Institute for Fiscal Studies

IFS Green Budget Chapter 2
R278

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UK Outlook: Fallout

Economic and Social Research Council

Nuffield Foundation

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2. UK outlook: fallout

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Key findings

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

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

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

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

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

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

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

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

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

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

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

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

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

2.1 Introduction

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

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

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

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

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

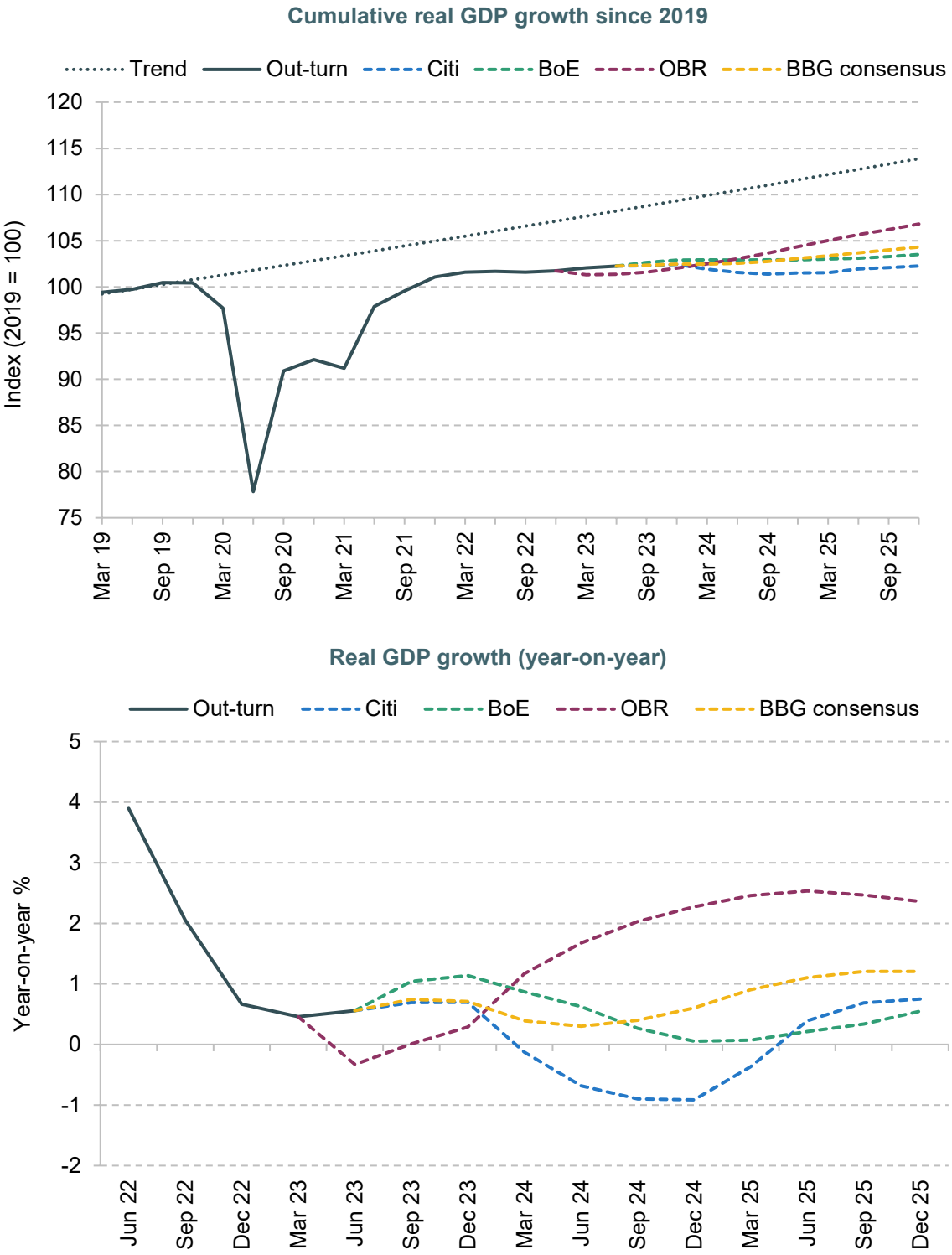
- First, firms could repair profit margins through elevated price growth. This could then enable a period of near-term economic resilience where the labour market remains tight and wage growth elevated. However, this would suggest more persistent inflation, higher rates and – plausibly – a more severe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

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

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

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

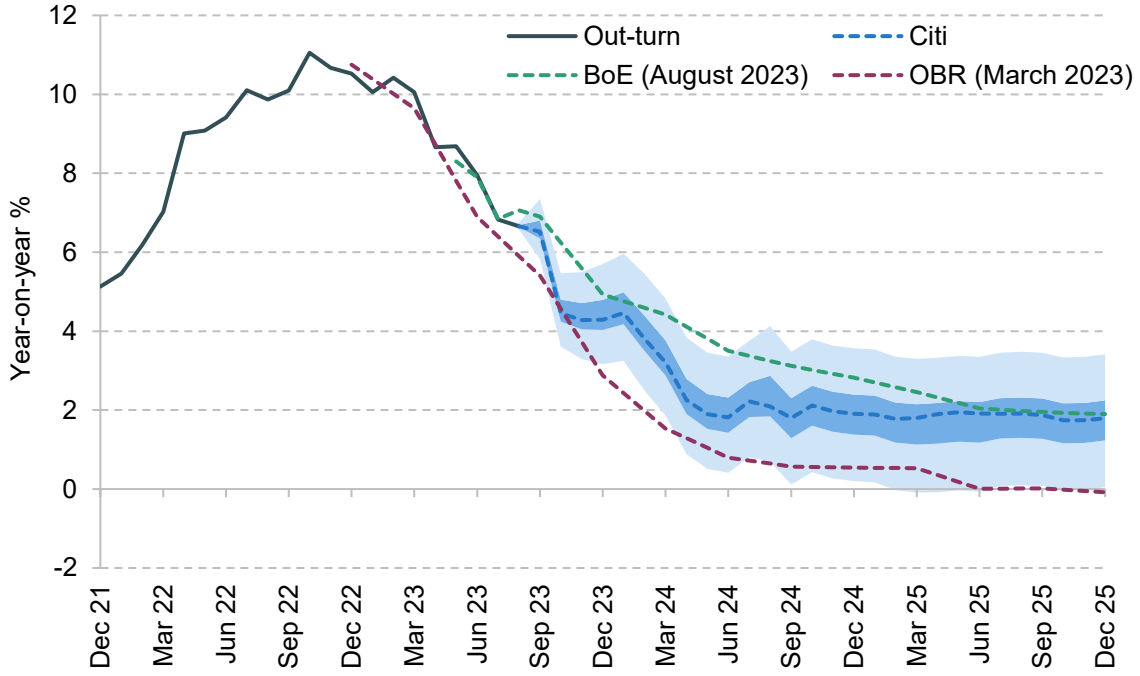
Figure 2.1. Forecasts for UK real GDP growth



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

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

Figure 2.2. Forecasts for UK CPI inflation



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

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

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

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

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

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

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

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

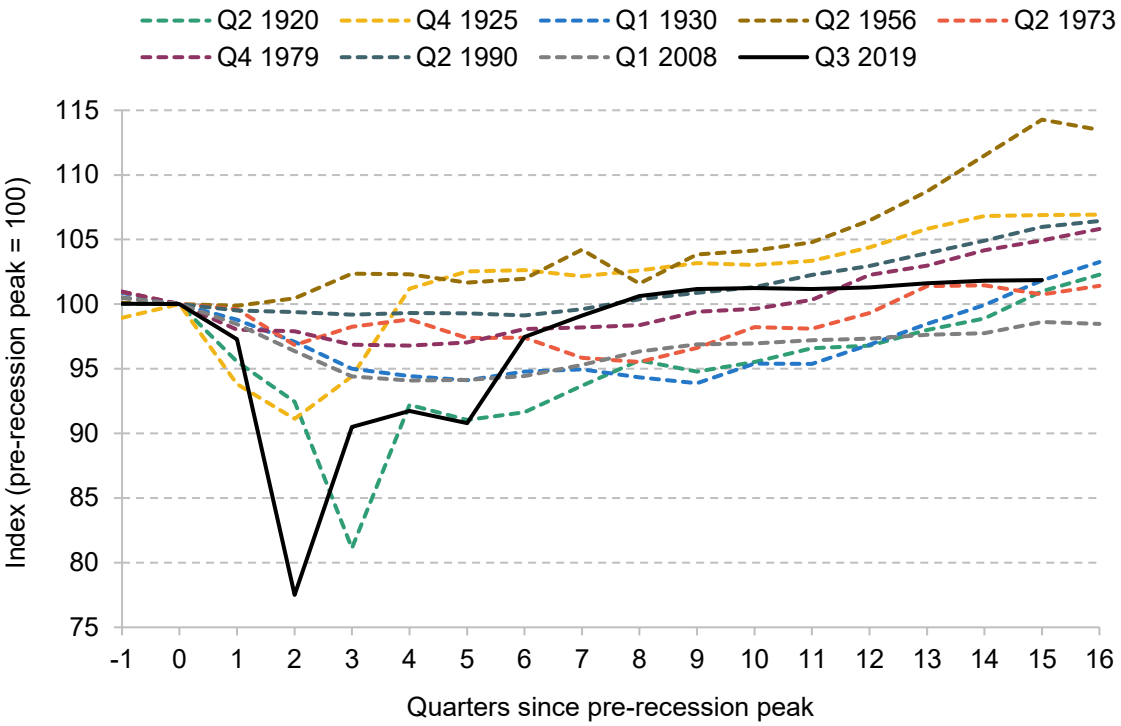
Second, the case for meaningful structural reform is increasingly urgent. The UK is once again exiting a major international shock towards the back of the pack. With big ecological and geopolitical challenges, the UK needs to build an economy capable of rapid reallocation. This will require a newfound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

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

2.2 The recovery so far

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

Figure 2.3. Recoveries from historic UK downturns



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

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

Why has supply been quite so weak?

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

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

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

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

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

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

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

Source: ONS, Eurostat, BEA and Citi Research.

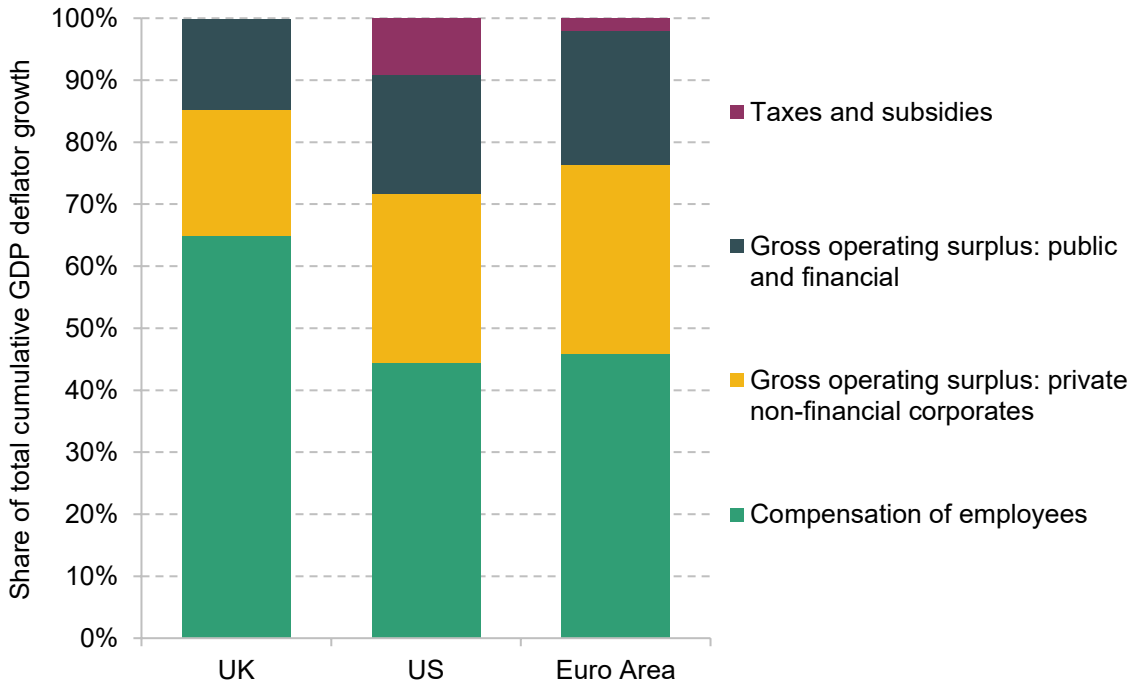
This is reflected in three features of the UK's recovery:

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

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

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

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



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

Source: ONS and Citi Research.

The unwind of the terms-of-trade shock

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

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

Three factors help to explain this resilience.

