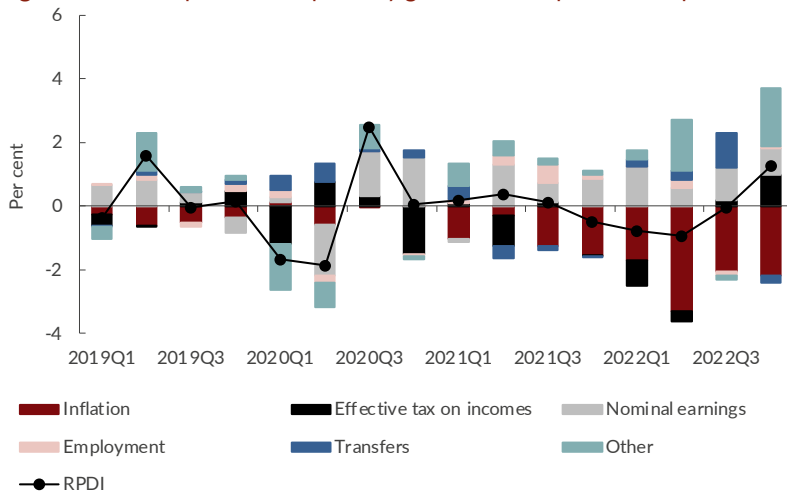


**Figure 1.23** Quarterly household consumption and income 2012-2022



Source: ONS.

**Figure 1.24** Components of quarterly growth in real personal disposable income



Source: ONS.

After four consecutive quarters of falling real disposable personal income (RPDI), the fourth quarter of 2022 finally saw an increase (figure 1.24). This was mainly due to the effect of higher nominal earnings, and transfers and ‘other’ support from Government to help with the cost-of-living crisis. However, an improvement of 1 per cent in RPDI in the fourth quarter of 2022 does not offset previous reductions and it may be several quarters yet before there is any noticeable increase in disposable income. This of course will be dependent on the pace at which inflation slows and the impact of any tax changes, such as the freeze in personal allowances.

**Savings rate increases**

In addition to RPDI increasing, the savings rate also increased toward the end of 2022 (Figure 1.25). This may be a positive choice for higher income households who have seen increases in income and government transfers to help with energy bills. The slight increase in interest rates for savers offered by some banks may also be encouraging saving, though most interest rates on savings accounts remain substantially below inflation. It may also signal an increase in precautionary saving, whereby higher income households opt to reduce discretionary spending to bolster their savings. This may withdraw consumption demand out of the economy and negatively impact on GDP growth.

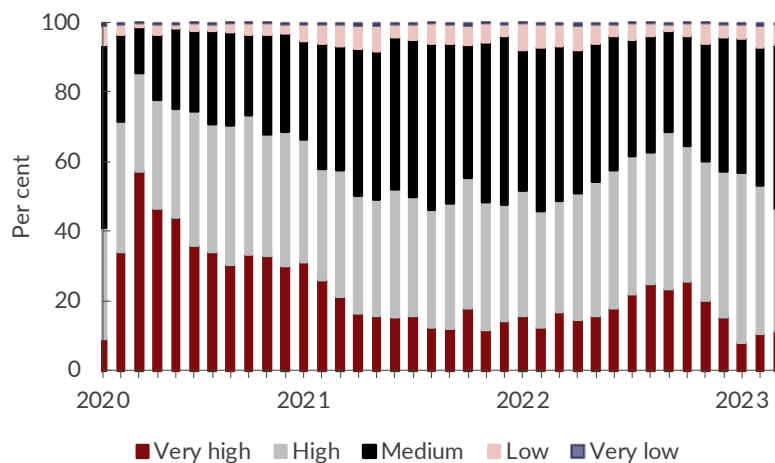
**Figure 1.25** Quarterly savings rate

Source: ONS.

### Business Confidence

The DMP, which surveys small, medium and large UK companies operating in a representative range of industries, showed a marked improvement in business sentiment in March with 46.7 per cent of firms reporting very high or high uncertainty compared to 52.9 per cent saying they faced medium or low uncertainty (figure 1.26). This is a substantial improvement relative to October 2022 where 64.8 per cent of businesses reported very high or high uncertainty as they were concerned with energy prices moving into the winter and political instability in the United Kingdom. As shown in figure 1.26 business uncertainty has fallen to levels comparable with the first quarter of 2022, before the war in Ukraine started.

The most recent Deloitte survey of Chief Financial Officers (CFOs) of large firms also showed a notable reduction in business uncertainty with the percentage of CFOs who rate the level of external financial and economic uncertainty facing their business as ‘high or very high’ falling to levels far below the peak in the third quarter of 2022, and even below the levels seen before the start of the pandemic in 2020 and the EU referendum in 2016. This indicates that UK firms, particularly the United Kingdom’s large firms, may see the worst of the recent shocks to hit the United Kingdom as having passed.

**Figure 1.26** Overall uncertainty

Source: Bank of England Decision Maker Panel

Note: Chart shows percentages of respondents that would rate the overall level of uncertainty facing them at the moment as very high, high, medium, low or very low

## Business Conditions

Business confidence is likely supported by the fact that the profit share in GDP (the standard measure of profit margins) has continued to increase (figure 1.27). This should be caveated by acknowledging that some firms in some sectors have seen their profits increase whilst others have not. Indeed, the number of business insolvencies has increased sharply (figure 1.30). Nonetheless, the rise in profits has been noted by the Bank of England (and other central banks), and whilst not directly a cause or contributory factor to inflation, some companies in some sectors may have taken advantage of the economic turbulence to boost their profit margins. This raises questions about the possible interaction between supply shocks and temporary increases in market power, as recently explored in Wasner and Weber (2022). The role of market regulators, as well as the behaviour of business and industry, will be key to ensuring the smooth functioning of markets to eliminate excess profits and support a sustainable distribution of economic activity and profits throughout the UK economy.

**Figure 1.27** Profit share in GDP

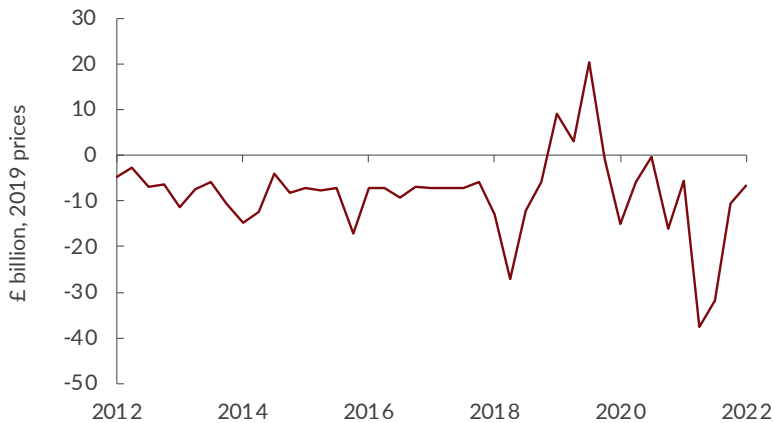


Source: ONS.

Whether this upturn in profit share will translate into increased GDP growth is dependent on increased investment and productivity levels. Currently, the picture remains mixed with some positive signs from high frequency indicators such as the Purchasing Managers Indices (PMIs) while other surveys suggest there is still much uncertainty. For example, the Bank of England's Agents' Summary of Business Conditions survey reports that, although consumer demand held up better than expected, demand remained subdued in some sectors including logistics, wholesale, recruitment, and advertising.

## Trade

**Figure 1.28** UK balance of trade



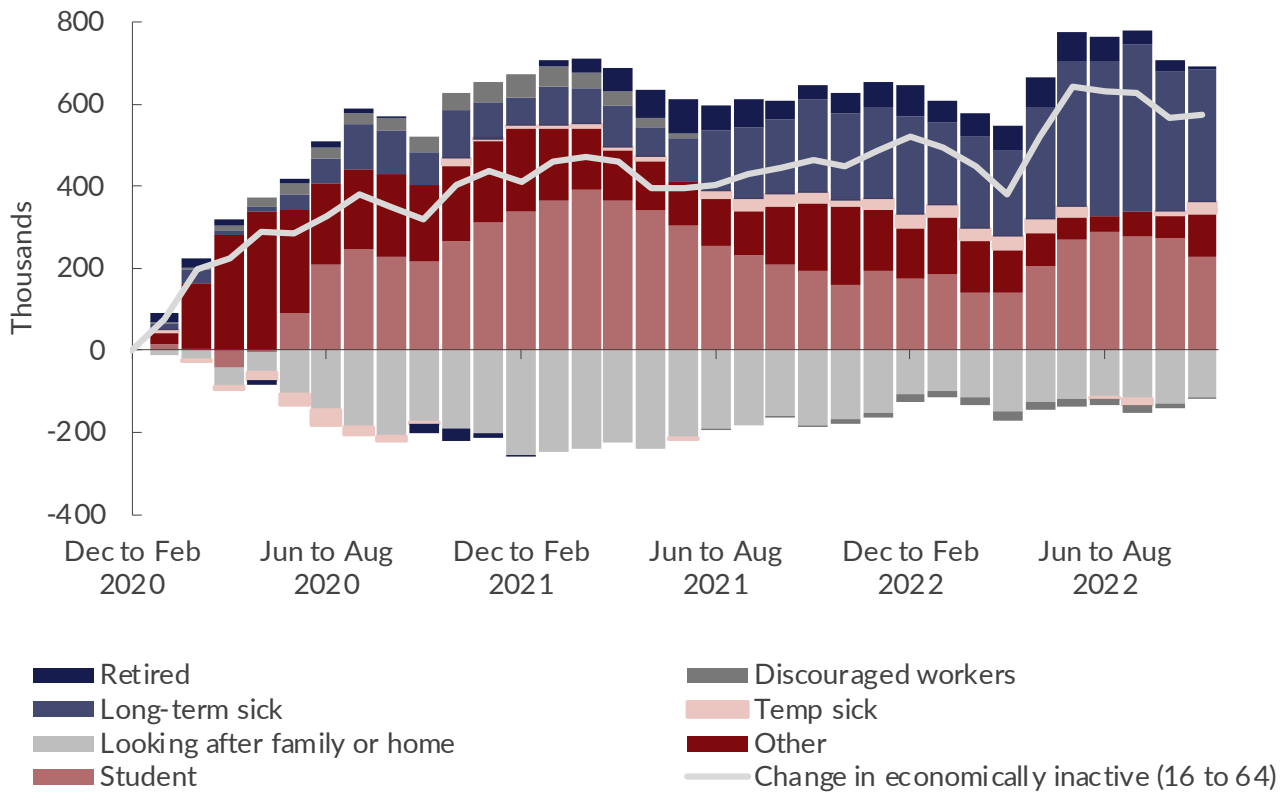
Source: ONS.

The UK balance of trade has improved over 2022. The United Kingdom did see a fall in energy imports in recent months contributing to the improvement in the balance of trade. However, the impact of inflation and movements in the sterling exchange rate were also drivers of this change. For example, during the month of October 2022 the UK balance of trade moved into surplus briefly due to the devaluation of sterling following the political and market turmoil of the mini-budget.

## Supply and Costs

### Labour market showing resilience but falls short of returning to pre-pandemic stability

Despite a slowdown in labour demand and vacancy growth, which might suggest a loosening in the labour market, it remains tight overall. According to the latest figures from ONS, in the three months to February 2023, both the employment and unemployment rates increased by a very marginal 0.1 percentage point to 75.8 per cent and 3.8 per cent, respectively, as compared to the preceding three-month period. The unemployment rate is at a very low level by historical standards and remains below its pre-pandemic rate. It is notable that the rise in employment was driven by part-time workers and the self-employed and not full-time employees, which might suggest that economic instability is making firms opt for temporary hires over permanent placements. Redundancies also decreased in the latest three-month period to 3.2 per thousand employees and are below their pre-pandemic levels.

**Figure 1.29** Change in economic inactivity by category since December 2019 – February 2020

Source: ONS.

### Falling inactivity rate; but it remains above pre-pandemic level

Despite the marginal decrease in the inactivity rate from 21.3 per cent to 21.1 per cent, the workforce participation rate remains 0.9 percentage points lower than pre-pandemic levels – which is a cause for concern amidst the still relatively tight labour market.

Compared to the pandemic period where students and long-term sick explained the bulk of the high inactivity rate, the decrease driving the latest three-month period was largely among students and those aged 16 – 24 years (figure 1.29). This might suggest that these groups are gradually joining/returning to the labour force as they continue to eat into their own savings amidst the ongoing cost of living crisis. However, the long-term sick remains the largest group within the inactive population and the number of long-term sick has reached its highest level since the start of the pandemic (figure 1.29). The weakness in labour participation, in part reflecting ill health, may have exacerbated the tightness in the labour market.

### 'Back to Work' Budget: a missed opportunity to address acute labour issues

As we discussed in our Spring Budget Response (Bejarano Carbo et al., 2023), the Chancellor made a number of announcements aimed at increasing labour participation and addressing labour market shortages, including discouraging early retirement through more generous pension allowances, and encouraging more women into the labour force by subsidising childcare costs and offering support to work. But we feel the Budget fell short of implementing a comprehensive targeted strategy to tackle the acute issue causing a tight labour market – the high economic inactivity rate shown in Figure 1.29. It is a clear priority to enable those people who want to work to return to the workforce, which will help alleviate some of the tightness in the labour market. In that light, it was disappointing that the Budget did not include measures aimed at the long-term sick such as further spending on the NHS to enable increased access for older workers to proper and timely healthcare.

## Uncertainty continues to loom as vacancies continue to fall

The number of job vacancies fell for the 9th consecutive month by 47,000 to 1.10 million in the three months to February 2023, suggesting that global economic uncertainty is still impacting businesses and firms are adjusting their hiring plans in response to weaker activity. This sentiment is echoed in April's job market report by KPMG and REC where employers are reportedly delaying hiring due to rising costs. The repercussion of rising costs is also shown by corporate insolvencies, which jumped by 55 per cent as compared to before the pandemic (figure 1.30). Another measure of how the labour market is seeing signs of loosening is the number of unemployed people per vacancy, which rose to 1.15 in the three months to February 2023, up slightly from 1.04 at the time of our Winter Outlook.

**Figure 1.30** Corporate Insolvencies in England and Wales



Source: The Insolvency Service.

## Cautious welcome to improved weekly work hours

In December to February 2023, total weekly hours worked increased by 7.8 million hours to 1.05 billion hours compared to the preceding three-month period. While the increase is a positive signal for the labour market, total hours worked remain 1.73 million hours below their pre-pandemic level. Both females and males drove the increase in the latest three-month period, although total hours worked by women remain above pre-pandemic levels contrary to men whose hours are below pre-pandemic levels. A total of 348,000 working days were lost to labour disputes in February 2023, an increase from 210,000 in January 2023, mostly in the education sector.