Reversal of the terms-of-trade shock

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

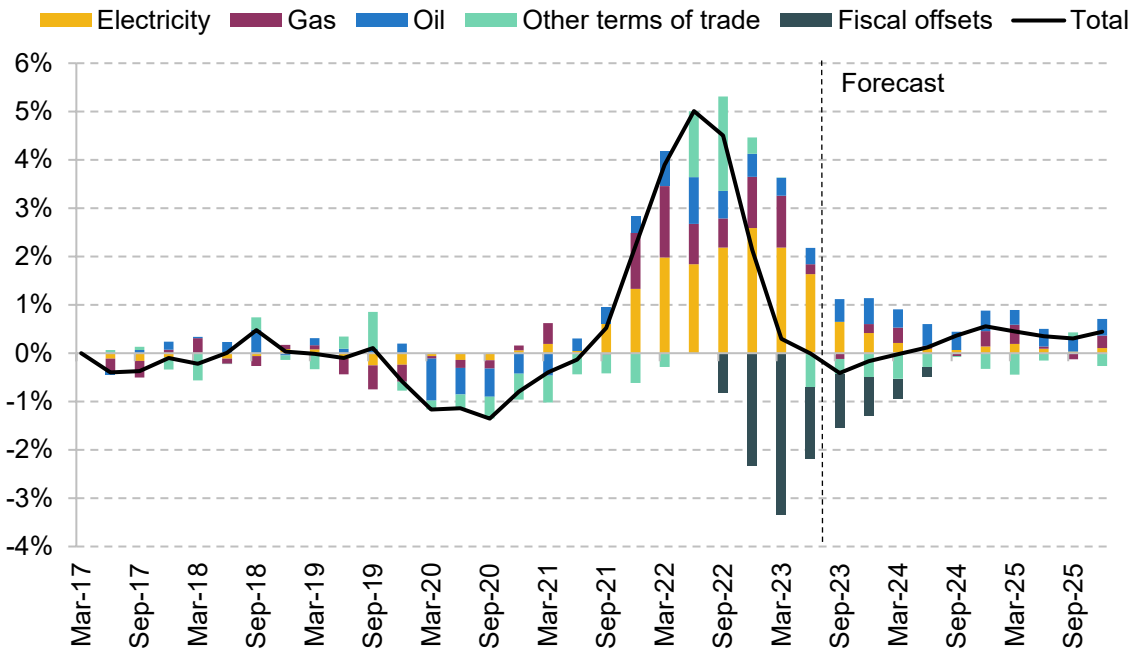
Risks remain here for the months ahead. The increase in global oil prices seen since the summer, for example, is sufficient to deduct roughly 0.1–0.2 percentage points (ppt) from forecast UK GDP growth in 2024.[5] And adverse weather, or further supply disruption, both pose risks. In that sense, while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

Fiscal policy

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

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

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



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

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

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

Supply chains

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

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

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

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

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

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

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

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

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

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

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

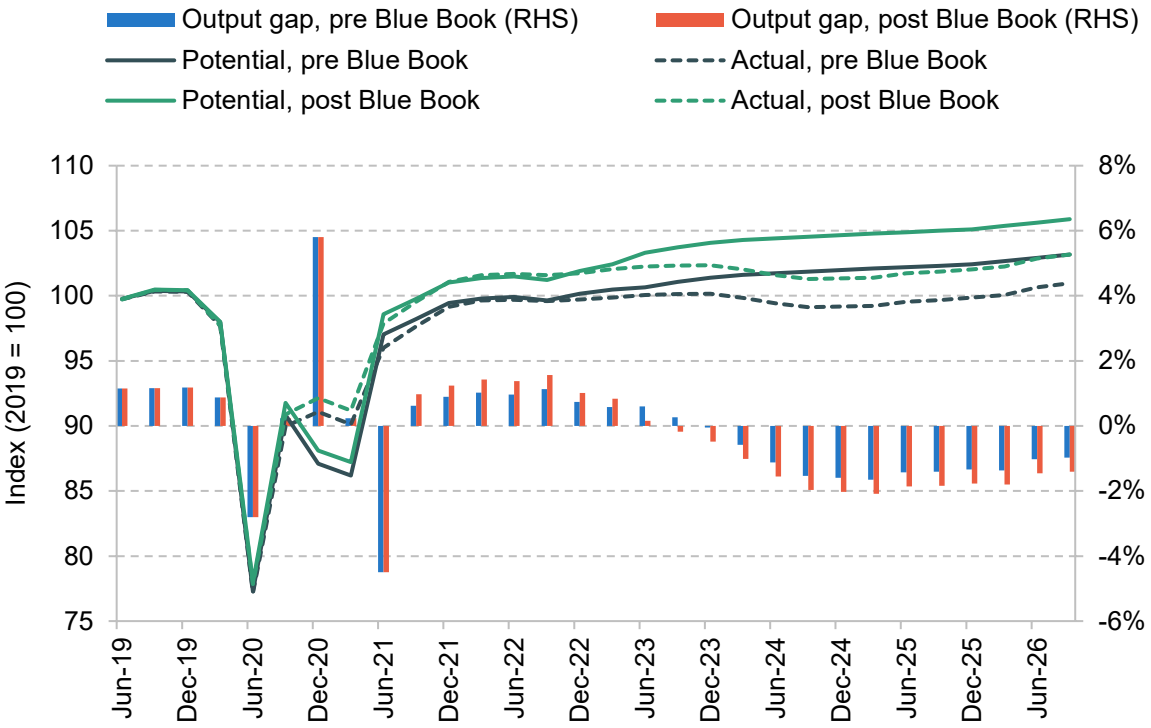
Two questions follow from such a major revision.

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

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

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

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



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

Source: ONS and Citi Research.

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

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

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

The near-term outlook

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

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

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

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

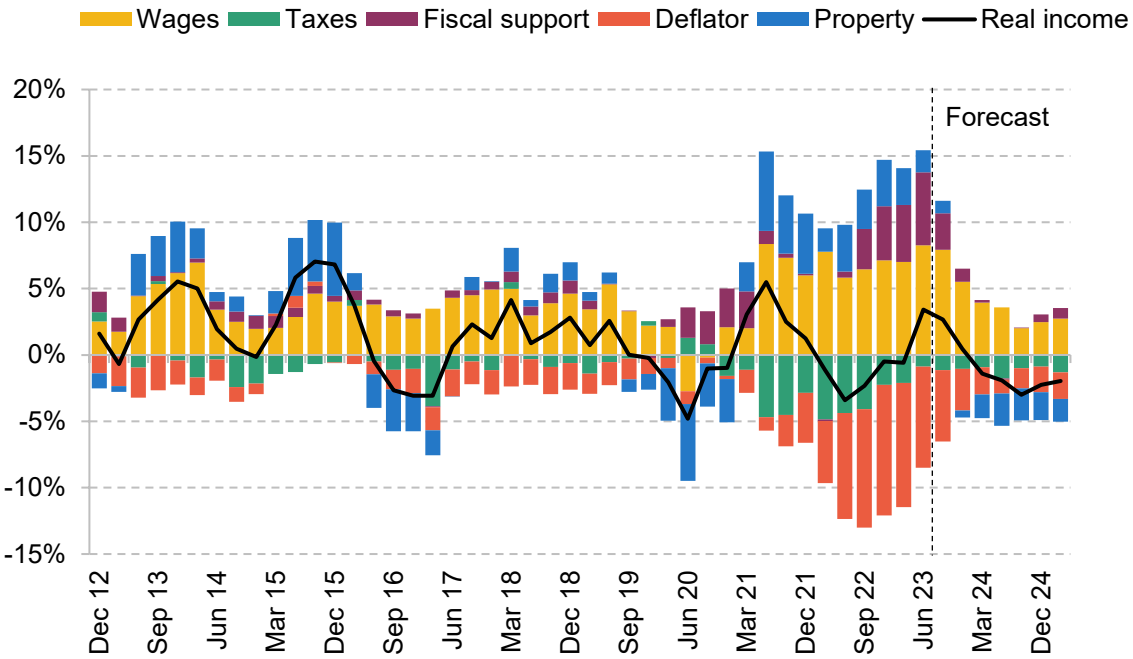
- For households, while wages are now growing faster than incomes, many of the direct benefits of easing terms of trade – particularly on the energy side – have already been realised. And households now face further headwinds from much higher interest rates, passive fiscal drag and the end of various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

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

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

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

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



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

Source: ONS, Bank of England and Citi Research.

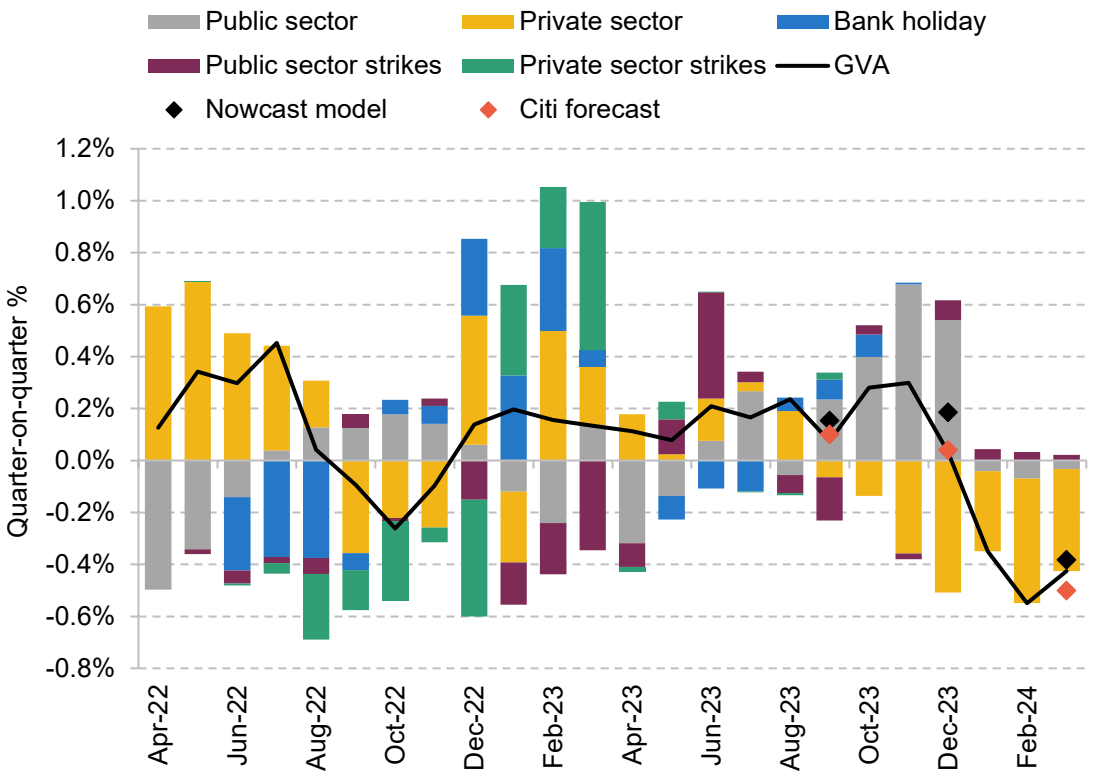
For now, the evidence is more consistent with the former. With the terms-of-trade tailwind beginning to fade, the survey data for the UK have once again begun to deteriorate. The PMI surveys for August and September, for example, have now indicated two consecutive months of renewed contraction. The CBI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

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

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

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

Figure 2.8. Gross value added nowcast, 2022 to 2024



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

Source: ONS and Citi Research.