## Wage growth remains high but inflation continues higher

Annual growth in total (including bonuses) and regular pay (excluding bonuses) was 5.9 per cent and 6.6 per cent, respectively, in the three months to February compared to 6 per cent and 6.7 per cent, respectively, in the fourth quarter of 2022 (figure 1.31). However, in real terms, wages fell as inflation continues to bite into pay cheques. When adjusted for inflation, total and regular pay growth fell by 3 per cent and 2.3 per cent respectively (figure 1.31). Although this is not the largest fall recorded – a larger fall of 4.5 per cent was observed in February to April 2009 – it remains among the largest falls in real wages since 2001 (figure 1.31). While wage growth is rising, prices are still rising faster than wages.

## **Box D: Public-sector wages: A view from economic theory**

**By Pedro Gomes**

### **Public-sector wages: a price or a policy?**

In a well-functioning private-sector labour market, the wage is an allocative mechanism that responds to market forces of supply and demand. In the public sector, wages are an allocative mechanism, but also a policy instrument. The government has the power to unilaterally change the conditions of many of its labour contracts. Plus, wage growth is one of the key political decisions when preparing the yearly budget.

Ideally, policymakers should set employment at a level high enough to produce the public goods that the citizens wish for and pay a wage that clears the market. In general, that is the wage paid by the private sector, except when the public sector offers additional compensating benefits, like job-security, better pensions, or better work-life balance. In those cases, the public(-sector) wage should reflect those differences and be lower than that of the private sector. Out of a perfect world, wage determination is much more complex, because public wages are used as an instrument to achieve many, sometimes conflicting, objectives, creating differentials with the private sector and imbalances in the labour market.

### **One instrument, various objectives**

Buchanan and Tullock (1977) made the first reference to political economy aspects of wage determination. They describe how the wages of civil servants rose more rapidly than those of private-sector workers between 1954 and 1974, attributing it to the political power of civil servants that was directed towards raising their own salaries. They called it the Wagner Squared hypothesis, saying that government spending would increase rampantly as a result of the double tendency of hiring more workers and paying them more. Borjas (1980) found that employees in federal agencies with small and well-organized constituencies generally receive higher wage rates. The role of unions as a leading explanation for public-private wage differentials, was predominant in the literature in the 1970s and 1980s (Reder, 1975).

Political considerations can be even more notorious. Public wages are vulnerable to manipulation for electoral reasons. Borjas (1984) found that, in the United States, wage growth in federal agencies was two to three per cent higher in election years. Matschke (2003) found systematic public wage increases of two to three per cent prior to federal elections in Germany.

Public wages respond to the tightness of the budget. Gyourko and Tracy (1991) found that US cities with access to sales taxes and without limits to property-tax, had significantly higher public wages. In their study of the impacts of property-tax limits on local government employment and wage policies, Poterba and Rueben (1995) also found that such limits slowed the growth rate of government wages. The austerity during the Euro Area crisis paved the way to substantial changes in public-sector pay. The restraining effect of budgetary conditions on public wage growth, was also found, using aggregate data for a panel of OECD countries by Afonso and Gomes (2014).

Many economists in policy circles share a Keynesian view that procyclical spending amplifies the fluctuations of aggregate demand, leading to inflation spirals and higher volatility. They see public wages as any other type of spending, that should be counter-cyclical to smooth aggregate demand fluctuations. (Holm-Hadulla et al. 2010 and Lamo et al. 2013). Other economists think public wages should be used to correct for undesirable outcomes in private(-sector) wages. For instance, if inequality is high, public wages can be raised to foster private wage growth. A variation of this argument has resurfaced recently, calling for wage moderation in the public sector, to help containing rising inflation.

Another important aspect is that wage differentials depend, to a large extent, on past decisions. Public wages are slow-moving and divergences from the private sector can arise, not because of specific actions from the government, but by an inability to respond fast enough to developments elsewhere in the economy, either during business cycles or following structural changes in the economy.

## Labour market consequences of the misalignment of public and private wages

Using public wages to pursue multiple objectives generates a misalignment between public and private wages, which in turn translates into imbalances of demand and supply in the public-sector labour market, with potential negative consequences, whether public wages are above or below the market clearing wage (Garibaldi et al., 2021).

There are many negative consequences of offering jobs that are too attractive, besides higher spending and higher taxes. Two first-order effects are the spillover effects into private wages, and the effects on the queues for public-sector jobs, both tending to raise unemployment (Gomes, 2015). The effects on private wages work through bargaining and require some level of job mobility between sectors. As this is not the case for many workers that are attached to occupations that are exclusive to one sector or another, this effect might not be as large as one might think. Empirically, Afonso and Gomes (2014) analyse aggregate data in a panel of OECD countries for the period between 1973 and 2000, and find that a 1 per cent increase in public wages raises wages in the private sector by 0.3 per cent.

Recent papers have highlighted other problems of setting high public wages, especially if they are not uniform across different types of workers. Cavalcanti and Santos (2020) argue that higher wages might lead to misallocation of resources with a lower entrepreneurship rate. Chassamboulli and Gomes (2021) argue that they might foster the rent-seeking activities of unemployed workers trying to get a public-sector job through personal or political connections. Chassamboulli and Gomes (2023) argue they distort education decisions, while Gomes (2018) argues that they distort the decision of which type of workers the government hires, and hence affecting the skill-mix in the private sector. Garibaldi et al. (2021) demonstrates that high wages for workers with low qualifications might generate under-employment.

While the more natural problem might seem to be too high public wages, the consequences of too low wages might be even more severe. In such cases, the government will face recruitment and retention problems, and a shortage of qualified workers. Too much turnover destabilizes teams and effectively adds costs in recruitment, and training of workers. Ultimately, it might jeopardize the production of public goods and the functioning of the state.

## Public-private wage differentials in the UK

If we want a balance between public and private wages, the most important statistic to look at is public-private wage differentials. The simple comparison of the average wage across sectors is a poor statistic because the composition of employment is different in the two sectors. A better way is to estimate the public-private wage differentials from microdata, controlling for observable characteristics like education, region, age or gender, which provides a better answer as to whether the public sector pays higher or lower wages than the private sector for comparable workers.

The most recent estimates for the UK from Boileau et al. (2022), point to a reduction of about 10 percentage points since 1993 (figure D1). The average pay in the public sector is now below that in the private sector. This does not mean that public-sector wages are too low, because there are other compensating differentials: job security, pensions premium, or a work-life balance premium.



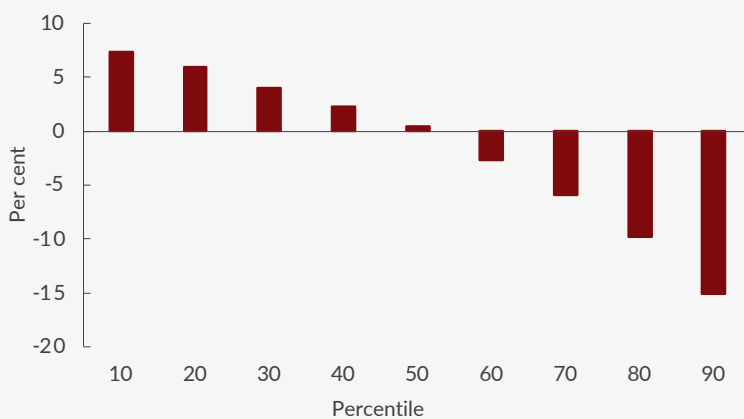
**Figure D1** Average public-private hourly pay differentials



Source: Boileau et al. (2022), using quarterly Labour Force Survey, controlling for observable characteristics. The dashed lines are the 95 per cent confidence interval.

While by last year average pay was at par with the private sector, the analysis must be more nuanced. Behind average pay, hides much heterogeneity in relative pay for different workers. Figure D2, shows the estimated premium at different points in the income distribution, for 2021-22. It illustrates a second fact that public wages are compressed relative to the private sector. This means that workers at the bottom of the income distribution, many with lower qualifications and experience, living in poorer regions, receive 7 per cent more in the public sector, while at the top of the distribution, usually, more qualified and experienced workers, living in richer regions, receive up to 15 per cent less in the public sector. In reality, the two types of inefficiencies co-exist for different workers. Some, are paid much more in the public sector, creating queues and wage spillovers in the private sector. Others are paid too low relative to their alternatives, which might put pressure on the recruitment and retention of highly-qualified staff in richer regions.

**Figure D2** Estimated public-private hourly pay differential by percentile in the conditional wage distribution, 2021-22



Source: Boileau et al. (2022), using quarterly Labour Force Survey, controlling for observable characteristics.

**What to do about public-sector pay?**

Recent calls for wage moderation in the public sector to help fight inflation should not be listened to. While there is evidence of wage spillovers, the elasticities are too low for wage moderation to have a significant impact on inflation. It is a typical example of a wrong use of a policy, to address problems that are better suited with other instruments.

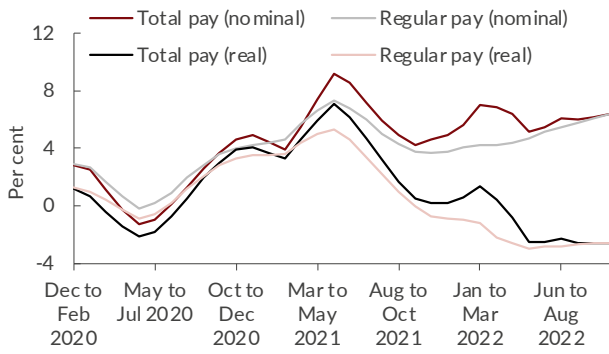
When thinking of public wages, we should look at relative wage comparisons, for different types of workers, in different occupations and regions. The data suggests, that at the top end of the distribution, public pay is significantly below private. Second, we should quantify the value of other benefits. For instance, Fontaine et al. (2020) place the value of public-sector job security in the United Kingdom between 0.6 and 1.6 per cent of the wage in normal times, and between 1.5 and 4.5 per cent during recessions.

Another good indicator of whether public wages are too high or too low are statistics like unfilled vacancies or queues for public-sector jobs, as first proposed by Krueger (1988). Unfilled vacancies are a symptom that wages are too low, while long queues are an indication to call for wage moderation.

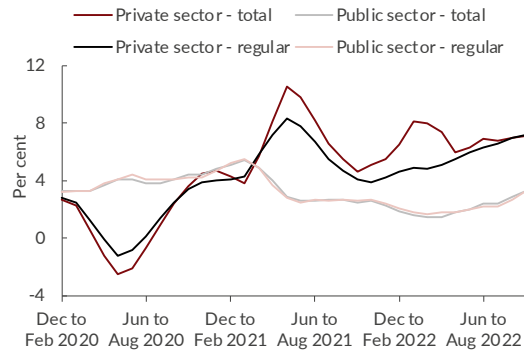
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**Figure 1.31 Average Weekly Earnings**



**Figure 1.32 Average weekly earnings by sector**



Source: ONS.

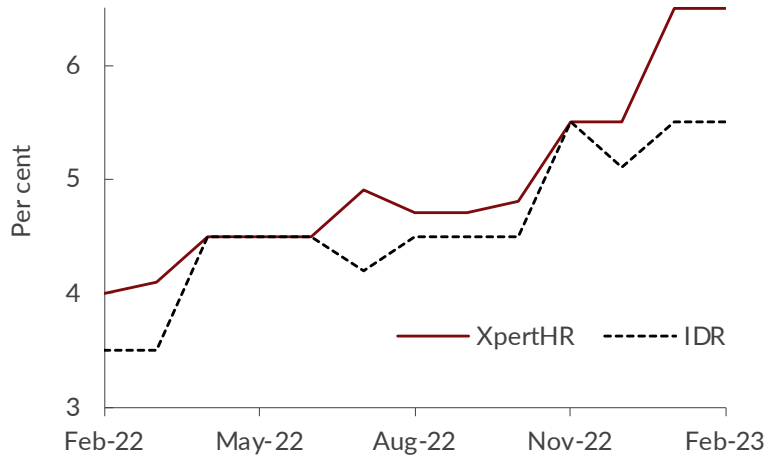
**Positive signs for the Public Sector as wage growth gap with Private Sector starts to close**

The latest earnings data breathed some optimism into the public sector as the disparity with private-sector earnings growth is showing signs of starting to narrow. In the three months to February 2023, private-sector wage growth came in at 6.9 per cent, 1.6 percentage points higher than the 5.3 per cent growth in public-sector earnings (figure 1.32). The last time pay growth of a similar magnitude was observed for the public sector outside of the pandemic was in the three months to July 2005, at 5.4 per cent. Box D discusses how public-sector wages are determined and their relationship with private-sector wages.

**Pay settlements**

Income Data Research (IDR) report that the median pay award for the whole economy was 6.0 per cent in the three months to February 2023 while XpertHR reported 5.0 per cent in the same period (figure 1.33).

**Figure 1.33 Median pay settlements (three-months average)**



Source: XpertHR, IDR.

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## 2 Outlook for UK households, the devolved nations and the English regions

By Arnab Bhattacharjee, Max Mosley, Adrian Pabst and Tibor Szendrei

- **The poorest households are around £4,000 per year worse off as a result of Covid-19 and the cost-of-living-crisis:** this shortfall represents around 24 per cent lower incomes driven mostly by low wage growth not offsetting the impact of inflation, in particular high food and energy bills along with increased housing costs.
- **Helping the hardest hit households will require bold policy changes:** the existing targeted support in the form of the Cost-of-Living Payment should be complemented by public sector wage settlements that reduce the gap with private sector wage growth and a new energy policy that combines the Social Tariff Discount with a Variable Price Cap.
- **The regions hardest hit by the cost-of-living crisis had the highest levels of unsecured debt prior to the cost-of-living crisis:** the Midlands, Scotland (particularly Glasgow), the North East and Northern Ireland saw the largest hits to household finances, and these were the households with the highest levels of personal loans in the fourth quarter of 2021.
- **No devolved nation or English region has experienced a recession and almost all parts are seeing robust levels of employment:** but economic growth is low and – with the exception of London, the metropolitan parts of the South East and larger cities – productivity growth is flatlining.
- **The poor economic performance in the Midlands relative to the United Kingdom is likely a consequence of the high concentration of firms affected by post-Brexit trade restrictions with the European Union:** while much of the United Kingdom has returned to pre-pandemic levels of growth and employment, parts of the Midlands are seeing output, productivity and employment levels fall.
- **Sustained regional regeneration will require a new approach to public investment:** a new simplified system for disbursing Levelling Up funds for suburban, rural and coastal areas is needed, in addition to greater levels of investment overall. We suggest public sector net investment amounting to 3 per cent of GDP over the OBR's forecast horizon (rather than the government's current plan of about 2 per cent) would go some way towards filling the gap.

## Firm foundations

What is the cumulative effect of more than 12 months of higher energy, food and housing costs on households across the income distribution? How are the devolved nations and English regions coping with the combined impact of Austerity, Brexit and Covid-19 – the ABC shocks over the past 15 years – in addition to the lasting effects of the 2008 financial crash? Our analysis finds resilience in terms of regional growth and employment, particular sectoral strengths in services and industries like life sciences, aerospace and renewable energy, as well as significant potential to grow regional economies around cities and clusters.

However, we also find longer-term scarring (e.g. inactivity linked to ill health and early retirement) and deepening disparities between prosperous and poor households and regions. The aggregate fall in living standards that we estimate to be 3.4 per cent over three years (2022-25) is hitting hardest the lower-income households (Figure 2.1) who often live in the most economically and socially deprived parts of the United Kingdom. This includes areas in the North East, the East, and the three devolved nations, but also entrenched pockets of poverty in London and across the whole country.

We find that those who are in the bottom half of the income distribution experience the condition of ‘working poor’ – people in low-paid jobs who are reliant on permanent welfare support to make ends meet (Lind, 2023). As we reported in the Winter 2023 UK Economic Outlook (Bhattacharjee et al., 2023), we are also seeing the ‘return of the squeezed middle’: households in income deciles 2-5 with a disposable income of approximately £20,000 to £32,000 are projected to experience a fall in their living standards of up to 7 per cent by the end of 2023-24 (compared with 2021-22) and this despite the substantial increase in public expenditure.

The combination of lower living standards with higher state spending raises fundamental questions about the distributional consequences of the country's large deterioration in ‘terms of trade’ (the ratio of UK export prices to import prices), which between the third quarter of 2020 and the third quarter of 2022 declined by 7 per cent. With import prices significantly higher and a lack of domestic productive capacity in relation to energy, food and housing, the country as a whole is substantially poorer, but – while monetary policy has to deal with the inflationary consequences of the shock – it is the role of fiscal policy to cushion the blow to low-income households and structurally disadvantaged regions (Chadha, 2022b). We therefore need a better understanding of how the shift from loose monetary and tight fiscal policy in the 15 years since the 2008 financial crisis to monetary tightening and fiscal loosening since 2019 has affected different parts of the country and households across the income distribution.

In terms of public finances and investments, we note two emerging developments. First, there is continued stress upon local government finances. Inflation is eroding both budget provision for expenditure on public services and investment spending at a time of growing public service demand in terms of health and social care, education, skills and social housing. Ongoing and anticipated cuts to public services were an important issue in the local elections in England and are becoming salient in the three devolved nations, notably in Scotland and in Northern Ireland amid political instability.

Second, there is also growing acknowledgement that the supply side of the economy requires greater attention to address longer-term productivity concerns. The OBR has signalled a greater need to support investment in skills and jobs as well as private and infrastructure investments, which have lagged behind the United Kingdom's international comparators (Chadha, 2023; Chadha and Samiri, 2022). The challenge for policy-makers is to balance targeted welfare support and at-scale investment to regenerate structurally disadvantaged regions.

As the country enters the Carolean age, the economy needs firm foundations to grow more national assets that benefit all sections of society (Chadha et al., 2021). Shared prosperity requires a more effective distribution of decision-making powers and fiscal resources to the deprived parts that have suffered since deindustrialisation in the 1980s (Stansbury et al., 2023).

## The hardest hit households

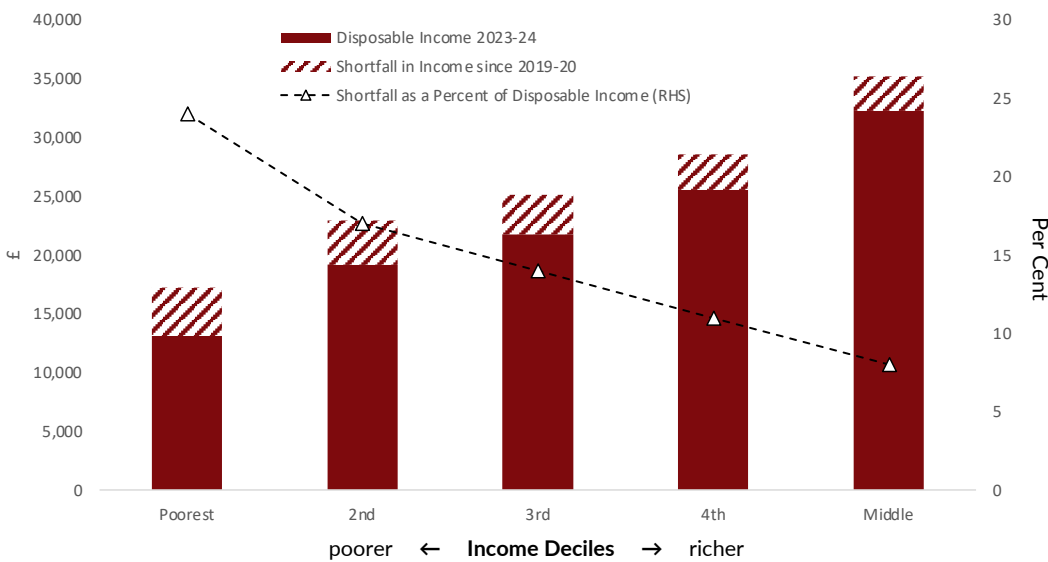
Over the past 18 months, NIESR has estimated the combined impact of fast-rising energy, food and housing costs on household finances (Bhattacharjee et al., 2022a-d and 2023). As inflation falls, it is important to take stock of how these successive shocks have affected households in total and understand where households across the income distribution stand in relation to debt and savings.

If we examine the impact of inflation and higher housing costs in 2022-23 and compare this with policy support measures provided by the government, we find that these negative shocks for the poorest households (in the bottom income decile) are largely offset by policy changes such as uprating Universal Credit in line with inflation and introducing the Cost of Living payment worth £900 per year. However, it may be misleading to focus exclusively on 2022-23 as the once-in-a-generation inflationary shock occurred on the back of the Covid-19 pandemic and other factors that have affected the living standards of low-income households.

In particular, disposable incomes have failed to keep pace with price inflation over successive years. ONS (2023) data suggest that workers are on average 3 per cent worse off than one year ago in terms of real wages. We estimate that, to preserve the same living standards as at the beginning of the pandemic in the first quarter of 2020, the poorest households would require an increase in their annual disposable income of £4,000 compared with the actual level in 2023-24.

This is presented in Figure 2.1, which shows that this shortfall as a proportion of income is largest for the poorest households, representing around 25 per cent of their total disposable income and around 8 per cent of those on middle incomes.

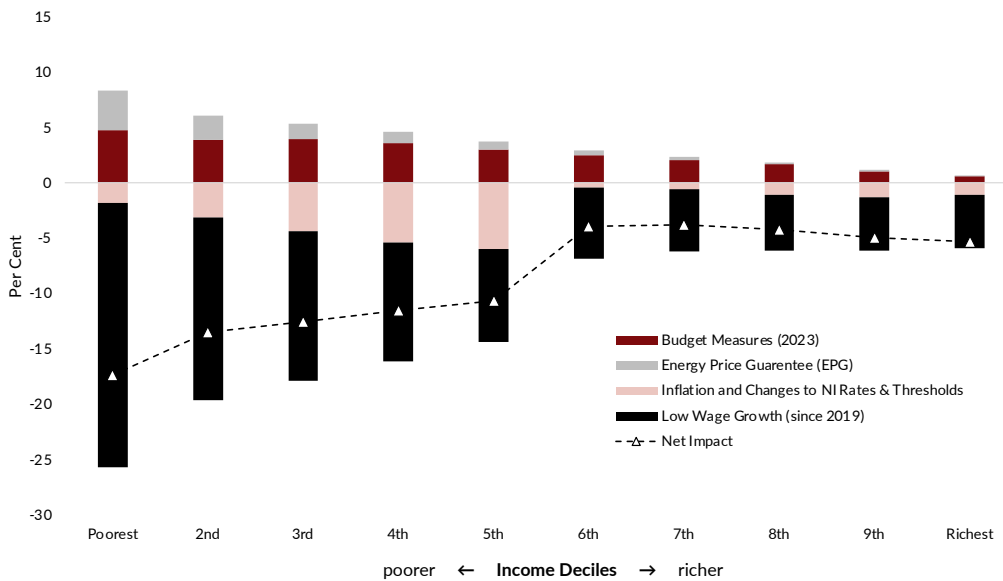
**Figure 2.1** Income shortfalls by quintile in 2023-24 relative to pre-pandemic (2019-20)



Source: LINDA.

It is therefore important to include this shortfall of wages in our understanding of how the cost-of-living crisis is affecting household finances in 2023-24. We estimate this cumulative impact in Figure 2.2 which shows the net impact is greatest for the poorest households, who have seen around a 17 per cent hit to their disposable incomes because of the shortfall in wages, the impact of the inflationary shock, the freezing of income tax thresholds until 2028 and changes to National Insurance.

This impact is not fully offset by support measures such as the Energy Price Guarantee or cash transfers like the Cost of Living payments of £900, which the Chancellor extended in his March 2023 budget until the end of the financial year 2023-24.

**Figure 2.2** Cumulative impact of price shocks and policy interventions across the income distribution, 2023-24

Source: LINDA.

## Household finances across the United Kingdom: debt and savings

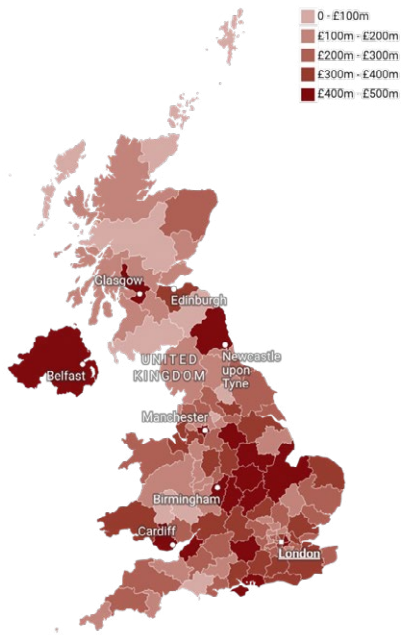
Before the cost-of-living crisis struck, aggregate household savings were higher than their pre-pandemic levels. Using data from UK Finance (a trade association for the UK banking and financial services sector), we explore as part of our Nuffield-funded project on regional regeneration household unsecured debt by UK postcode area for the final quarter of 2021, prior to the once-in-a-generation inflationary shock that hit household budgets in 2022.

Unsecured debt levels offer an important insight into the financial health of a household. Unlike a secured loan which holds collateral commonly in the form of real estate or business assets, an unsecured loan (or personal loan) implies greater risk of default and will therefore carry a higher interest rate – as with consumer credit. Higher unsecured debt levels suggest a more precarious financial position for a household. Based on NIESR research on destitution starting in 2020 (Bhattacharjee and Lisauskaite, 2020), we know that those households that are most economically and socially deprived tend to live in the most structurally disadvantaged regions. Perhaps unsurprisingly, these regions also had a higher concentration of unsecured debt.

Figure 2.3 shows the regional distribution of the levels of unsecured debt by UK postcode area. We find that the highest concentrations are in parts of the Midlands, Scotland (particularly Glasgow), the North East and Northern Ireland. This suggests that certain households in these regions entered the period of high inflation and rising housing costs with levels of personal debt that exposed them even more to the financial impact of the inflation shock.



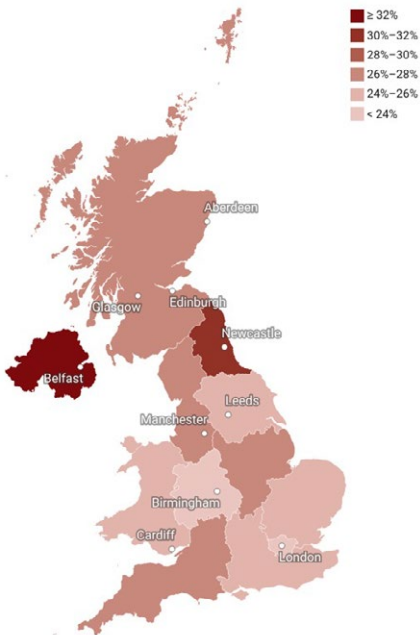
**Figure 2.3** Regional distribution of household unsecured debt by postcode area



Source: UK Finance.

To understand how the pattern of household finances and debt has shifted throughout the cost-of-living crisis, we draw upon previous NIESR analysis into ‘hardest hit households’, which we define as those facing food and energy bills greater than their disposable incomes (Bhattacharjee et al., 2022a-d). Our analysis shows that the greatest concentration of these households lies in the North East and Northern Ireland (Figure 2.4). These are the same regions that Figure 2.3 highlights as having the highest levels of unsecured debt prior to the period of fast-rising food and energy prices.

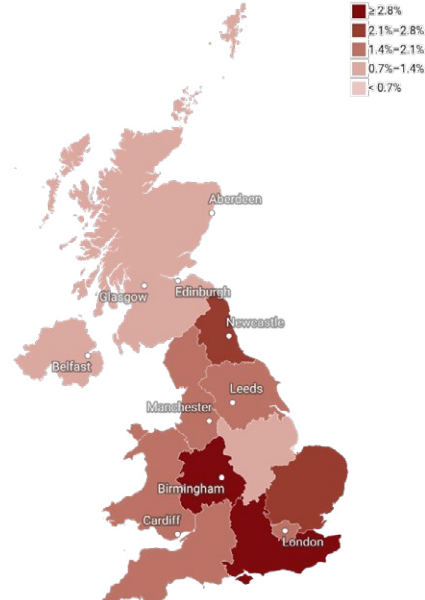
**Figure 2.4** Hardest hit households as a result of rising food and energy prices by region



Source: LINDA.

Interestingly, households in the Midlands are not worst affected by rising food and energy prices based on the measure we employ. However, when we isolate the impact of higher housing costs by estimating the effect of higher interest rates on mortgages (Mosley, 2022 a-c) and other housing costs (Bhattacharjee et al., 2022d), this shows a different distribution of hardest hit households than above. We display these results in Figure 2.5 where we can see that the Midlands and parts of the South East are more severely affected by rising housing costs than other regions.