Summing up

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

2.3 The medium term: a perilous moment

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

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

The anatomy of a monetary policy shock

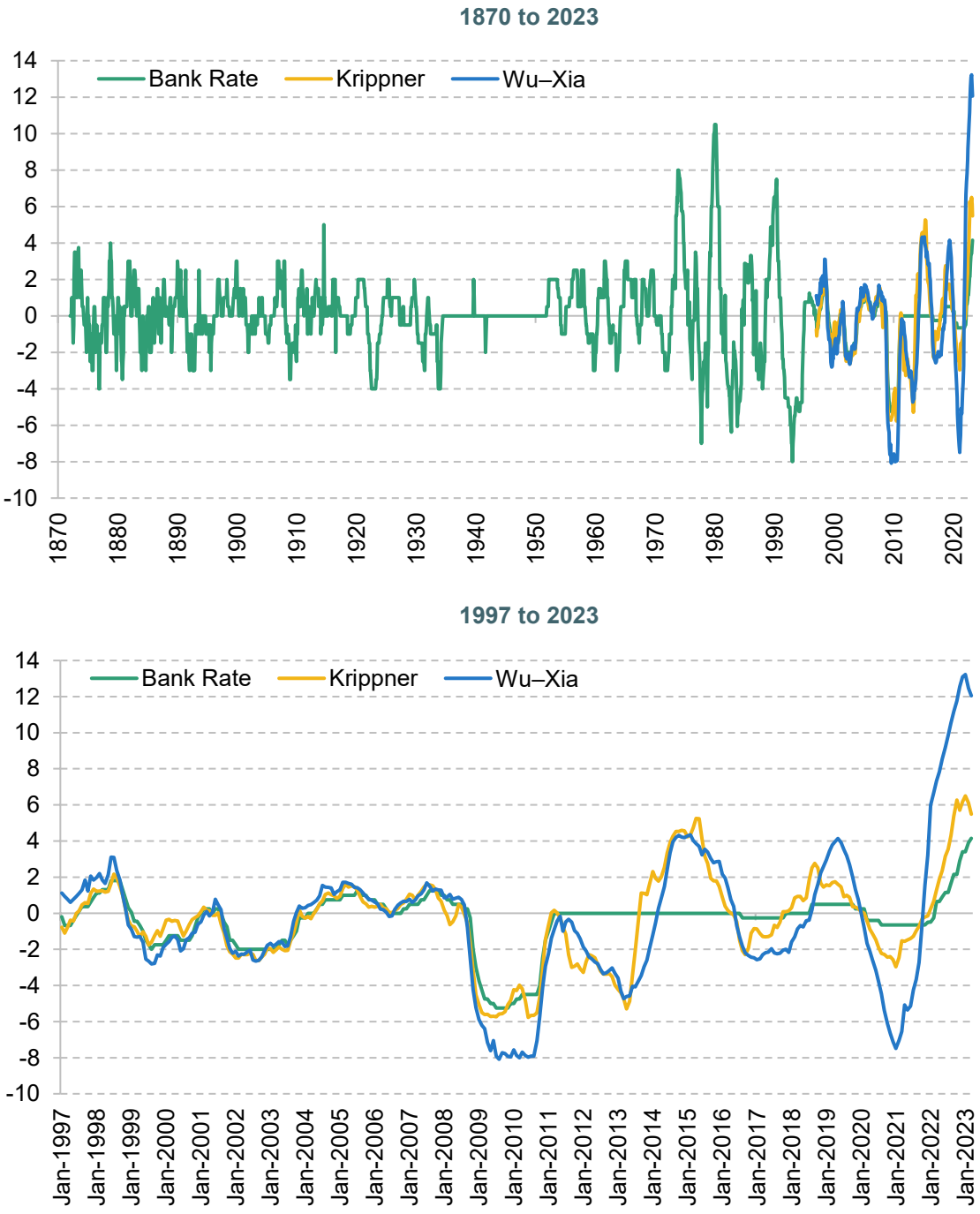
The starting point for the outlook is the tightening in monetary policy. The Bank of England has increased Bank Rate by 515bps in a little under two years. The cycle marks the most aggressive tightening since the onset of independence in 1997 and is only historically rivalled by that in the early 1980s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

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

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

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

Figure 2.9. Two-year change in monetary policy stance



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

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

Lessons from recent experience

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

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

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

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

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

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

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

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

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

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

Indications from the latest data

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

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

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

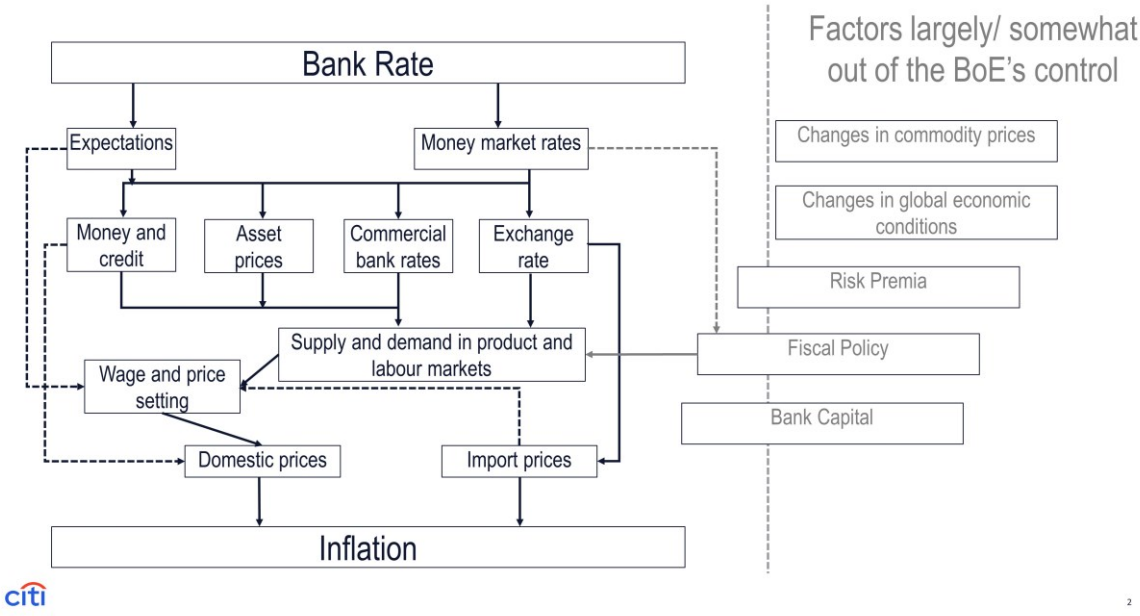
[16] Crucially, this all depends on the behaviour of the labour share in a hiking cycle. In the US, there is a small increase, but firms generally respond relatively quickly to an adverse demand shock by cutting staff in order to protect margins. The implication is relatively fast pass-through, and a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

Box 2.2. Channels of policy transmission

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

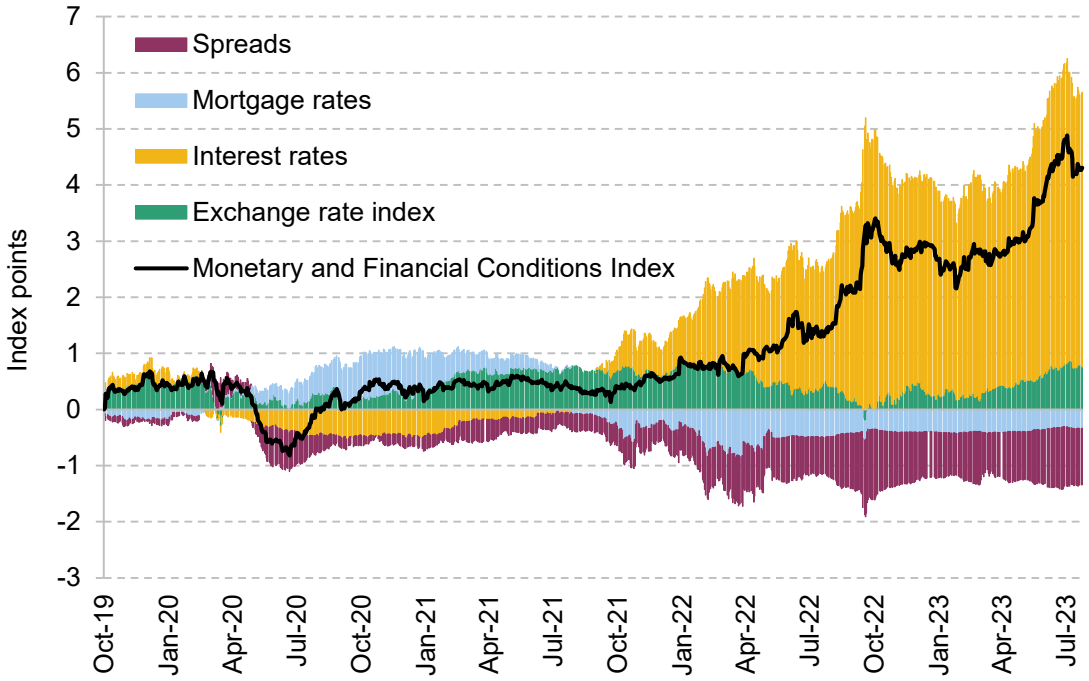
- **Conventional interest rate channel.** Here policy works by incentivising households and firms to defer consumption and investment, increasing the cost of capital and boosting the return on saving today, in order to consume tomorrow.
- **Cash-flow and credit channel.** This channel assigns particular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

Figure 2.10. Schematic of monetary policy transmission



Source: European Central Bank and Citi Research.

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



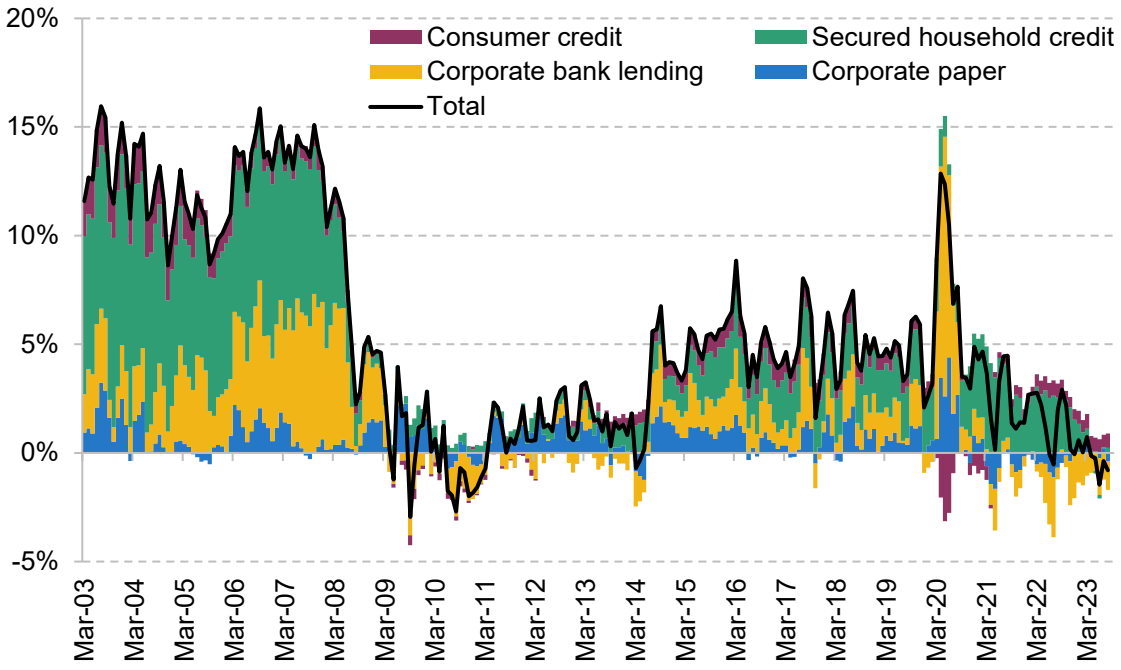
Note: In this approach, changes in various financial indicators – including the exchange rate, various swaps, and some other asset prices – are weighted by their impact on GDP. For more information, see Bank of England (2021).

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

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

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

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



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

Source: ONS and Bank of England.

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

Structural changes

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

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

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

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

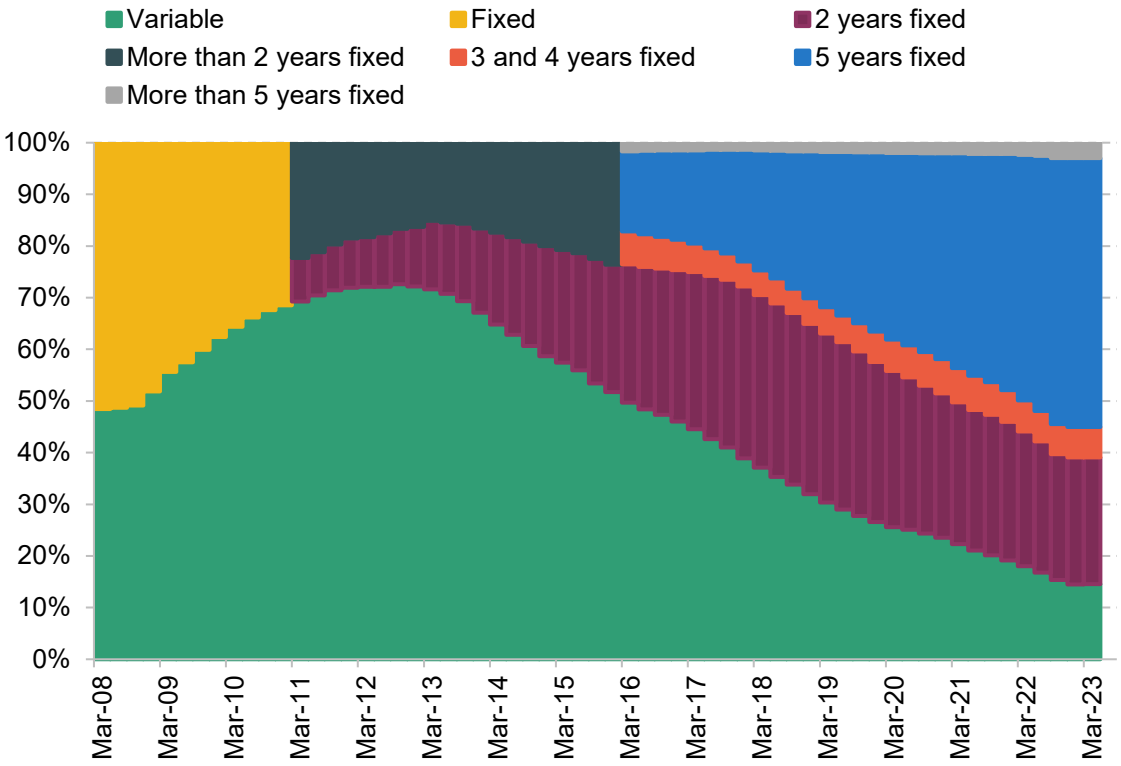
Third is a shift in the net balance of interest-bearing liabilities. The net balance here across the private sector is also stronger than in the years ahead of the GFC. The share of mortgaged owner-occupied households, for example, has fallen from 32% in 2012 to 28% now, according to the latest ONS data,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