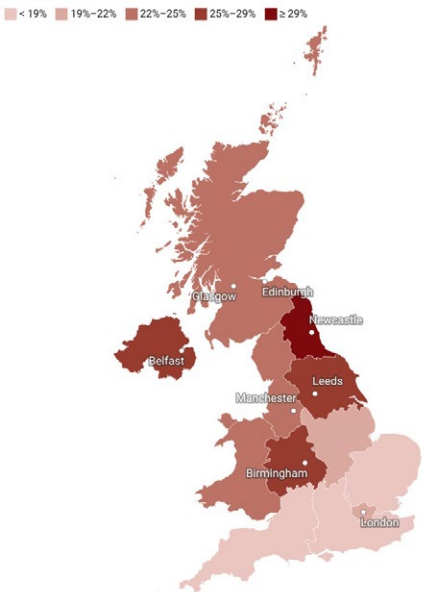
Figure 2.5 Hardest hit households as a result of rising housing costs by region



Source: LINDA.

When comparing these estimates, we find that the households hit hardest by both inflation and rising housing costs are located in much the same parts of the country as those with the highest levels of unsecured debt prior to these shocks. This is consistent with previous analysis on projecting the number of households with no savings by the end of 2024 in the absence of further targeted policy intervention (Mosley, 2022 a). This is presented in Figure 2.6 which shows high concentrations of these households in the Midlands, Northern Ireland and the North East.

Figure 2.6 Proportion of households with no savings by region



Source: NIESR Analysis of the ONS Wealth and Assets Survey (2022), LINDA, NiGEM.

This analysis highlights the worsening financial position of already vulnerable households that tend to be in low-paid employment and depend on welfare support. We find greater levels of unsecured debt for households in these regions due to a combination of persistent inflation, rising housing costs and the running down of household savings.

## Overall outlook for the devolved nations and English regions

- No devolved nation or English region has experienced a recession and almost all parts are seeing robust levels of employment; but economic growth is low and – with the exception of London, the metropolitan parts of the South East and certain cities – productivity growth is flatlining.
- Scotland has seen a surprise uptick in employment for the past two quarters. This leads to higher projected employment than previously expected.
- In our previous Outlook (Bhattacharjee et al., 2023), we expected Welsh employment to bounce back quickly. While the Labour Force Survey numbers have shown an upward revision for the first quarter of 2023, current employment numbers suggest that the labour market contracted further. Given the economic growth profile of Wales, the labour market is expected to recover, albeit slower.
- Northern Ireland has also seen an uptick in employment. This leads us to revise our projections for the region's employment outlook, which looks better than previously expected. However, it still shows the most sluggish performance among the three devolved nations.
- The Midlands, on the other hand, did not see any upward revision of its numbers, and it has seen further employment contraction. The employment profile of the region is now projected to be among the lowest along with the North East.

As evident from our analysis of household finances above, the incidence of economic shocks – Covid-19, Brexit and the war in Ukraine in addition to the cost-of-living crisis – have had a disproportionate impact on lower-income households, which has exacerbated hardship upon regions and communities that have already been lagging behind. Together with lagging investments in public infrastructure and sluggish productivity, progress in regional regeneration seems rather limited.

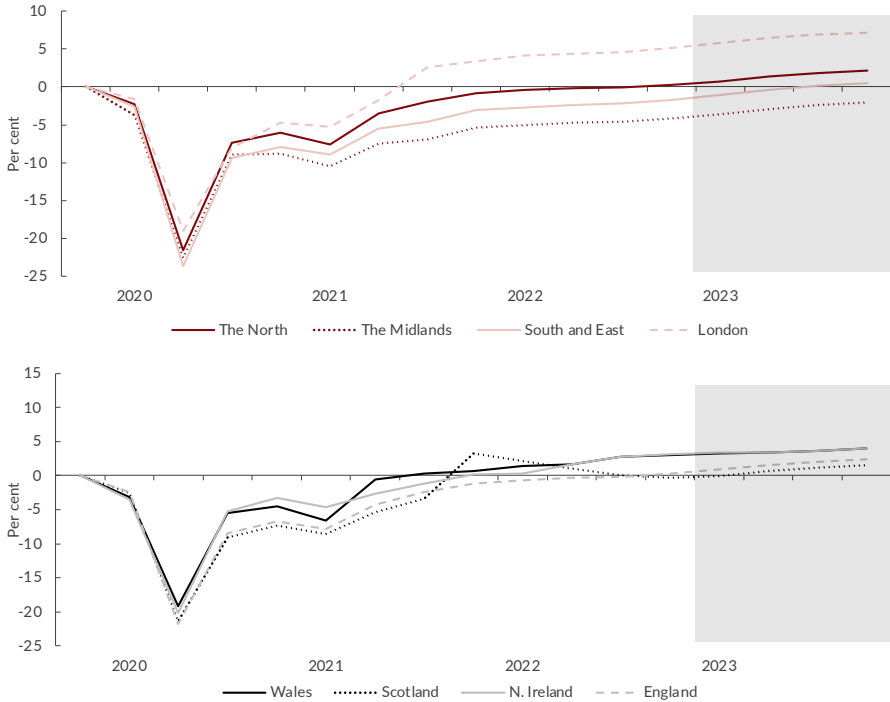
Our outlook reflects continued divergence between different regions of the country. Positive developments, such as the effect of the COP26 summit in Scotland, the changes to the Northern Ireland Protocol, a successful apprenticeship scheme in Wales, the allocation of “Levelling Up” funds and the creation of freeports across various places provide temporary upturns rather than sustained regeneration. Persistent regional and distributional inequality restrict genuine prospects of permanent productivity enhancement. As the country gets poorer in aggregate terms, London and the metropolitan areas of the South East along with cities such as Manchester, Cardiff, Edinburgh and Belfast move ahead of the rest, as do affluent households across the country. This is notwithstanding significant pockets of poverty surrounding all these major urban areas.

For economic output, employment, inactivity and productivity, we find that:

- In terms of economic output as measured by Gross Value Added (GVA), all devolved nations are at pre-Covid levels (Figure 2.7).
- Among the English regions, the South and East, and the Midlands are still below pre-Covid levels, with the South and East projected to recover next year. The Midlands is lagging behind (Figure 2.7)
- Employment numbers show a different picture with only Scotland and London being above pre-Covid employment levels. Perhaps most concerning is the fact that some regions (like the Midlands) experienced lower than expected employment growth in the past two quarters (Figure 2.8).
- Inactivity rates are expected to rise except in Scotland and Northern Ireland, which have seen stronger than expected employment growth in the past two quarters (Figure 2.9).
- Productivity differentials between more prosperous and poorer regions of the United Kingdom persist, along with flatlining growth and even a drop in productivity in the Midlands; except for London, only the South/East and Scotland are at the UK average (Figure 2.10).

### Gross Value Added (GVA)

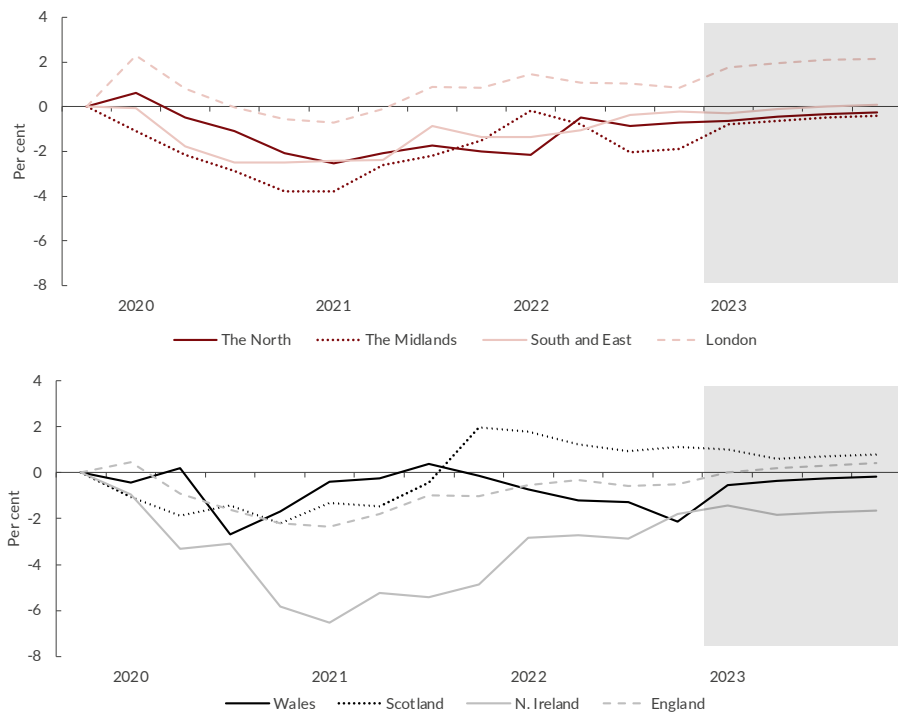
Figure 2.7 Regional GVA relative to the fourth quarter of 2019



Source: NiReMS.

### Employment

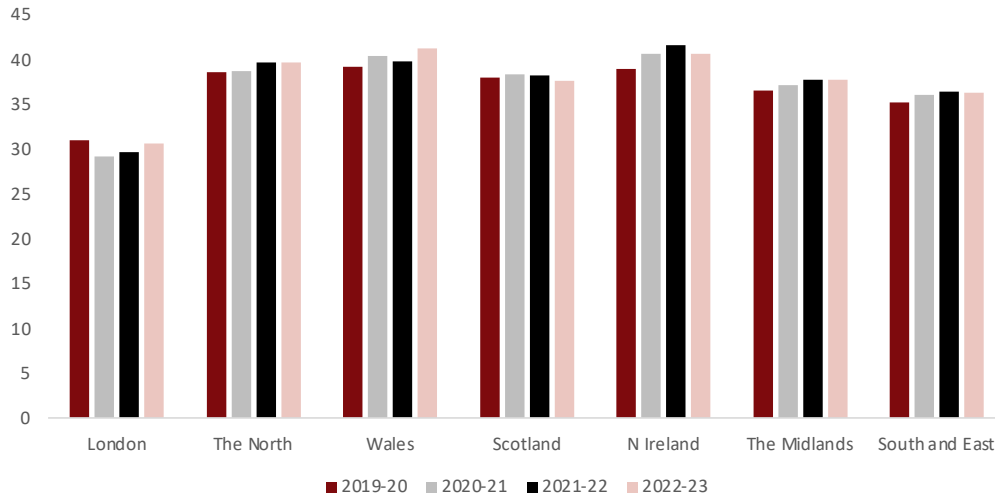
Figure 2.8 Employment levels relative to the fourth quarter of 2019



Source: NiReMS.

## Inactivity

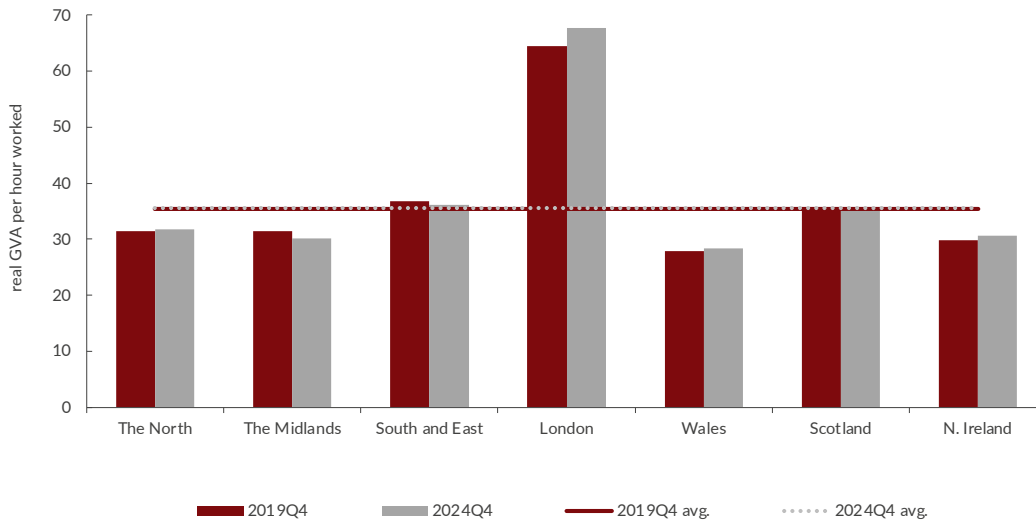
**Figure 2.9** Devolved nation and regional inactivity rates



Note: Inactivity rate defined as labour force/population aged over 16.

Source: NiReMS

**Figure 2.10** Devolved nation and regional productivity



Source: NiReMS.

## Scotland economic outlook

- Gross Value Added (GVA) for Scotland is around pre-Covid levels, just below the UK average (Figure 2.11); we project the Scottish economy to grow in line with the UK average.
- Employment levels in Scotland are the strongest among all regions (Figure 2.12), which is unsurprising given that unemployment has fallen to a record low: the rate dipped to 3 per cent between December 2022 and February 2023 – the lowest it has been since records began in 1992.
- Scotland's inactivity rate has dropped together with strong employment. Given the projection of further growth in GVA and employment, inactivity rates in Scotland are projected to drop further (Figure 2.9). Scottish employment growth is robust, but its low GVA growth has seen productivity flatline (Figure 2.13). Boosting Scottish productivity growth is the key issue for the implementation of the Scottish government's ten-year economic plan under the leadership of the new First Minister Humza Yousaf.
- The shift towards green energy is accelerating in the country and Scotland's early transition can be an important example for the rest of the United Kingdom. To this end supporting already existing green infrastructure in Scotland will be just as important as incentivising new green projects to replace non-renewable energy sources.

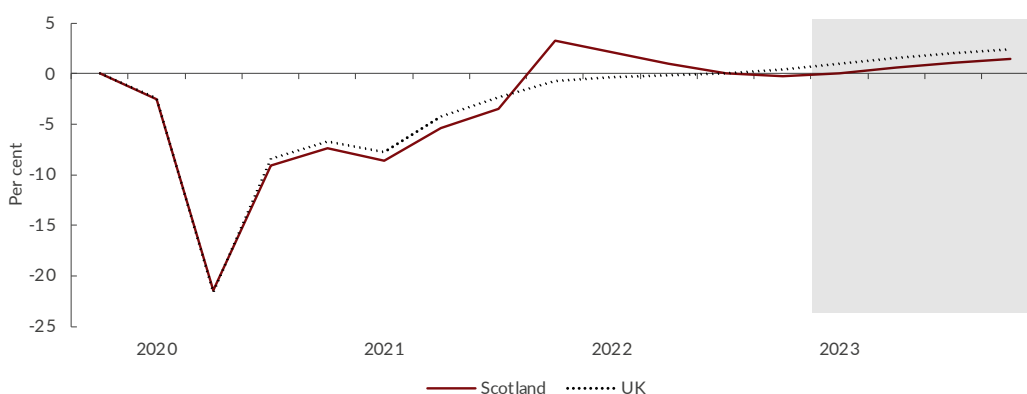
Across all the major regional indicators – economic output (GVA), employment and productivity – the Scottish economy closely mirrors trends in the aggregate UK economy. The uptick in employment and output from the COP26 summit in 2021 has been largely temporary, and the momentum from the ambitious ten-year plan for economic transformation has so far been largely negated by subsequent political instability.

Nevertheless, we project Scottish output to remain slightly lower than UK output (relative to pre-Covid levels) in the medium run. However, driven partly by lower unemployment, employment growth will be slightly higher than for the aggregate UK economy. This reflects marginally reduced productivity almost at par with the United Kingdom as a whole, but lagging behind the better performing English regions.

There are strong prospects for creating better jobs, particularly in green and international trading sectors. However, how far the socio-political institutions can support such a proactive strategy of higher growth and enhanced well-being remains to be seen. Against the face of severe stress on public finances, the Scottish Government is signalling a shift in focus from universal provision of public goods towards more targeted support to alleviate poverty. While such targeting is fiscally responsible, as emphasized in previous NIESR publications (Bhattacharjee et al., 2022a-d and 2023), this must not come at the cost of supporting education and health – important drivers of future growth.

### GVA

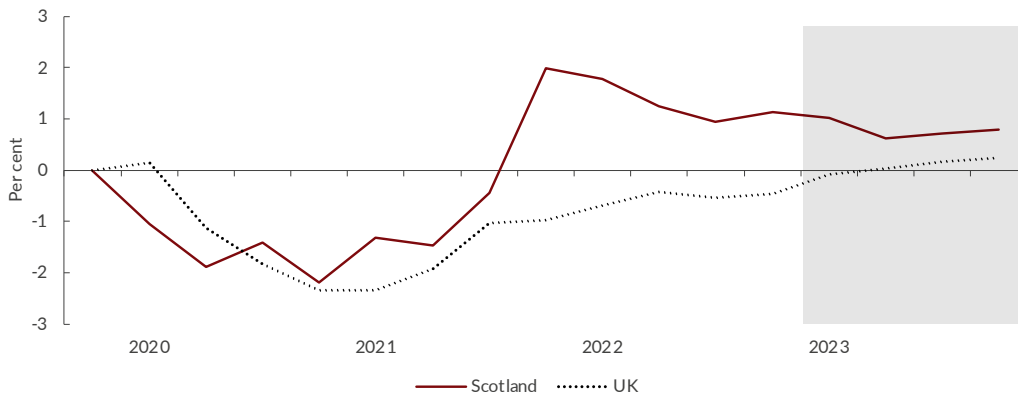
Figure 2.11 GVA in Scotland relative to the fourth quarter of 2019



Source: NiReMS.

## Employment

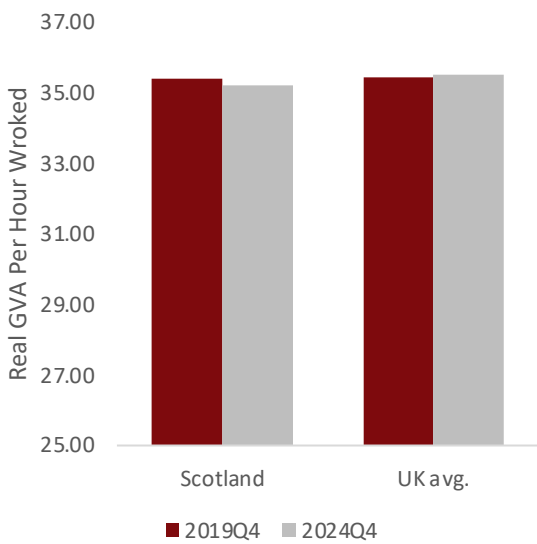
Figure 2.12 Employment in Scotland relative to the fourth quarter of 2019



Source: NiReMS.

## Productivity

Figure 2.13 Productivity in Scotland



Source: NiReMS.

## Wales economic outlook

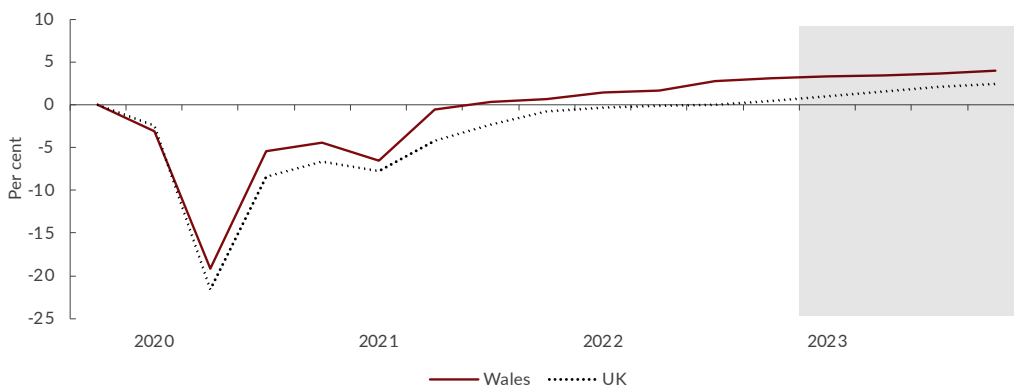
- Welsh economic output as measured by GVA is above the UK average and above pre-Covid levels (Figure 2.14).
- Welsh employment numbers saw a slight upwards revision in the first quarter of 2023, but also a further drop this quarter. Welsh employment is now projected to recover slower than we projected in our previous outlook (Figure 2.15), which jeopardises Wales' economic prospects.
- One reason why we expect Welsh employment to recover is on account of the two new freeports. These are expected to bring £5bn of investment and create 20,000 jobs in Wales. What proportion of jobs created will be new, as opposed to simply moving economic activity regionally, remains to be seen.
- The industries that are expected to benefit from the new freeports are the aerospace industry and oil refining. These industries can help the region retain export led growth.
- The output and employment outlooks imply that Welsh productivity will rise, albeit very slowly and from a very low base (Figure 2.16).

In the medium run, output and employment growth trends in Wales mirror those of the United Kingdom as a whole. But severe structural challenges remain in the form of poor productivity. The location of two new freeports – one in the south and the other in the north – provides some prospect for export-led growth. Together, these also offer the potential for renewable energy, substituting for a drawdown on coal mining. However, prospects for internationally tradeable products – beyond aerospace, and to a limited extent, refining and agro-industry – remain limited.

Inactivity continues to be a substantial challenge. In the third quarter of 2022, more than 25 per cent of the working age population in Wales was economically inactive – the third highest amongst devolved nations and English regions (after Northern Ireland and the North East). This is also related to the fact that health services in Wales are amongst the worst in Wales. Strong supply side policies are required to improve participation and productivity in high value activities. Failing this, the chances of catching up in the medium run will remain very low.

### GVA

Figure 2.14 GVA in Wales relative to the fourth quarter of 2019

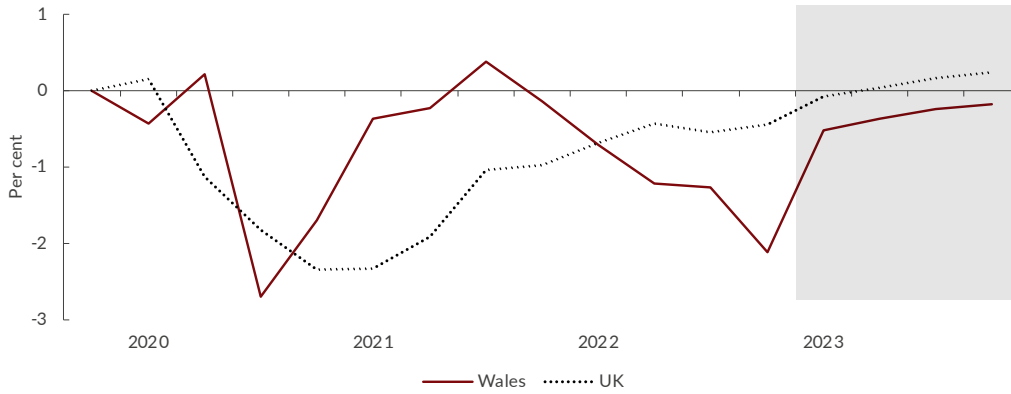


Source: NiReMS.



## Employment and inactivity

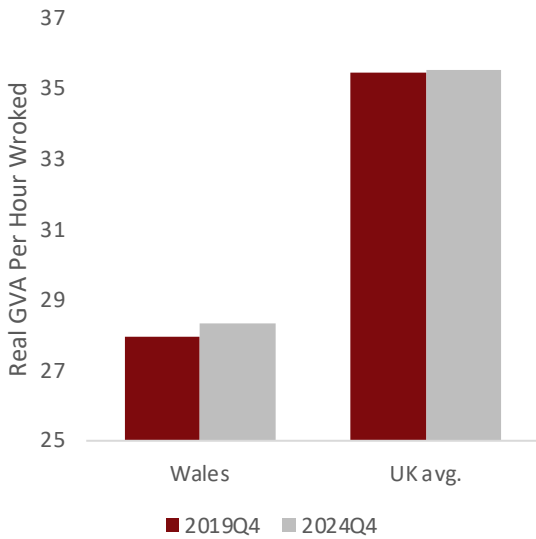
Figure 2.15 Employment in Wales relative to the fourth quarter of 2019



Source: NiReMS.

## Productivity

Figure 2.16 Productivity in Wales



Source: NiReMS.

## Northern Ireland economic outlook

- Northern Irish economic output as measured by GVA is above average UK levels and exceeds pre-Covid levels (Figure 2.17). Furthermore, Northern Ireland emerged from a technical recession in the final quarter of 2022 with growth of 1.4 per cent in the first quarter of 2023.
- Northern Ireland's economy shows signs of further improvement with increased confidence reported in the latest survey results conducted by the NI Chamber of Commerce. The positive outlook is underscored by falling inflation, especially falling energy prices, which will help businesses.
- Employment numbers were revised upwards last quarter, and this has carried over to higher employment figures this quarter, putting the region on a better trajectory (Figure 2.18). While we still project the region not to attain pre-Covid levels next year, its employment outlook is not as negative as anticipated.
- Output growth and employment numbers mean that we forecast Northern Ireland's productivity to grow (Figure 2.19).
- Uncertainty about operationalising the Windsor Framework looms over NI businesses which poses a risk for future growth.
- The impact of high inflation is still being felt in Northern Ireland. The latest Stormont budget highlights this with cuts in real terms across various public spending areas. Excessive fiscal consolidation can damage public service provision and in turn hinder future productivity growth.

Partly driven by the Northern Ireland Protocol, Northern Ireland rode the Brexit shock somewhat better than the other devolved nations and the English regions. This also led to slightly better growth trajectories compared with the United Kingdom as a whole. Sectoral reallocation of economic activity has led to an uptick in productivity.

At the same time, social and political instability has placed severe constraints on the Northern Irish economy. Public services are struggling at the same time as poorer segments of society are hard hit by the cost-of-living crisis. The Windsor Agreement offers some potential for better coordination and collaboration with EU member-states, not least the Republic of Ireland. Hence, long run prospects will depend on Northern Ireland's ability to attract foreign investment in high-value goods and services. With Stormont still remaining in limbo, the prospects for the medium to long-run future remain uncertain.

### GVA

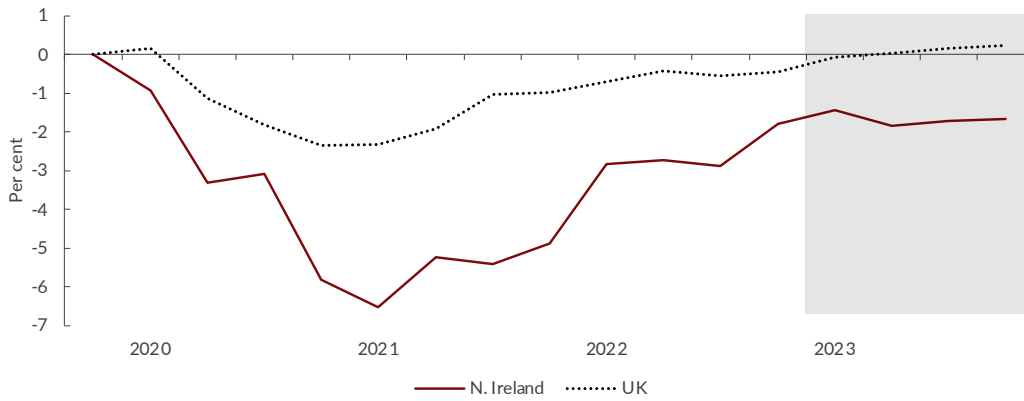
Figure 2.17 GVA in Northern Ireland relative to the fourth quarter of 2019



Source: NiReMS.

## Employment

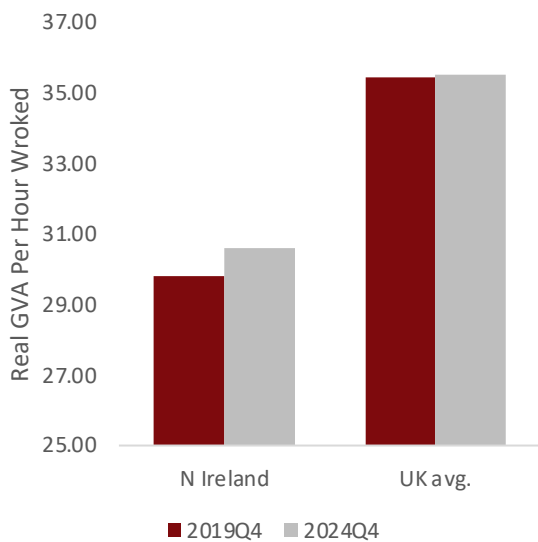
**Figure 2.18** Employment in Northern Ireland relative to the fourth quarter of 2019



Source: NiReMS.

## Productivity

**Figure 2.19** Productivity in Northern Ireland



Source: NiReMS.