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

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

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

Figure 2.13. Structure of owner-occupied mortgage market



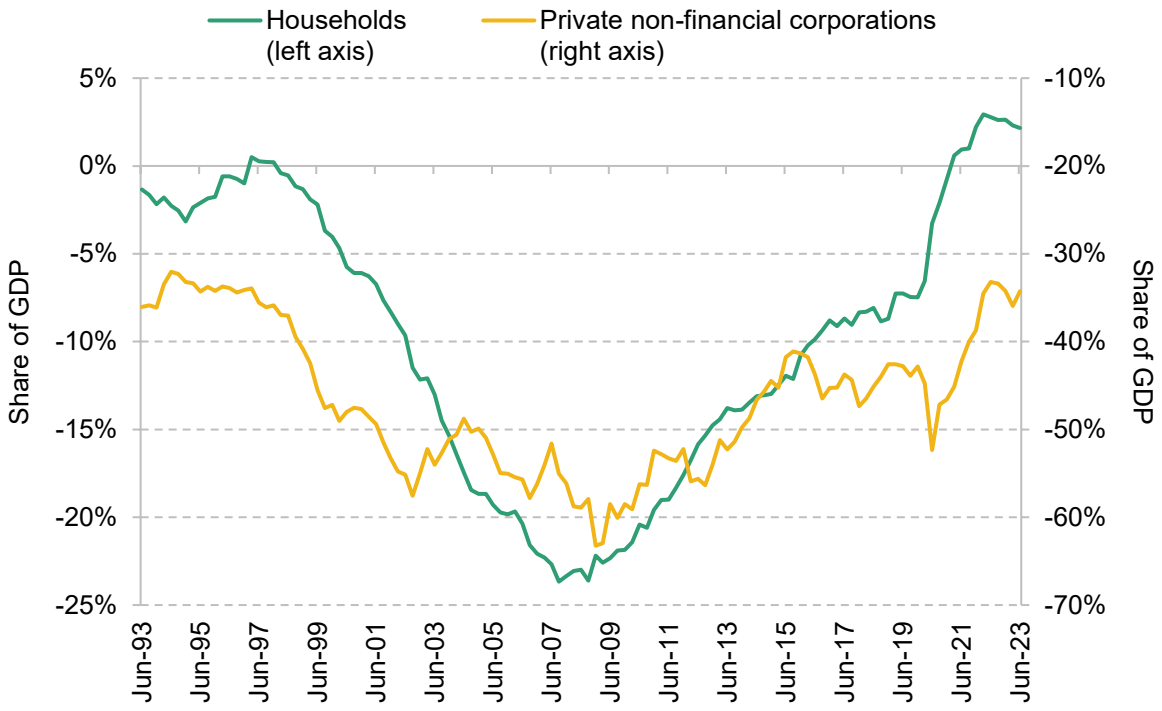
Note: Chart shows share of outstanding mortgage lending at different maturities.

Source: Bank of England, ONS and Citi Research.

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

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

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



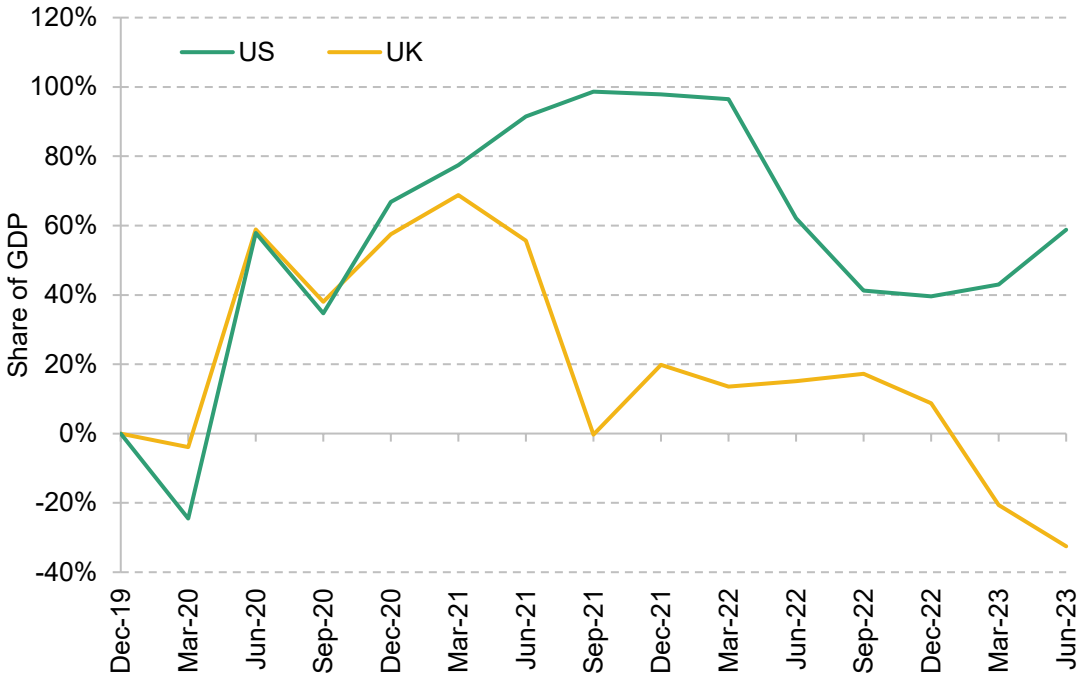
Note: Interest-bearing assets are defined as either deposits, loans or debt securities.

Source: ONS and Citi Research.

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

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

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



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

Source: Federal Reserve, ONS and Citi Research.

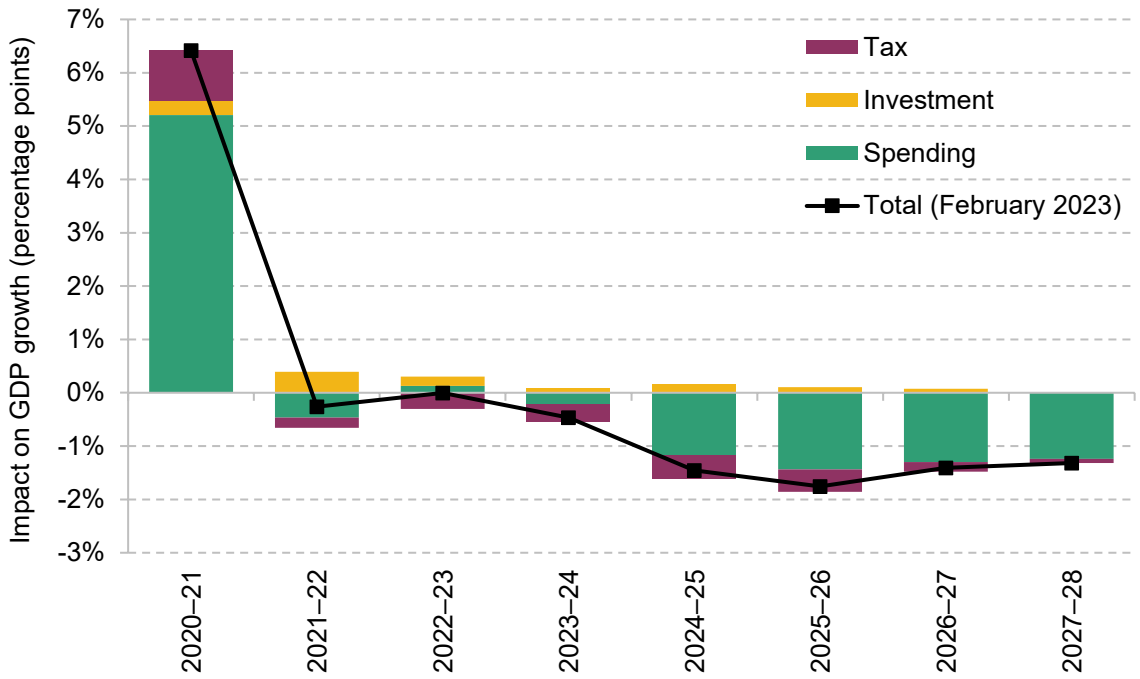
The implication of an older workforce in particular means the economy might be less exposed to the *cash-flow* effects of higher interest rates, but the impacts via asset prices could be more severe given the weaker starting point. This is a key point of departure for the outlook ahead. While these lags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

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

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

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

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



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

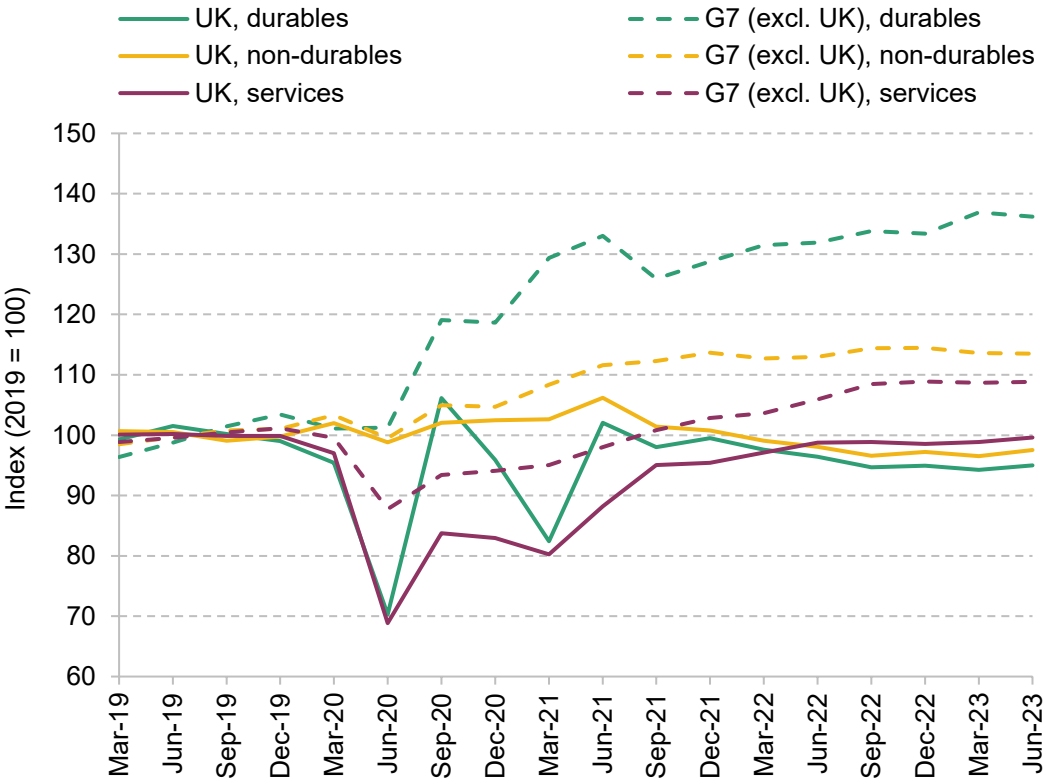
Source: OBR, ONS and Citi Research.

The outlook for households: this is going to hurt …

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

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

Figure 2.17. Compositional changes in household spending: G7



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

Source: ONS, national statistical offices and Citi Research.

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

Real income growth

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

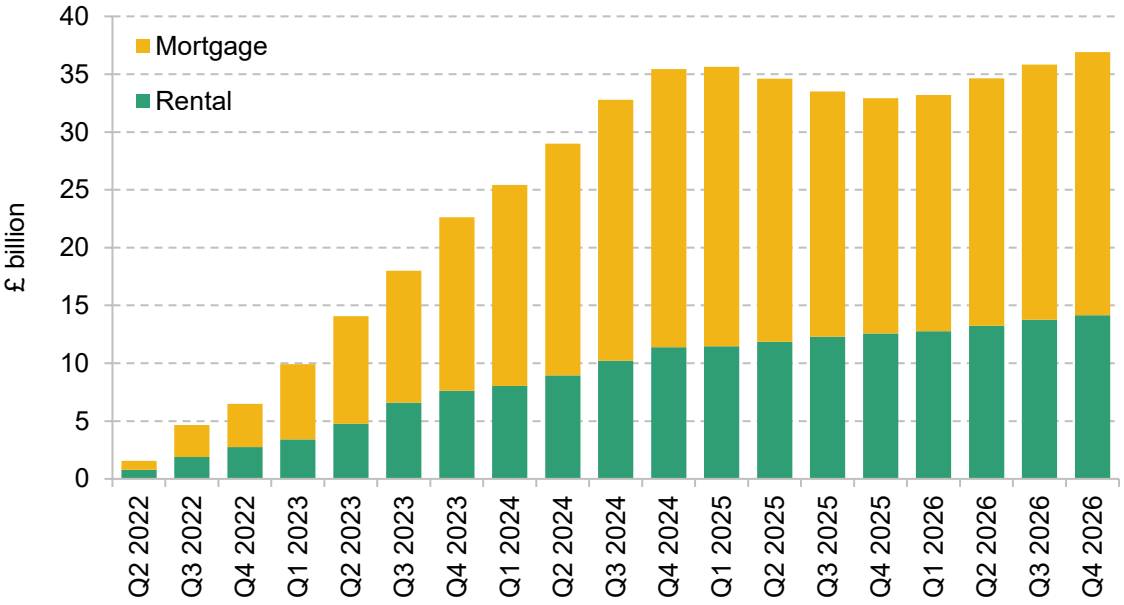
However, we think this is plausibly as good as it will get. Even as inflation comes down, households will have to contend with the further withdrawal of energy support and a growing

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

Pass-through from higher rates

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

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



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

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

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

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

Household balance sheets

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

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

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

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

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

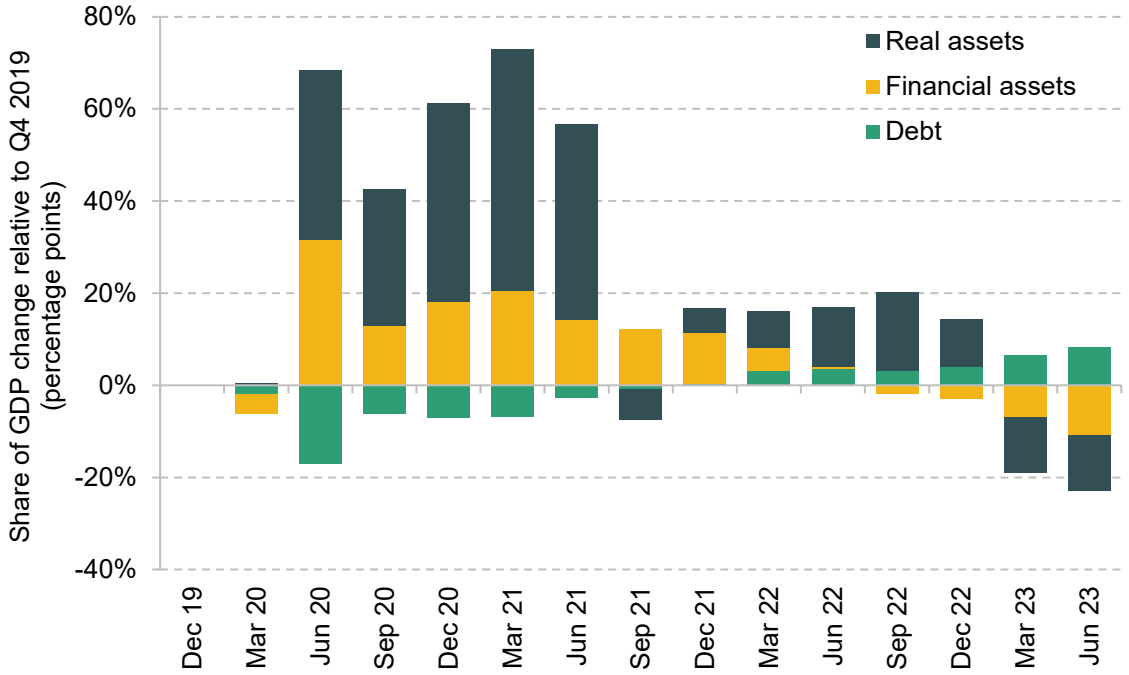
[23] These include £215 billion in outstanding credit card, auto and other unsecured credit. So far, effective rates on outstanding liabilities have increased 2.8% in the first case and 2.0% in the last case according to Bank of England data, although we think further increases are likely to come.

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

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

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

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



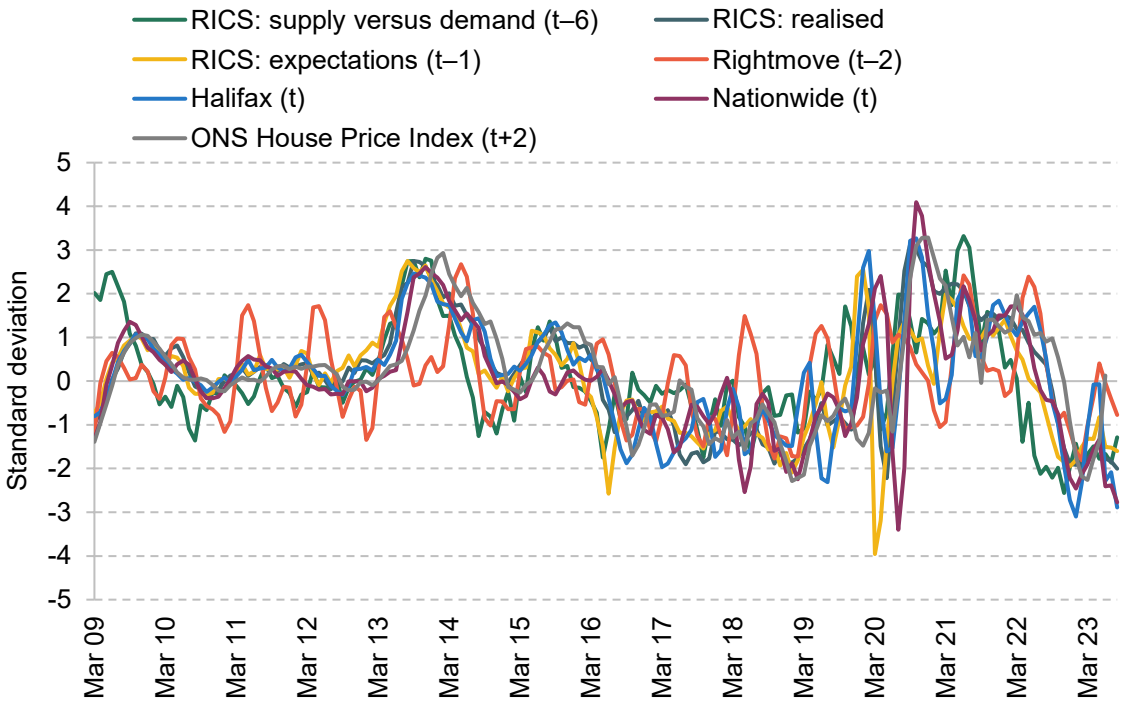
Note: This measure is derived using the ONS accumulation accounts. Measures include financial assets/liabilities, as well as housing wealth, measured as average house price multiplied by owner-occupied private ownership. Pension wealth is excluded. The chart shows the percentage point change versus Q4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

Source: ONS and Citi Research.

The outlook for house prices

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

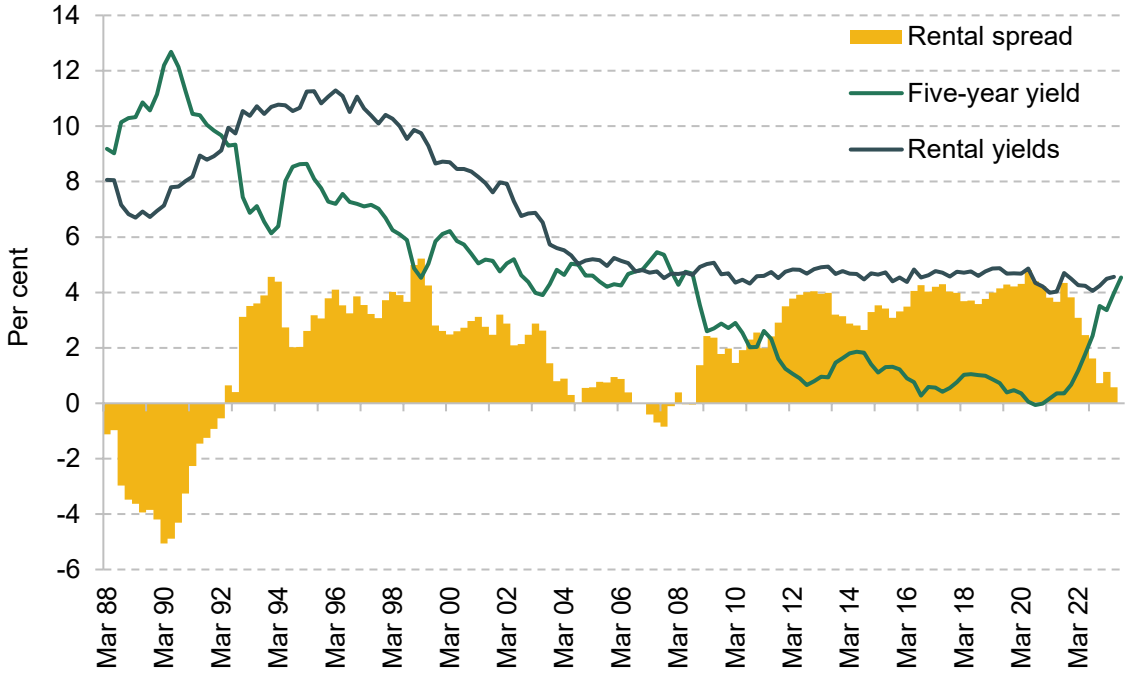
Figure 2.20. Indicators of house prices



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

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

Figure 2.21. Rental yields and risk-free rates



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

Source: Bank of England, ONS and Citi Research.

Looking forward, we see three large downside risks:

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

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

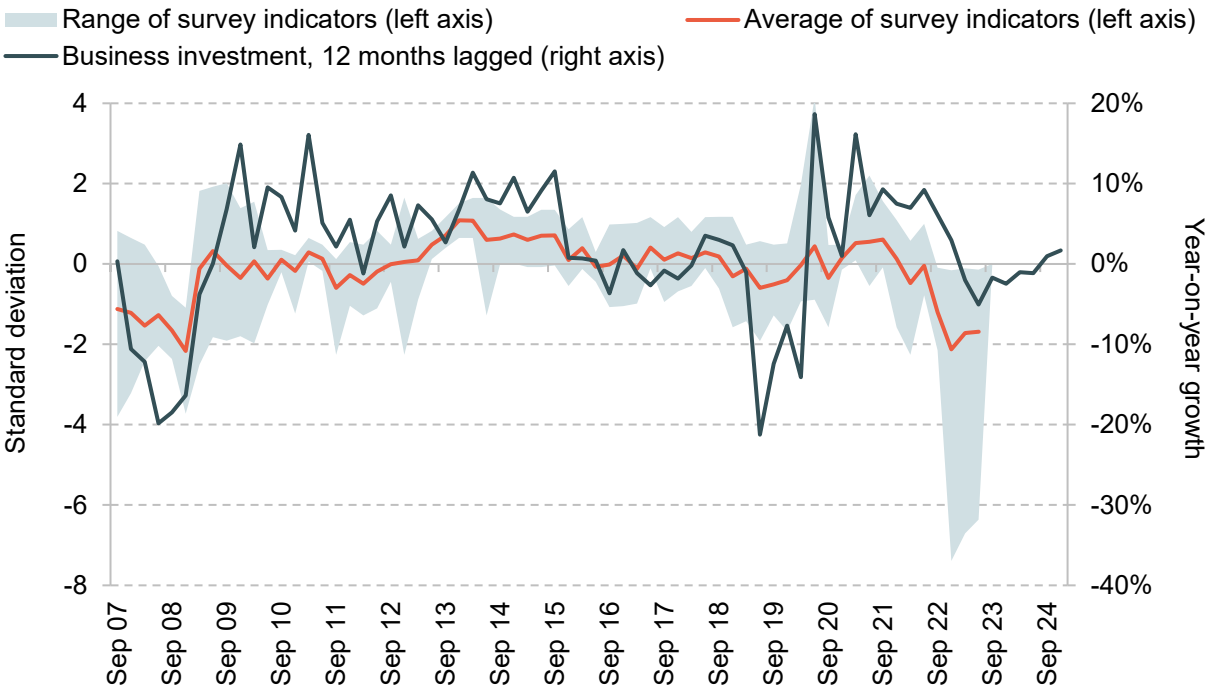
enough to cover the increase in their financing costs, and some may find themselves in a position of 'negative carry'. This may force some to sell.