## England's regions

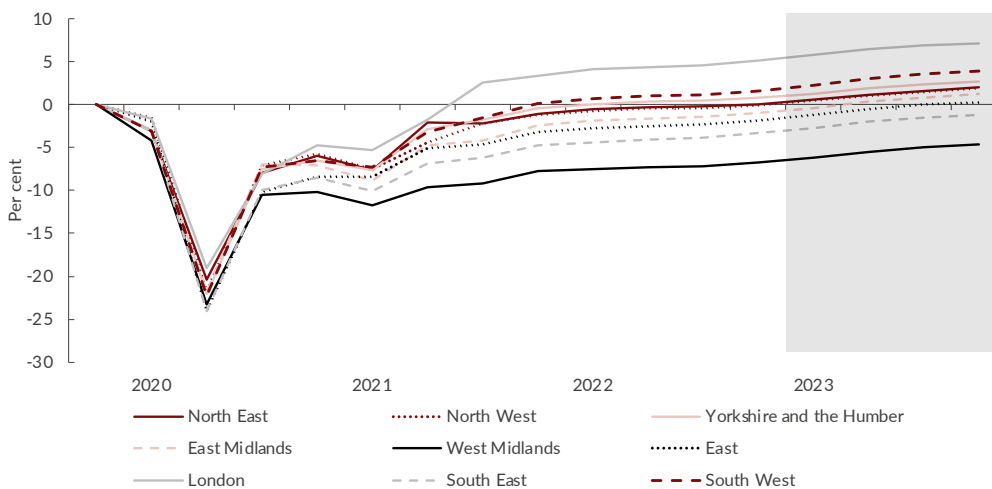
- In terms of GVA, the only region well below pre-Covid levels is the West Midlands with the other regions expected to be around pre-Covid levels by the end of 2023 (Figure 2.20).
- Of the regions still below pre-Covid levels, only the West Midlands and the non-metropolitan parts of the South East are projected by the end of 2024 still to be lower than in the final quarter of 2019 (although the South East will be only just below its level in the fourth quarter of 2019)
- Employment trends show that the North West and the East Midlands are expected to be the worst performers (Figure 2.21). The South East region is also projected to be below pre-Covid levels at the end of 2024.
- Every other region is around pre-Covid levels and is expected to be above pre-Covid levels in early 2024 (Figure 2.21). The South West saw a surprise uptick in employment in the final quarter of 2022. It will be interesting to see whether this will translate into a better employment trend: for now, we project South West employment to return to its trend.
- London remains the strongest performer amongst the English regions for output, employment and productivity (Figure 2.20, 2.21 and 2.23).
- Productivity in the North West, the North East, Yorkshire and Humber, the East, and the South West will grow, albeit at a lower rate than in London (Figure 2.23).

Our outlook for the English regions remains a story of two nations. While London and metropolitan regions of the South East demonstrate resilience and are powering ahead, many other regions, particularly in the Midlands and the North continue to fall further behind. Part of this is the persistence of historical decline linked to deindustrialisation (Stansbury et al., 2023a). The communities and regions that have been left behind since the 1980s have been hardest hit by the Covid-19 shock and the cost-of-living crisis. Business profits, particularly in the Midlands and East of England, have struggled to recover from Covid-19, not least because of a loss of export momentum connected with post-Brexit trade restrictions.

Local elections in England took place against this backdrop. There is discontent within society, as reflected in continued industrial action, together with dissatisfaction about persistently low levels of infrastructure investment, not only in health and education, but also in water, sewage and housing. Pressures on local public service provision are becoming a salient political issue. The slow allocation of very limited 'Levelling Up' funds has added to the general sense of disillusionment and a bleak outlook for the short-term future. Better devolution arrangements and sustained regional regeneration are more urgent than ever, yet progress in these has been rather limited.

## GVA

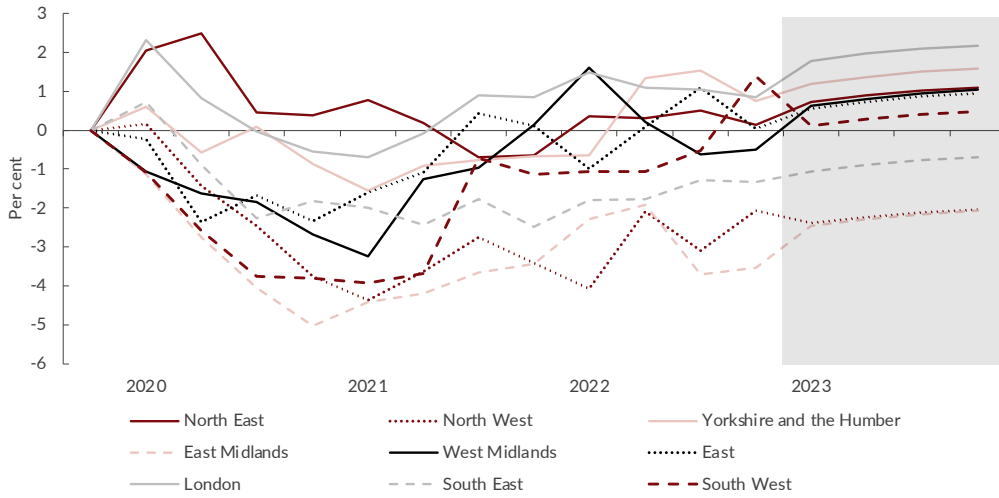
Figure 2.20 GVA in the English regions relative to the fourth quarter of 2019



Source: NiReMS.

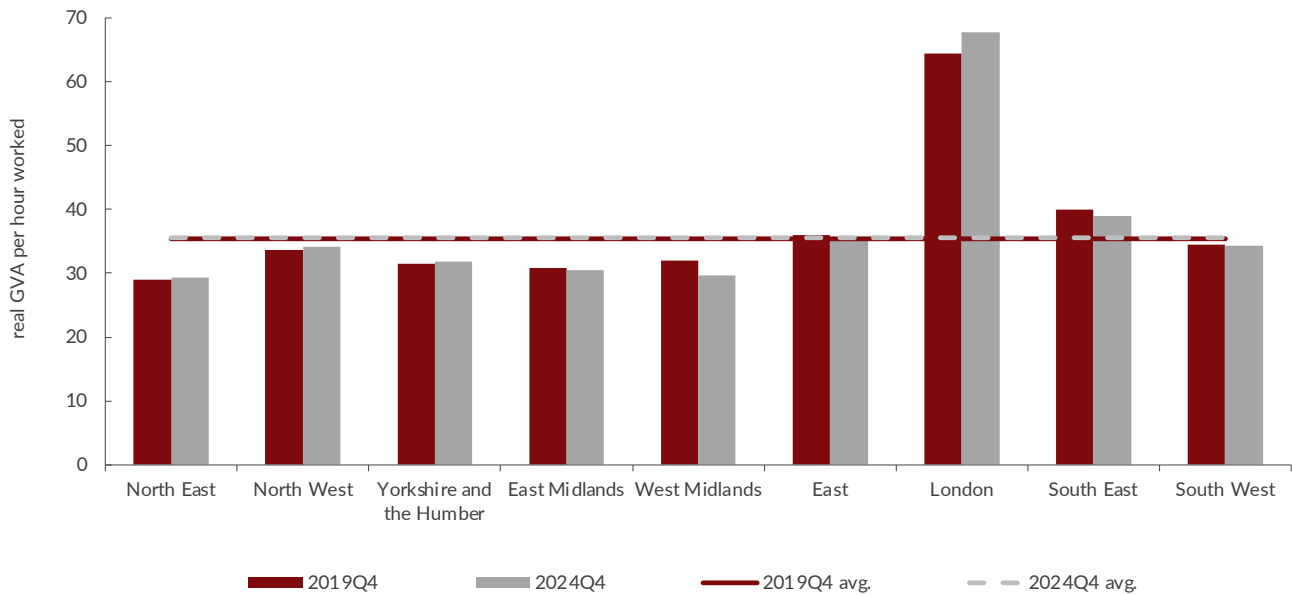
## Employment

**Figure 2.21** Employment in the English regions relative to the fourth quarter of 2019



Source: NiReMS.

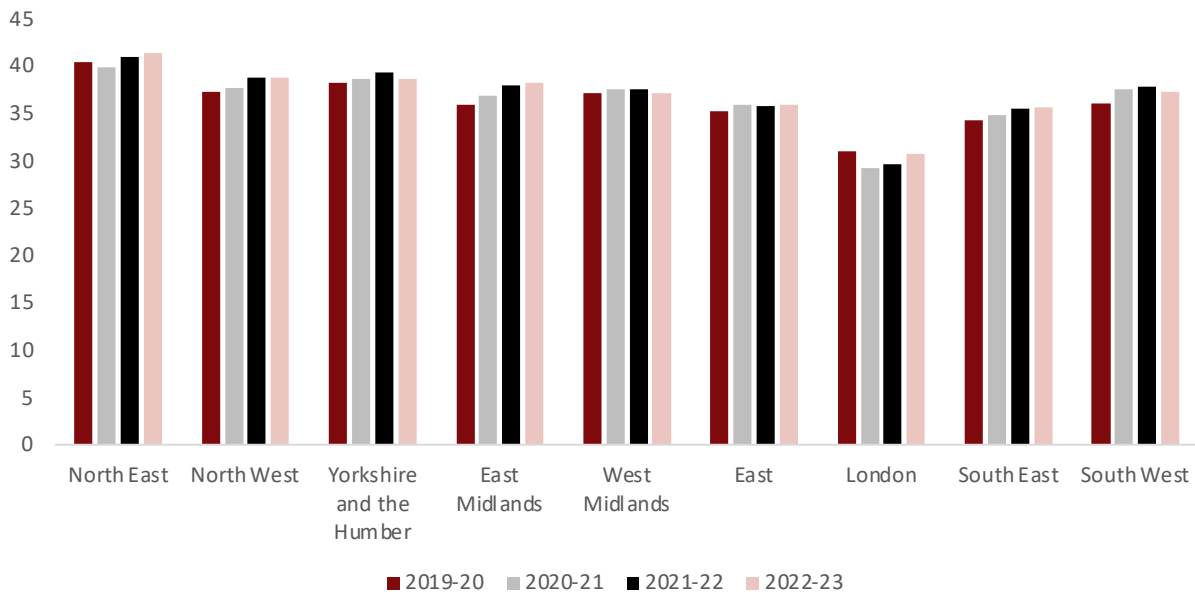
**Figure 2.22** Inactivity rates in the English regions



Source: NiReMS.

## Productivity

Figure 2.23 Productivity in the English regions



Source: NiReMS.

## A generational task: Policy options for the short and medium term

### Helping the hardest hit households with the cost-of-living crisis

While three-quarters of UK households will see their disposable incomes increase in 2023-24 compared with 2022-23, the bottom half of the income distribution – some 14 million households – will have lower living standards than two years ago. Instead of a general subsidy to everyone, policy needs to be targeted at the half of the population who need it most.

The Chancellor's decision in the March 2023 Budget to hold the Energy Price Guarantee (EPG) at £2,500 for three months and maintain the 5p fuel duty cut was welcome as it cushions the blow of the energy price shock. As a result, the bottom half of the income distribution has seen energy bills reduced between £800 and £1,000 (worth between 1.2 per cent and 6.2 per cent of their disposable income) compared with the previously announced rise in the EPG to £3,000.

The decision to bring prepayment energy metre charges in line with direct debit charges is welcome news for some of the poorest households up and down the country. But many low-income households will still pay more than 10 per cent of their disposable incomes on energy.

To target help, NIESR has long argued for a Variable Price Cap for energy whereby the price per unit increases with usage (Chadha, 2022a; Bhattacharjee et al., 2022b). This, coupled with a Social Tariff Discount as proposed by the government, would help the hardest hit households while also incentivising energy saving for the higher-income households who tend to use more energy.

A Variable Price Cap would raise the cost of energy with its usage for all other households, which would lower the bills for the lower-income households who tend to use the least amount of energy and raise it for the higher-income households who tend to use the most. This could be cost-neutral and would still incentivise lower energy demand (Fetzer, 2023).

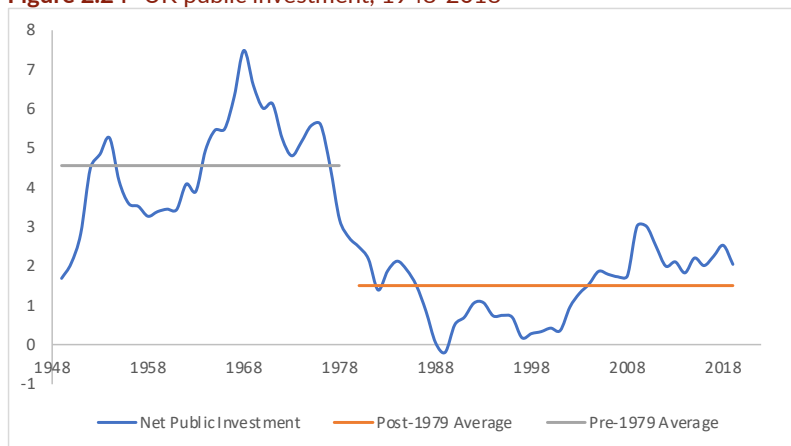
A Social Tariff would work by applying a discount to households which energy companies identify as poor or vulnerable, would be the most effective tool in lowering the bills of the poorest. An opt-in Social Tariff could be brought in this year to provide targeted help.

## Boosting public investment

In the 2023 budget presented to Parliament on 15 March, the Chancellor made the welcome announcement of specific spending commitments, including higher public expenditure on national defence and on childcare. However, there were few if any pledges on public sector pay (though some settlements have since then been struck, including 5 per cent for more than a million NHS staff). Crucially, the government has not announced more public investment at a time of low growth, flatlining productivity and persistently high inflation.

On current projections, public sector net investment will rise to approximately 2 per cent of GDP over the forecast horizon, which is welcome given the average of 1 per cent of GDP and the persistent problem of low investment since the late 1970s (Chadha and Samiri, 2022; Figure 2.24).

**Figure 2.24** UK public investment, 1948-2018



Source: Chadha and Samiri (2022), p. 27.

But raising public sector net investment to around 2 per cent of GDP over the OBR's forecast horizon of 2023/24 - 2027/28 is still not sufficient to make up for historic under-investment, which would mean some 3 per cent of GDP or so. As it stands, the government's plan represents a fall in public investment relative to the 2022 Autumn Statement. As a result, the economy will likely be on a lower path compared with the growth and productivity potential.

3 per cent of GDP amounts to approximately £435bn over the forecast horizon, or around £80bn per year. Even if the government achieves its planned target of 2 per cent of GDP, i.e. £290bn over this period or £60bn per year, the gap is £145bn over the forecast horizon or £20bn per year. Given that the inflation tax (NIESR, 2023), by inflating the public finances, has generated sufficient fiscal space, it is now possible and indeed advisable to increase public investment without adding to inflationary pressures. Moreover, tight fiscal policy in the wake of the 2008 financial crash has reduced public investment (with net fixed capital formation averaging about 1 per cent of GDP for the past quarter of a century) and infrastructure investment (Chadha, 2023).

NIESR has argued for the past two years that the United Kingdom needs a new fiscal framework (Chadha et al., 2021) with a focus on public investment in addition to budget deficit and debt targets. Our proposals include institutional reform to bring together investment advice and vehicles such as the National Infrastructure Commission and the UK Infrastructure Bank under the umbrella of a new National Development Bank to help take public investment to the required level of 3 per cent of GDP over the OBR's forecast horizon. Such a strategy would channel capital into building up productive capacity and growing national assets.

## A long-term commitment to levelling up

Plans to create 12 investment zones – eight in England, and four in the three devolved nations – clustered around universities provide greater certainty for companies to invest, but they lack institutions to disseminate R&D and sufficient public funding to unlock greater business investment. Coupled with the three-year limit on full capital expensing and the abolition of Local Enterprise Partnerships (LEPs), this adds to the short-term outlook of, and the constant churn in, policy making (Pabst and Westwood, 2021).