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

The outlook for firms: a question of solvency

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

Figure 2.22. Indicators of business investment

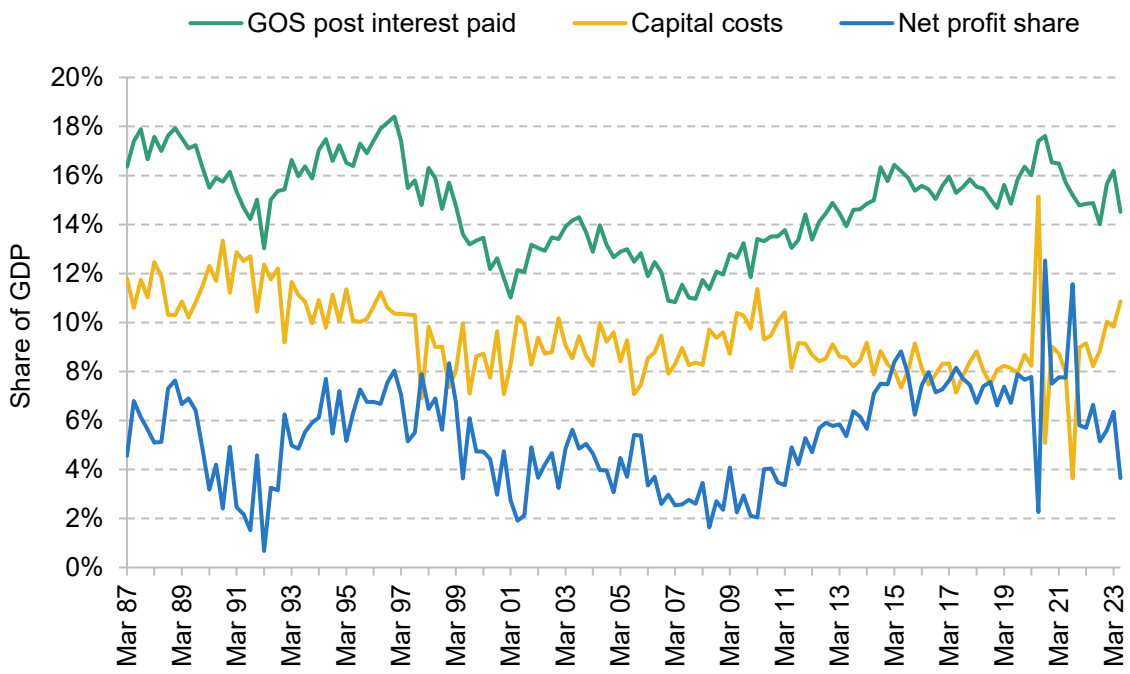


Note: Survey indicators include measures from the Bank of England, CBI, Deloitte and the ICAEW.

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

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

Figure 2.23. Adjusted PNFC gross operating surplus



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

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

We think three factors explain recent poor performance.

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

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

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

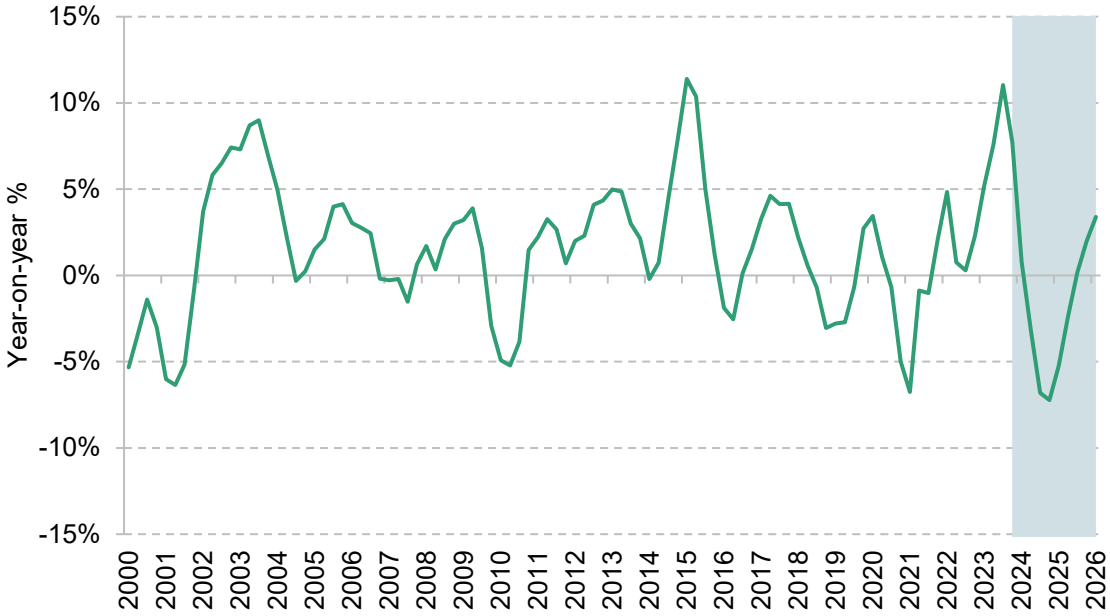
One important offset here concerns defined benefit (DB) pension liabilities – with many schemes now better funded, many firms are now heading for 'buyout'. This means the liability is taken from the corporate's balance sheet. This should free up capital for investment – with the proportion of firms still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

Things can only get better?

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

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

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



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

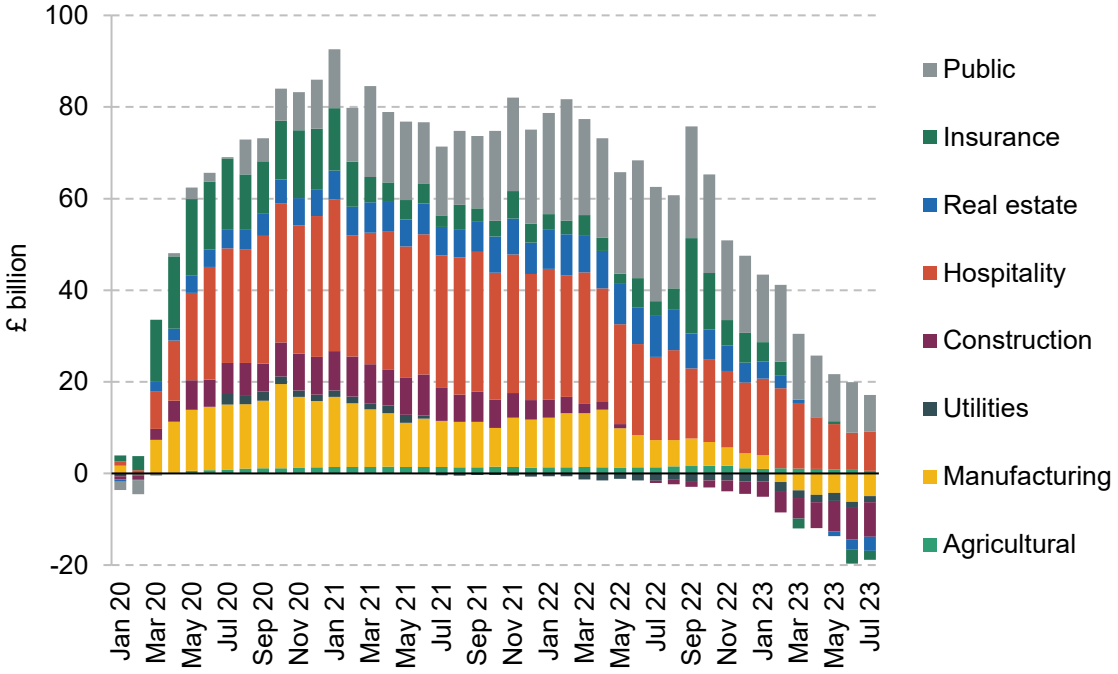
Source: ONS and Citi Research.

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

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

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

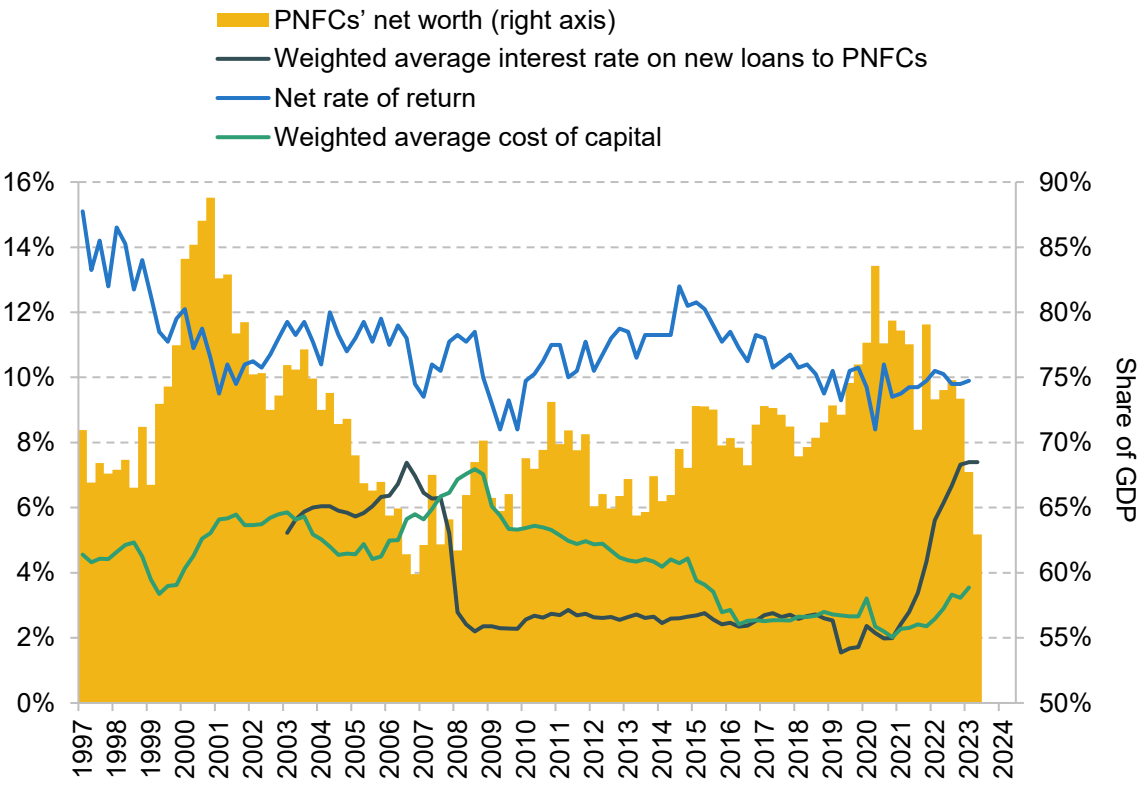
Figure 2.25. Corporate bank deposits: deviation relative to pre-COVID trend



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

Source: Bank of England and Citi Research.

Figure 2.26. Net rate of return and cost of capital



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

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

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

The outlook for trade: no external bailouts

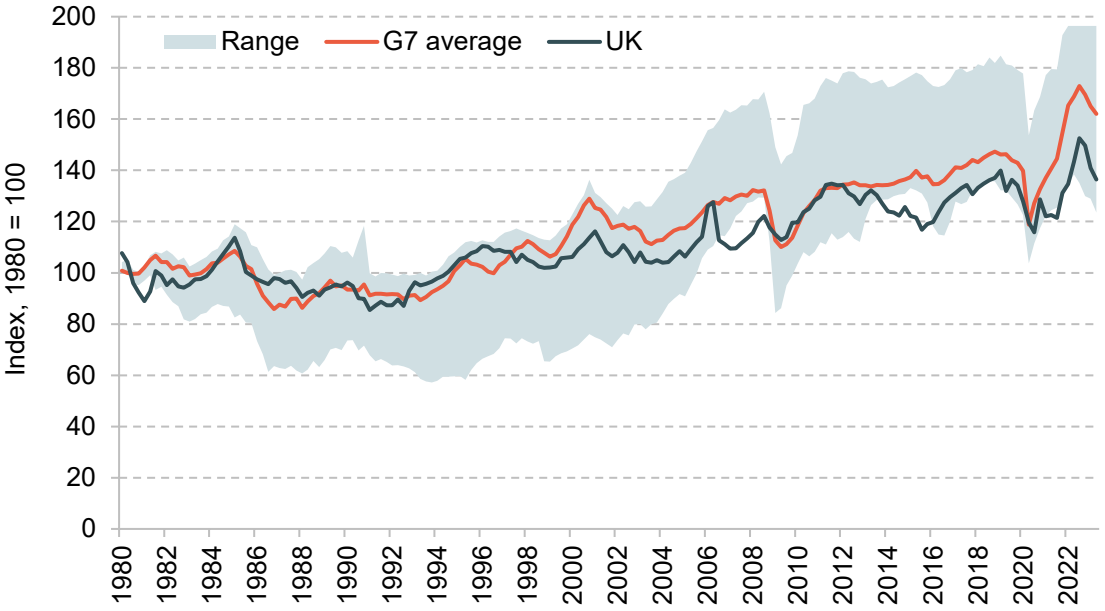
The last piece of the puzzle here is trade. After acute disruption through 2021 and 2022, the external position of the UK has stabilised as global services trade has recovered. However, in the months ahead, external demand seems unlikely to deliver any meaningful support – with the US and the Eurozone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

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

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

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

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



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

Source: ONS, national statistical offices and Citi.

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

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

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

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

The medium-term outlook: summing up

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

2.4 Does the UK have a persistent inflation problem?

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

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

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

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

The problem with supply

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

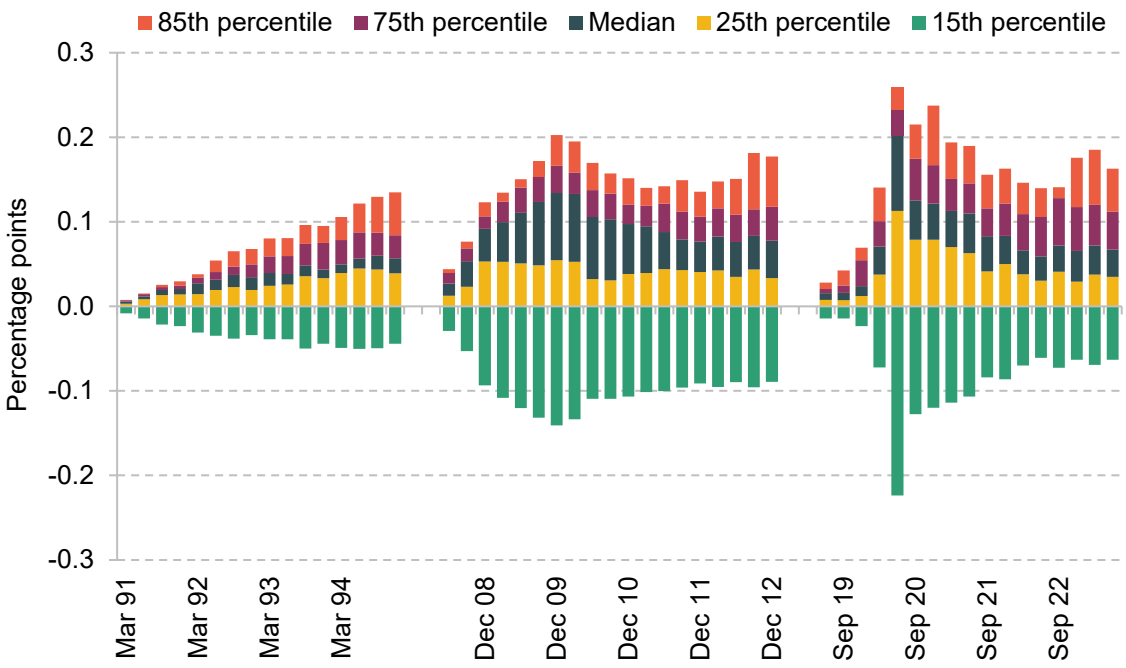
An ongoing reallocative challenge

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

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

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

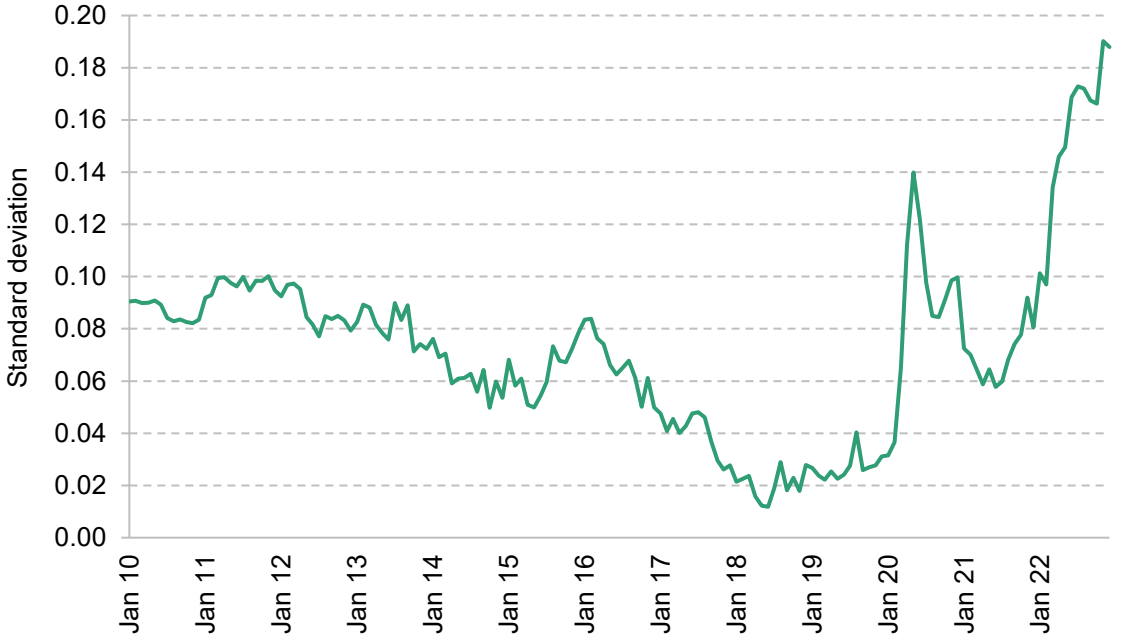
Figure 2.28. Sectoral dispersion following historical downturns



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

Source: ONS and Citi Research.

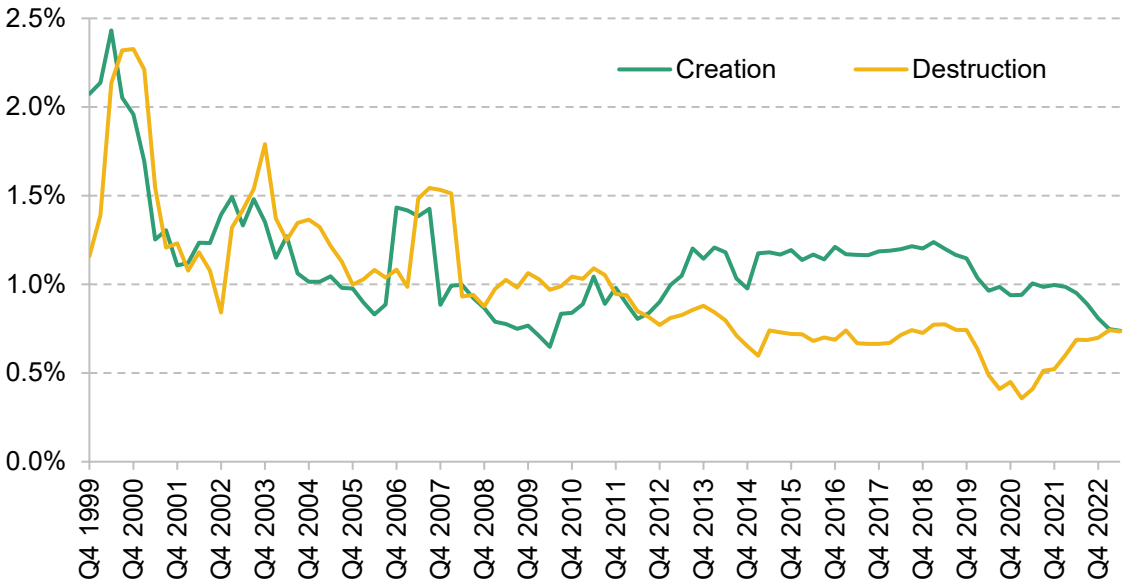
Figure 2.29. Dispersion in industrial output prices



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

Source: ONS and Citi.

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



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

Source: ONS and Citi Research.

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

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

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

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

A three-pronged labour supply shock

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

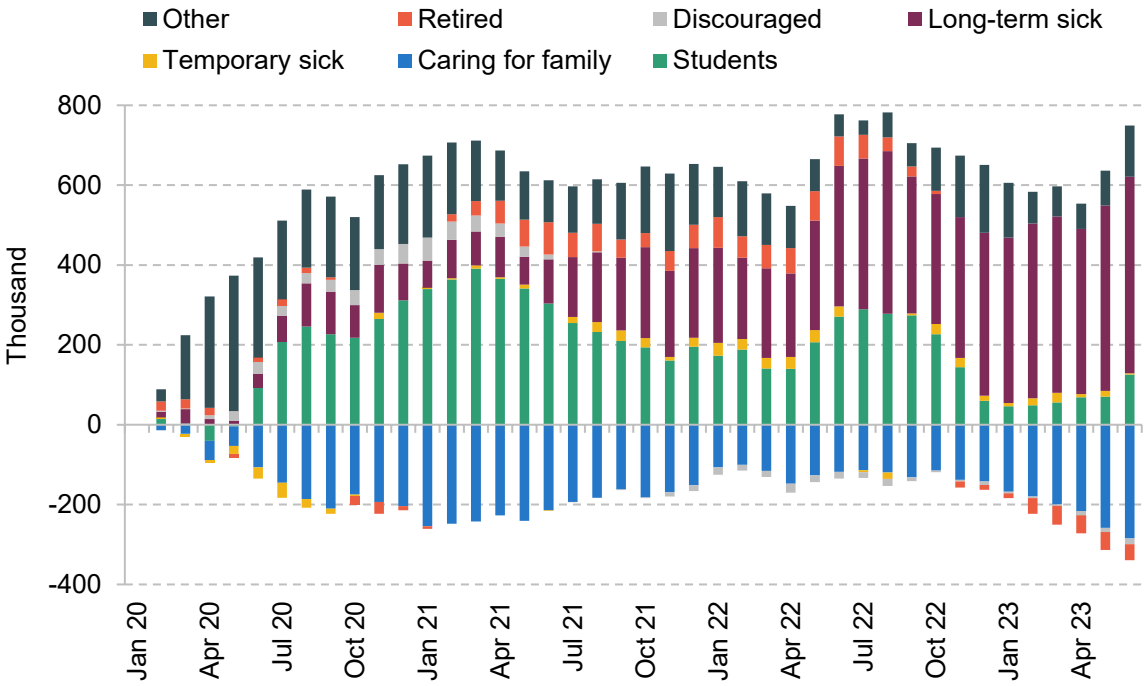
- **First is a large drop in participation.** During the early phase of the pandemic, the UK participation rate fell from 64.4% to a little over 63.1% in early 2021 – a net loss of just under 700,000 workers. At the same time, average working hours also fell by 0.8%. Combined, this meant a labour supply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

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

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

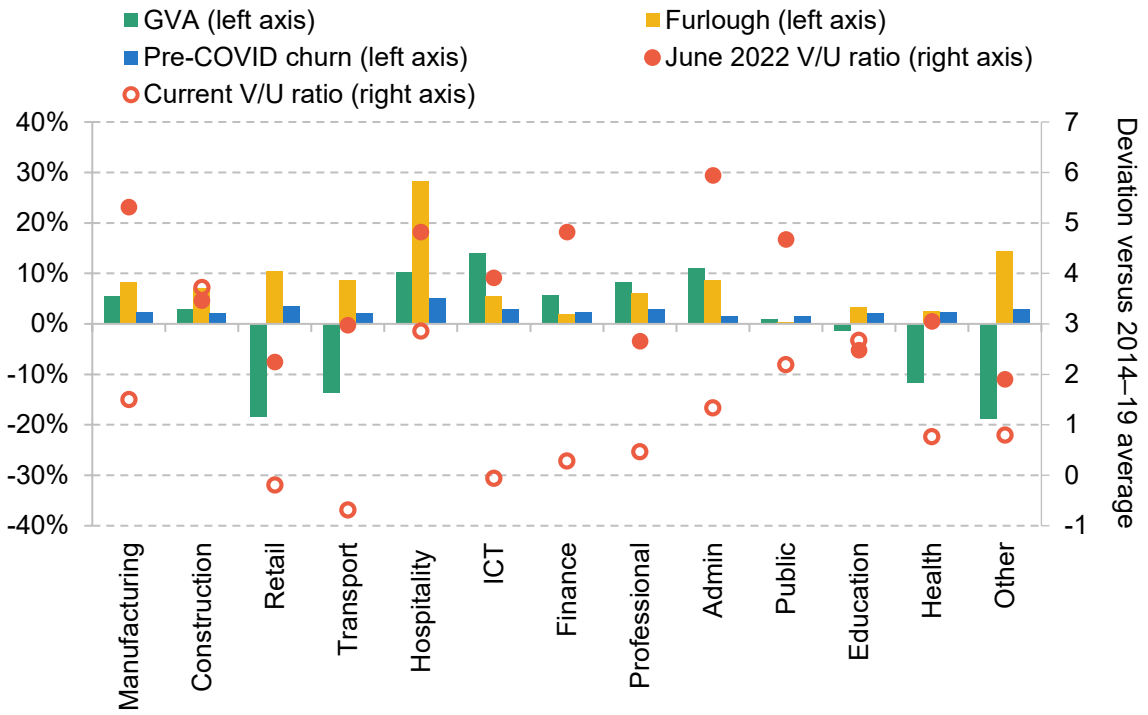
[30] For a breakdown of recent flows, see Office for National Statistics (2023).

Figure 2.31. Changes in inactivity since January 2020



Source: ONS and Citi Research.

Figure 2.32. Changes in labour market tightness by sector



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

Source: ONS and Citi Research.