The Chancellor's announcements for several regeneration projects and Levelling Up partnerships underline the government's general commitment to regional regeneration, as does the planned transfer of further fiscal powers to mayors and combined authorities such as the Greater Manchester Combined Authority. While these plans are a step in the right direction, there was little detail about which decision-making powers and resources would be devolved. Further devolution of skills spending is certainly welcome. As Andy Westwood (2023) has argued, "both Greater Manchester and West Midlands now have nearly full control of the post-19 skills system and new 'co-control' of 16-19 policy too. Across the deals as a whole they also have the promise of 'single pot funding' in the next spending review, so that if they wish to commit more funding to skills – or any other area – they will be able to do so".

The creation of Levelling Up Partnerships will enable 20 places across the country to access a fund of £400 million, which will involve community organisations and residents in setting their priorities. All this is promising as it strengthens civil society participation and the attempt to boost civic cohesion. But as with the separate sixteen regeneration programmes totalling £200 million, it adds to the sense that Levelling Up funding streams remain fragmented and that local or regional authorities will spend precious time and resources trying to access these underspent funds.

Fundamentally, the question is whether Levelling Up will benefit all the regions that have fallen behind since the 1980s. While the policies will help cities, there is no evidence that city development will generate sufficient spill-overs to suburban, rural and coastal areas. Cities and clusters are vitally important, but more investment and a better institutional ecology will be needed to regenerate the United Kingdom as a whole. Regional and local specialisation, drawing on specific sectoral strengths (Stansbury et al., 2023b), should be at the heart of a medium- and long-term plan that is equally place- and people-based. The Caroline age can draw inspiration not only from the historical experience of Tudor statecraft, Victorian renewal and postwar reconstruction, but also from the contemporary realisation of the country's significant potential.

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# Forecast tables:

**Table A1** Exchange rates and interest rates

	UK exchange rates			FTSE All-share index	10-year gilts	World <sup>a</sup>	Bank Rate <sup>b</sup>
	Effective 2017=100	Dollar	Euro				
2017	100.0	1.29	1.14	2930	1.20	1.20	0.41
2018	101.9	1.34	1.13	2937	1.40	1.90	0.75
2019	101.4	1.28	1.14	2898	0.90	2.10	0.75
2020	101.9	1.28	1.13	2537	0.30	0.90	0.10
2021	106.7	1.38	1.16	2900	0.80	1.10	0.13
2022	104.8	1.24	1.17	2953	2.40	2.20	2.83
2023	103.8	1.24	1.13	3077	3.40	4.60	4.50
2024	104.1	1.26	1.13	3296	3.40	4.50	4.14
2025	103.8	1.26	1.13	3532	3.30	3.80	3.79
2026	103.4	1.26	1.12	3685	3.30	3.60	3.43
2027	103.3	1.25	1.12	3781	3.20	3.50	3.25
2022Q1	108.0	1.34	1.20	3025	1.40	1.20	0.45
2022Q2	105.3	1.25	1.18	2986	2.00	1.70	0.95
2022Q3	102.9	1.18	1.17	2914	2.60	2.50	1.62
2022Q4	102.8	1.17	1.15	2889	3.50	3.50	2.83
2023Q1	102.6	1.22	1.13	3076	3.40	4.20	3.85
2023Q2	104.3	1.25	1.13	3055	3.50	4.70	4.33
2023Q3	104.2	1.25	1.13	3055	3.50	4.70	4.50
2023Q4	104.2	1.25	1.13	3121	3.40	4.80	4.50
2024Q1	104.2	1.25	1.13	3184	3.40	4.70	4.41
2024Q2	104.1	1.26	1.13	3276	3.40	4.60	4.32
2024Q3	104.1	1.26	1.13	3326	3.40	4.40	4.23
2024Q4	104.0	1.26	1.13	3400	3.30	4.20	4.14
Percentage changes							
2017/2016	-5.6	-4.9	-6.7	14.2			
2018/2017	1.9	3.6	-1.0	0.3			
2019/2018	-0.5	-4.4	0.9	-1.3			
2020/2019	0.5	0.5	-1.3	-12.5			
2021/2020	4.7	7.2	3.3	14.3			
2022/2021	-1.8	-10.1	0.9	1.8			
2023/2022	-0.9	0.4	-3.4	4.2			
2024/2023	0.2	1.1	-0.2	7.1			
2025/2024	-0.3	0.2	-0.5	7.1			
2026/2025	-0.4	-0.3	-0.5	4.3			
2027/2026	-0.1	-0.2	-0.2	2.6			
2022Q4/2021Q1	-3.9	-12.9	-2.3	-3.6			
2023Q4/2022Q1	1.3	6.6	-1.6	8.1			
2024Q4/2023Q1	-0.2	0.5	-0.4	8.9			

Notes: <sup>a</sup> Weighted average of central bank intervention rates in OECD economies. <sup>b</sup> End of period.

**Table A2** Price indices (2019=100)

	Unit labour costs	Imports deflator	Exports deflator	World Oil Price (\$) <sup>a</sup>	Consumption deflator	GDP deflator (market prices)	Consumer prices		
							RPI <sup>b</sup>	CPI <sup>c</sup>	CPIH <sup>d</sup>
2017	94.5	96.5	95.9	54.0	96.7	96.3	94.3	95.9	96.1
2018	97.1	98.5	98.0	70.4	98.4	97.9	97.5	98.2	98.3
2019	100.0	100.0	100.0	63.7	100.0	100.0	100.0	100.0	100.0
2020	113.6	98.5	100.3	43.0	101.0	106.2	101.5	100.8	101.0
2021	111.3	103.9	103.9	69.9	103.5	106.0	105.6	103.5	103.5
2022	114.8	120.9	117.5	97.2	111.7	111.7	117.8	112.8	111.7
2023	119.6	123.2	120.3	83.9	118.7	117.9	133.2	121.2	118.7
2024	122.2	124.6	121.0	79.5	123.2	122.2	141.6	125.9	123.2
2025	124.0	125.9	123.2	77.3	125.9	125.0	145.5	128.3	125.8
2026	127.3	128.5	126.0	78.4	129.4	128.5	150.1	131.6	129.3
2027	130.5	131.2	128.8	79.6	132.9	131.9	154.7	134.9	132.8
Percentage changes									
2017/2016	1.4	6.0	4.5	25.8	1.7	1.8	3.6	2.7	2.6
2018/2017	2.7	2.1	2.1	30.5	1.7	1.7	3.3	2.4	2.3
2019/2018	3.0	1.5	2.1	-9.6	1.7	2.1	2.6	1.8	1.7
2020/2019	13.6	-1.5	0.3	-32.5	1.0	6.2	1.5	0.8	1.0
2021/2020	-2.0	5.4	3.7	62.6	2.5	-0.2	4.1	2.6	2.5
2022/2021	3.2	16.4	13.0	39.0	7.9	5.4	11.6	9.1	7.9
2023/2022	4.2	2.0	2.4	-13.7	6.2	5.6	13.1	7.4	6.2
2024/2023	2.1	1.1	0.6	-5.2	3.8	3.6	6.3	3.9	3.8
2025/2024	1.5	1.0	1.8	-2.8	2.1	2.3	2.8	1.9	2.1
2026/2025	2.7	2.1	2.3	1.4	2.8	2.8	3.1	2.5	2.8
2027/2026	2.5	2.1	2.2	1.4	2.7	2.7	3.1	2.5	2.7
2022Q4/2021Q1	6.2	14.3	12.5	9.9	9.7	7.3	13.9	10.8	9.4
2023Q4/2022Q1	3.7	-0.7	0.1	-2.8	4.5	4.8	11.0	5.4	4.5
2024Q4/2023Q1	0.6	1.1	0.4	-8.8	2.9	2.6	4.1	2.6	2.9

Notes: <sup>a</sup> Per barrel, average of Dubai and Brent spot prices. <sup>b</sup> Retail price index. <sup>c</sup> Consumer price index. <sup>d</sup> Consumer prices index, including owner occupiers' housing costs.

**Table A3** Gross domestic product and components of expenditure (£ billion, 2019 prices)

	Final consumption expenditure		Gross capital formation		Domestic demand	Total exports <sup>c</sup>	Total final expenditure	Total imports <sup>c</sup>	Net trade	GDP at market prices <sup>d</sup>
	H-Holds & NPISH <sup>a</sup>	General govt.	Gross fixed investment	Changes in inventories <sup>b</sup>						
2017	1391	407	397	13	2193	667	2860	694	-27	2166
2018	1425	409	396	4	2232	688	2920	717	-29	2203
2019	1440	426	403	6	2275	700	2974	736	-36	2238
2020	1250	395	361	-12	1994	615	2609	618	-3	1991
2021	1329	444	383	15	2170	629	2799	656	-27	2143
2022	1403	452	416	-5	2266	691	2957	743	-52	2231
2023	1386	426	410	0	2222	711	2933	713	-3	2238
2024	1374	399	398	0	2171	695	2866	633	62	2251
2025	1384	383	401	0	2168	704	2872	614	90	2276
2026	1395	374	403	0	2172	727	2898	617	110	2300
2027	1408	370	406	0	2184	755	2940	629	126	2329
Percentage changes										
2017/2016	1.9	0.4	3.5		1.5	6.8	2.7	3.3		2.4
2018/2017	2.5	0.3	-0.2		1.8	3.1	2.1	3.3		1.7
2019/2018	1.1	4.1	1.9		1.9	1.7	1.9	2.6		1.6
2020/2019	-13.2	-7.3	-10.5		-12.3	-12.1	-12.3	-16.0		-11.0
2021/2020	6.2	12.5	6.1		8.8	2.2	7.3	6.2		7.6
2022/2021	5.6	1.8	8.6		4.4	9.9	5.6	13.3		4.1
2023/2022	-1.2	-5.7	-1.4		-1.9	2.8	-0.8	-4.0		0.3
2024/2023	-0.9	-6.5	-2.8		-2.3	-2.2	-2.3	-11.3		0.6
2025/2024	0.8	-4.0	0.7		-0.1	1.3	0.2	-3.0		1.1
2026/2025	0.8	-2.3	0.5		0.2	3.3	0.9	0.5		1.0
2027/2026	1.0	-1.0	0.8		0.6	3.9	1.4	2.0		1.3
Decomposition of growth in GDP (percentage points)										
2016	2.3	0.2	0.9	-0.1	2.4	0.9	3.4	-1.2	-0.3	2.2
2017	1.2	0.1	0.6	0.2	1.5	2.0	3.5	-1.0	1.0	2.4
2018	1.6	0.1	0.0	-0.4	1.8	1.0	2.8	-1.1	-0.1	1.7
2019	0.7	0.8	0.3	0.0	1.9	0.5	2.5	-0.9	-0.3	1.6
2020	-8.5	-1.4	-1.9	-0.8	-12.5	-3.8	-16.3	5.3	1.5	-11.0
2021	3.9	2.5	1.1	1.3	8.9	0.7	9.6	-1.9	-1.2	7.6
2022	3.5	0.4	1.5	-0.9	4.4	3.0	7.3	-4.2	-1.2	4.1
2023	-0.7	-1.2	-0.3	0.2	-1.9	1.0	-1.1	1.2	2.2	0.3
2024	-0.6	-1.2	-0.5	0.0	-2.3	-0.7	-3.0	3.6	2.9	0.6
2025	0.5	-0.7	0.1	0.0	-0.1	0.4	0.3	0.8	1.2	1.1
2026	0.5	-0.4	0.1	0.0	0.2	1.0	1.2	-0.1	0.9	1.0

Notes: <sup>a</sup> Non-profit institutions serving households. <sup>b</sup> Including acquisitions less disposals of valuables and quarterly alignment adjustment. <sup>c</sup> Includes Missing Trader Intra-Community Fraud. <sup>d</sup> Components may not add up to total GDP growth due to rounding and the statistical discrepancy included in GDP.

**Table A4** External sector

	Exports of goods <sup>a</sup>	Imports of goods <sup>a</sup>	Net trade in goods <sup>a</sup>	Exports of services	Imports of services	Net trade in services	Export price competitiveness <sup>c</sup>	World trade <sup>d</sup>	Terms of trade <sup>e</sup>	Current balance
	£ billion, 2019 prices <sup>b</sup>						2019=100			% of GDP
2017	356	497	-141	311	197	114	98.1	92.2	99.4	-3.6
2018	357	499	-142	331	218	113	100.9	95.7	99.4	-4.1
2019	364	512	-148	336	224	112	100.0	100.0	100.0	-2.9
2020	316	449	-133	299	169	130	100.3	92.4	101.7	-3.1
2021	317	472	-156	312	184	129	106.0	100.0	100.1	-1.5
2022	347	521	-174	344	222	122	107.5	106.1	97.2	-3.8
2023	370	503	-133	341	210	130	103.9	108.5	97.6	-5.9
2024	363	452	-89	332	181	151	101.9	111.4	97.1	-3.3
2025	370	444	-74	334	170	164	101.4	115.7	97.9	-2.0
2026	385	452	-67	342	165	177	101.3	120.3	98.1	-1.3
2027	402	465	-63	354	164	190	101.6	124.6	98.1	-0.3
Percentage changes										
2017/2016	7.0	2.4		6.7	5.8		-2.8	5.2	-1.4	
2018/2017	0.2	0.3		6.4	10.8		2.9	3.8	0.0	
2019/2018	1.9	2.6		1.5	2.7		-0.9	4.5	0.6	
2020/2019	-13.0	-12.3		-11.1	-24.7		0.3	-7.6	1.7	
2021/2020	0.2	5.2		4.5	8.7		5.7	8.2	-1.6	
2022/2021	9.7	10.4		10.1	20.8		1.4	6.0	-2.8	
2023/2022	6.6	-3.6		-0.9	-5.1		-3.3	2.3	0.4	
2024/2023	-2.1	-10.2		-2.4	-13.9		-1.9	2.7	-0.5	
2025/2024	2.0	-1.7		0.4	-6.3		-0.5	3.9	0.8	
2026/2025	4.0	1.7		2.5	-2.7		-0.1	3.9	0.2	
2027/2026	4.4	3.0		3.5	-0.5		0.3	3.6	0.1	

Notes: <sup>a</sup> Includes Missing Trader Intra-Community Fraud. <sup>b</sup> Balance of payments basis. <sup>c</sup> A rise denotes a loss in UK competitiveness.

<sup>d</sup> Weighted by import shares in UK export markets. <sup>e</sup> Ratio of average value of exports to imports.

**Table A5** Household sector

	Average <sup>a</sup> earnings	Employee compensation	Total personal income	Gross disposable income	Real disposable income <sup>b</sup>	Final consumption expenditure	Saving ratio <sup>c</sup>	House prices <sup>d</sup>	Net worth to income ratio <sup>e</sup>
	£ billion, current prices				£ billion, 2019 prices		% of GDP	2019=100	
2017	93.5	997	1742	1353	1399	1391	5.1	95.9	7.3
2018	96.1	1042	1814	1409	1432	1425	5.1	99.1	6.8
2019	100.0	1090	1889	1462	1462	1440	5.3	100.0	7.0
2020	100.1	1095	1892	1458	1443	1250	15.8	102.8	7.6
2021	105.0	1161	1990	1513	1462	1329	12.6	111.9	7.7
2022	111.7	1248	2138	1610	1441	1403	8.5	123.4	7.0
2023	116.2	1304	2238	1699	1431	1386	9.4	121.8	6.6
2024	119.1	1339	2300	1745	1416	1374	9.3	116.3	6.5
2025	121.6	1375	2367	1779	1413	1384	8.5	114.9	6.4
2026	125.6	1426	2456	1839	1421	1395	8.4	115.5	6.3
2027	129.7	1480	2554	1913	1439	1408	8.7	117.9	6.3
Percentage changes									
2017/2016	2.8	3.9	3.3	2.8	1.0	1.9		4.5	
2018/2017	2.9	4.5	4.1	4.2	2.4	2.5		3.3	
2019/2018	4.0	4.6	4.1	3.8	2.1	1.1		0.9	
2020/2019	0.1	0.4	0.1	-0.3	-1.3	-13.2		2.8	
2021/2020	5.0	6.0	5.2	3.7	1.3	6.2		8.8	
2022/2021	6.4	7.5	7.4	6.5	-1.4	5.6		10.3	
2023/2022	4.0	4.5	4.7	5.5	-0.7	-1.2		-1.4	
2024/2023	2.5	2.7	2.7	2.7	-1.1	-0.9		-4.5	
2025/2024	2.1	2.6	2.9	1.9	-0.2	0.8		-1.2	
2026/2025	3.3	3.8	3.7	3.4	0.6	0.8		0.6	
2027/2026	3.3	3.7	4.0	4.0	1.2	1.0		2.0	

Notes: <sup>a</sup> Average earnings equals total labour compensation divided by the number of employees. <sup>b</sup> Deflated by consumers' expenditure deflator. <sup>c</sup> Includes adjustment for change in net equity of households in pension funds. <sup>d</sup> Office for National Statistics, mix-adjusted. <sup>e</sup> Net worth is defined as housing wealth plus net financial assets.

**Table A6** Fixed investment and capital (£ billion, 2019 prices)

	Gross Capital Formation				User cost of capital (%)	Corporate profit share of GDP (%)	Capital stock	
	Business investment	Private housing <sup>a</sup>	General government	Total			Private	Public <sup>b</sup>
2017	226	104	67	397	12.9	25.5	3674	739
2018	222	110	64	396	12.7	24.8	3730	755
2019	225	112	66	403	12.9	24.5	3785	773
2020	198	94	69	361	12.9	24.4	3793	793
2021	200	110	73	383	10.3	24.1	3815	817
2022	222	118	68	416	9.7	24.4	3878	833
2023	210	113	87	410	14.7	26.3	3920	866
2024	204	108	86	398	14.7	26.6	3951	896
2025	212	105	85	401	14.6	27.9	3984	923
2026	217	102	84	403	14.3	28.3	4018	948
2027	221	101	85	406	14.2	28.9	4053	972
Percentage changes								
2017/2016	1.1	10.3	3.0	3.5			3.6	-6.3
2018/2017	-1.5	6.1	-5.4	-0.2			1.5	2.2
2019/2018	1.3	1.8	3.7	1.9			1.5	2.4
2020/2019	-11.9	-16.0	3.6	-10.5			0.2	2.6
2021/2020	0.9	16.9	6.2	6.1			0.6	3.0
2022/2021	10.8	7.4	-6.7	8.6			1.6	1.9
2023/2022	-5.3	-4.4	27.8	-1.4			1.1	4.0
2024/2023	-2.8	-4.6	-0.6	-2.8			0.8	3.5
2025/2024	3.8	-2.9	-2.0	0.7			0.8	3.0
2026/2025	2.1	-2.2	-0.3	0.5			0.9	2.7
2027/2026	2.2	-1.7	0.3	0.8			0.9	2.5

Notes: <sup>a</sup> Includes private sector transfer costs of non-produced assets. <sup>b</sup> Including public sector non-financial corporations.

**Table A7** Productivity and the labour market (thousands unless otherwise stated)

	Employment		ILO unemployment	Labour force <sup>b</sup>	Population of working age <sup>c</sup>	Productivity (2019=100) per hour	ILO unemployment rate
	Employees	Total <sup>a</sup>					
2017	27065	32057	1476	33533	41169	98.9	4.4
2018	27494	32439	1380	33819	41260	99.7	4.1
2019	27652	32799	1306	34105	41344	100.0	3.8
2020	27752	32509	1551	34060	41362	99.9	4.6
2021	28023	32407	1525	33931	41392	101.1	4.5
2022	28324	32744	1262	34006	41532	101.6	3.7
2023	28462	32954	1372	34326	41635	101.0	4.0
2024	28529	33064	1593	34658	41801	101.5	4.6
2025	28686	33247	1609	34856	41942	101.9	4.6
2026	28803	33388	1647	35035	42053	102.4	4.7
2027	28933	33540	1663	35203	42145	103.1	4.7
Percentage changes							
2017/2016	1.1	1.0	-9.6	0.5	0.3	1.4	
2018/2017	1.6	1.2	-6.5	0.9	0.2	0.8	
2019/2018	0.6	1.1	-5.4	0.8	0.2	0.3	
2020/2019	0.4	-0.9	18.8	-0.1	0.0	-0.1	
2021/2020	1.0	-0.3	-1.7	-0.4	0.1	1.2	
2022/2021	1.1	1.0	-17.2	0.2	0.3	0.4	
2023/2022	0.5	0.6	8.7	0.9	0.2	-0.5	
2024/2023	0.2	0.3	16.1	1.0	0.4	0.4	
2025/2024	0.5	0.6	1.0	0.6	0.3	0.4	
2026/2025	0.4	0.4	2.4	0.5	0.3	0.5	
2027/2026	0.4	0.5	1.0	0.5	0.2	0.7	

Notes: <sup>a</sup> Includes self-employed, government-supported trainees and unpaid family members. <sup>b</sup> Employment plus ILO unemployment.

<sup>c</sup> Population projections are based on annual rates of growth from 2018-based population projections by the ONS.



**Table A8** Public sector financial balance and borrowing requirement (£ billion, fiscal years)

		2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27
Current receipts:	Taxes on income	484.1	495.9	562.0	622.9	703.2	725.9	777.4	813.7
	Taxes on expenditure	282.5	144.5	258.4	303.9	269.1	290.9	287.6	298.5
	Other current receipts	60.6	151.6	93.0	75.5	107.0	108.2	107.4	110.5
	Total	827.3	792.0	913.4	1002.3	1079.4	1124.9	1172.4	1222.7
	(as a % of GDP)	36.8	37.9	39.1	39.5	40.5	40.5	40.9	41.0
Current expenditure:	Goods and services	431.5	495.5	512.7	521.1	508.4	499.6	496.3	504.7
	Net social benefits paid	242.0	262.9	261.6	287.0	310.1	317.5	327.9	334.4
	Debt interest	54.8	42.0	75.8	131.1	89.6	75.6	83.4	99.3
	Other current expenditure	64.9	180.7	85.4	97.6	63.0	65.9	67.8	69.0
	Total	793.3	981.2	935.5	1036.7	971.1	958.6	975.4	1007.4
	(as a % of GDP)	35.3	47.0	40.0	40.9	36.4	34.5	34.0	33.7
Depreciation		52.8	53.7	55.1	59.2	61.5	64.0	66.2	68.9
Surplus on public sector current budget <sup>a</sup>		-18.8	-242.9	-77.3	-93.6	46.8	102.3	130.9	146.4
(as a % of GDP)		-0.8	-11.8	-3.3	-3.7	1.7	3.7	4.6	4.9
Gross investment		90.4	123.6	110.7	125.9	174.8	176.7	178.3	178.5
Net investment		37.7	69.9	55.6	66.8	113.3	112.6	112.1	109.7
(as a % of GDP)		1.7	3.3	2.4	2.6	4.2	4.1	3.9	3.7
Total managed expenditure		883.8	1104.8	1046.2	1162.6	1145.9	1135.2	1153.7	1186.0
(as a % of GDP)		39.3	52.9	44.7	45.8	43.0	40.9	40.2	39.7
Public sector net borrowing		56.5	312.8	132.8	163.7	93.6	50.0	34.7	22.1
(as a % of GDP)		2.5	15.0	5.7	6.5	3.5	1.8	1.2	0.7
Public sector net debt (% of GDP)		80.7	96.0	98.9	97.9	98.6	97.6	94.0	89.9
GDP deflator at market prices (2019=100)		100.9	107.2	106.5	113.6	119.1	122.9	125.7	129.4
Money GDP (£ billion)		2247	2088	2339	2537	2666	2776	2869	2985

Notes: These data are constructed from seasonally adjusted national accounts data. This results in differences between the figures here and unadjusted fiscal year data. Data exclude the impact of financial sector interventions, but include flows from the Asset Purchase Facility of the Bank of England. <sup>a</sup> Public sector current budget surplus is total current receipts less total current expenditure and depreciation.

**Table A9** Accumulation (percentage of GDP)

	Households		Companies		General government		Whole economy		Finance from abroad <sup>a</sup>		Net national saving
	Saving	Investment	Saving	Investment	Saving	Investment	Saving	Investment	Total	Net factor income	
2017	3.5	4.8	10.2	11.0	1.0	2.5	14.8	18.4	3.6	1.0	0.0
2018	3.5	4.8	9.3	10.8	1.3	2.6	14.0	18.1	4.1	1.3	-0.8
2019	3.6	4.6	10.7	11.0	1.1	2.7	15.4	18.3	2.9	0.0	0.6
2020	11.5	4.3	10.8	9.8	-8.3	3.1	14.0	17.2	3.1	2.2	-2.2
2021	8.8	4.6	11.9	10.6	-4.0	3.0	16.8	18.3	1.5	-0.5	1.6
2022	5.8	4.9	11.0	11.3	-1.5	3.0	15.4	19.2	3.8	-0.6	0.5
2023	6.5	5.0	9.0	12.4	0.5	4.5	16.0	21.9	5.9	3.9	1.0
2024	6.3	4.9	7.9	12.3	4.2	4.4	18.4	21.6	3.3	4.0	3.4
2025	5.7	4.8	9.8	12.8	4.4	4.3	19.9	21.9	2.0	4.2	4.9
2026	5.6	4.6	10.1	13.0	4.7	4.1	20.4	21.7	1.3	4.4	5.4
2027	5.8	4.5	10.1	13.1	5.3	3.9	21.1	21.5	0.3	4.0	6.2

Notes: Saving and investment data are gross of depreciation unless otherwise stated. <sup>a</sup> Negative sign indicates a surplus for the UK.

**Table A10** Medium- and long-term projections (percentage change unless otherwise stated)

	2021	2022	2023	2024	2025	2026	2027	2028-2032
GDP (market prices)	7.6	4.1	0.3	0.6	1.1	1.0	1.3	1.5
Average earnings	5.0	6.4	4.0	2.5	2.1	3.3	3.3	2.8
GDP deflator (market prices)	-0.2	5.4	5.6	3.6	2.3	2.8	2.7	2.0
Consumer Prices Index	2.6	9.1	7.4	3.9	1.9	2.5	2.5	1.8
Per capita GDP	7.2	3.5	0.2	0.1	0.7	0.7	0.9	1.2
Whole economy productivity <sup>a</sup>	1.2	0.4	-0.5	0.4	0.4	0.5	0.7	1.1
Labour input <sup>b</sup>	6.6	3.6	0.1	0.4	0.8	0.6	0.6	0.4
ILO Unemployment rate (%)	4.5	3.7	4.0	4.6	4.6	4.7	4.7	5.0
Current account (% of GDP)	-1.5	-3.8	-5.9	-3.3	-2.0	-1.3	-0.3	1.0
Total managed expenditure (% of GDP)	44.7	45.8	43.0	40.9	40.2	39.7	39.1	39.4
Public sector net borrowing (% of GDP)	5.7	6.5	3.5	1.8	1.2	0.7	-0.1	0.7
Public sector net debt (% GDP)	98.9	97.9	98.6	97.6	94.0	89.9	86.2	77.8
Effective exchange rate (2011=100)	106.7	104.8	103.8	104.1	103.8	103.4	103.3	103.6
Bank Rate (%)	0.1	1.5	4.3	4.3	3.9	3.6	3.3	3.3
10 year interest rates (%)	0.8	2.4	3.4	3.4	3.3	3.3	3.2	3.2

Notes: <sup>a</sup> Per hour. <sup>b</sup> Total hours worked.

**Table A11** Gross Value Added by sector percentage change

	2018	2019	2020	2021	2022	2023	2024	2025	2026
Utilities and agriculture	-3.5	8.9	5.0	6.2	-0.3	6.2	3.8	3.1	2.1
Mining and quarrying	6.3	2.2	-3.2	-11.7	2.1	-7.1	-5.4	-5.5	-5.6
Manufacturing	4.3	1.2	0.1	9.7	-3.7	-1.4	1.4	1.2	0.9
Construction	-1.7	1.5	-13.5	13.1	6.2	-2.3	0.8	1.5	1.0
Public sector	1.3	2.7	-19.8	11.4	6.9	0.5	0.9	0.6	-0.2
Private non-traded services	0.8	1.2	-18.4	4.8	4.5	3.0	1.6	1.6	1.5
Financial services	-0.9	-2.5	0.3	5.2	-0.4	2.0	0.3	0.2	0.2
Imputed rent	2.0	1.2	0.1	1.0	0.9	-0.2	0.5	0.5	0.6
Private traded services	3.9	2.5	-10.5	9.1	9.6	1.6	0.9	1.1	1.2

Notes: NiSEM database and forecast. Public sector is composed of Public administration and defence, compulsory social security (O), Education (P) and Human Health and Social Work activities (Q). Private non-traded services sector is composed of Wholesale and Retail Trade, Repair of Motor vehicles and Motorcycles (G), Accommodation and Food services (I), Arts, Entertainment and Recreation (S), Real Estate Activities excluding imputed rent (L-68.2IMP) and Activities of Households as Employers (T). Private traded sector is composed of Professional, Scientific and Technical Activities (M), Transport and Storage (H), Information and Communication (J) and Administrative and Support Services Activities (N).





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