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

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

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

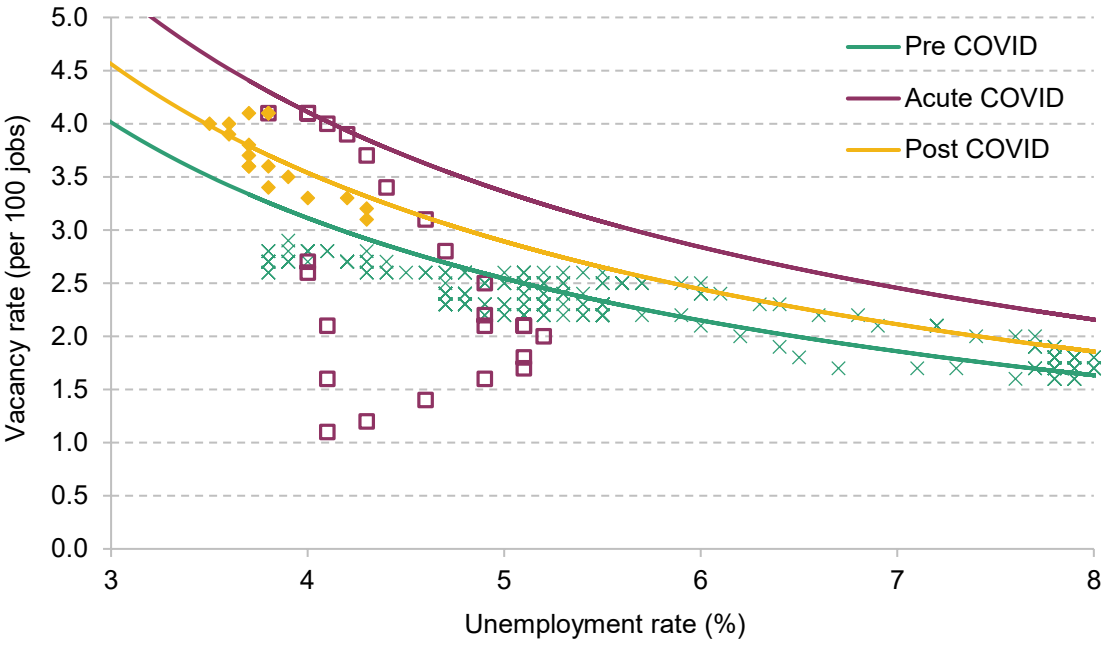
Where does this leave us? In our view, the labour market is probably not quite as efficient as it was post-GFC. But we think the aggregate picture is considerably better than it appeared this time last year. One way of structuring the evidence here is in terms of a 'search and matching' model. This consists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

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

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

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

Figure 2.33. UK Beveridge curve



Source: ONS and Citi Research.

Unemployment and slack: navigating the inflection point

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

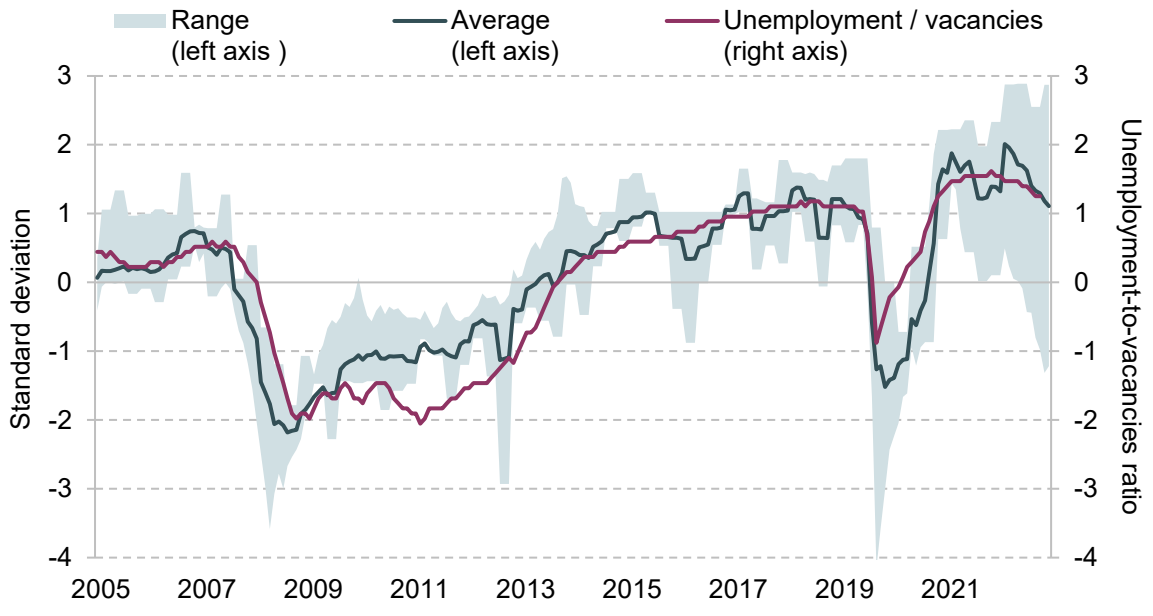
[32] The latest release is available at https://kpmg.com/uk/en/home/media/press-releases/2023/09/kpmg-and-rec-uk-report-on-jobs.html.

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

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

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

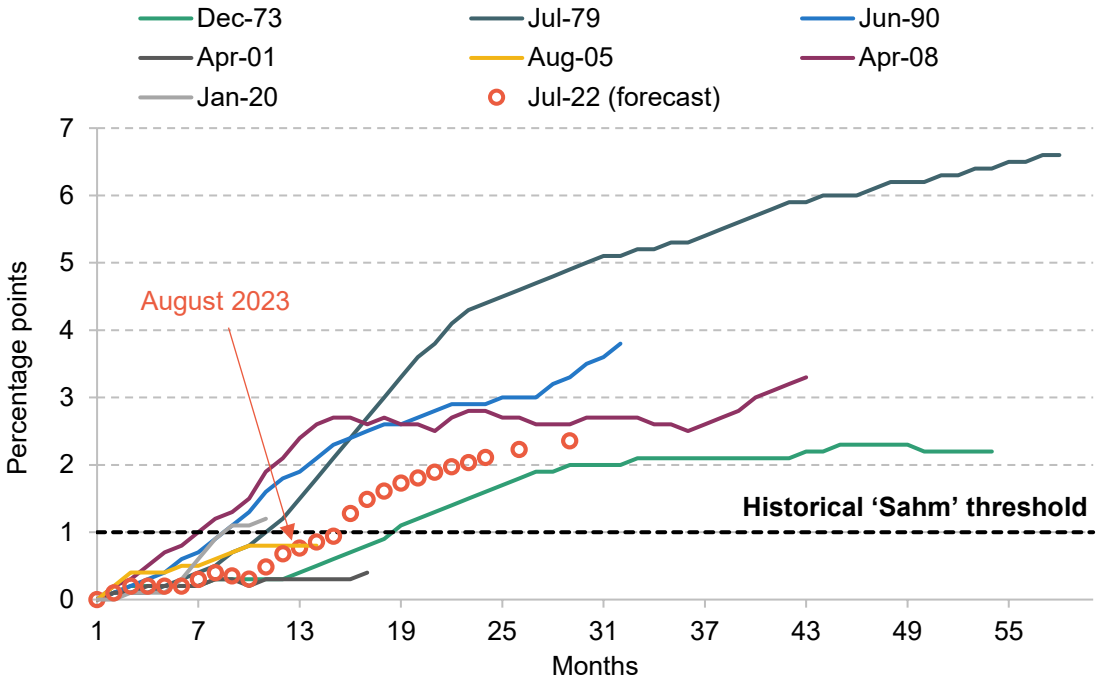
Figure 2.34. Survey indicators of labour market tightness



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

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

Figure 2.35. Changes in unemployment in historical labour market cycles



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

Source: ONS and Citi Research.

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

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

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

Does the UK have a (persistent) inflation problem?

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

The good news: fading upstream pressures

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

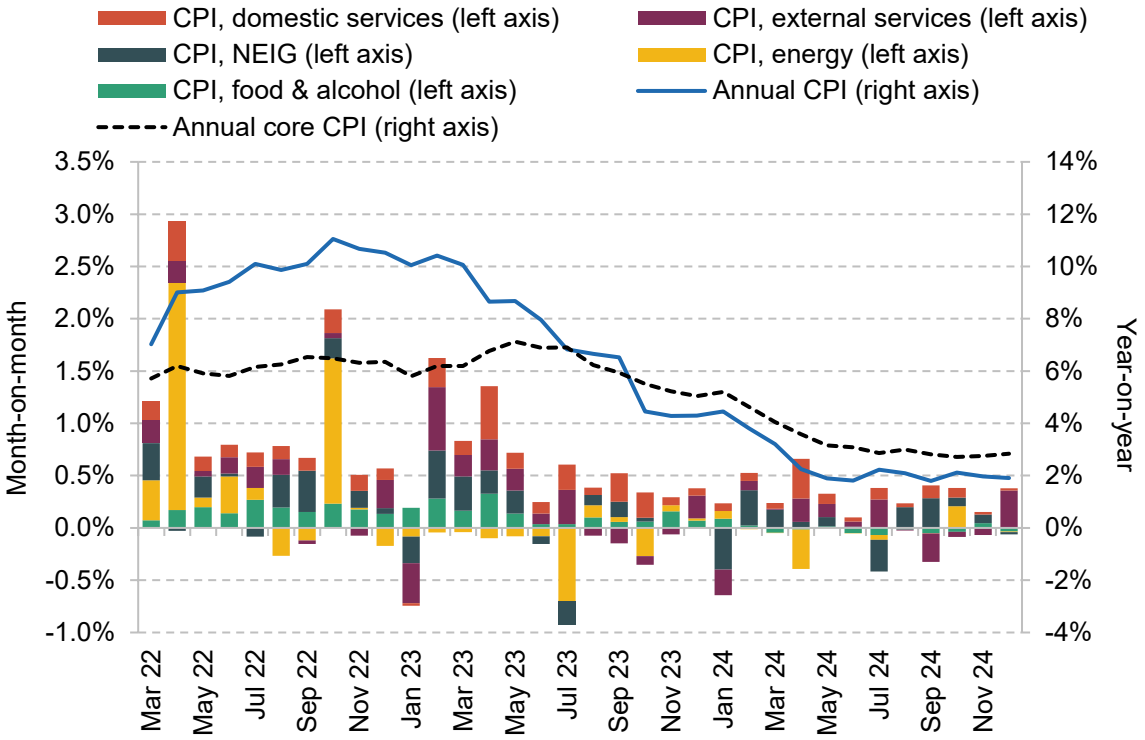
- **Energy.** Recent reductions in household energy bills look set to continue from October, with Ofgem announcing a further reduction in the dual fuel bill to fall to £1,923 from £2,074 in July and £2,500 earlier in the year. The boost is likely to be partly offset by recent increases in petrol prices,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

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

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

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

Figure 2.36. Contribution to headline monthly CPI inflation



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

Source: ONS and Citi Research.

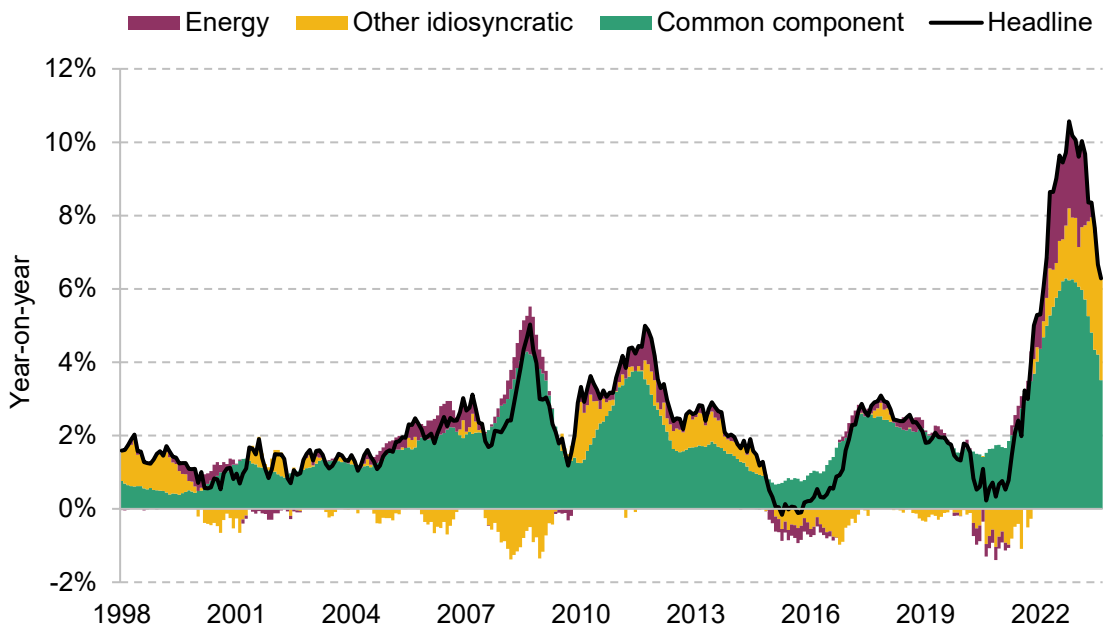
The ‘bad’ news: resilient domestic pressures

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

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

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

Figure 2.37. Underlying inflation gauge



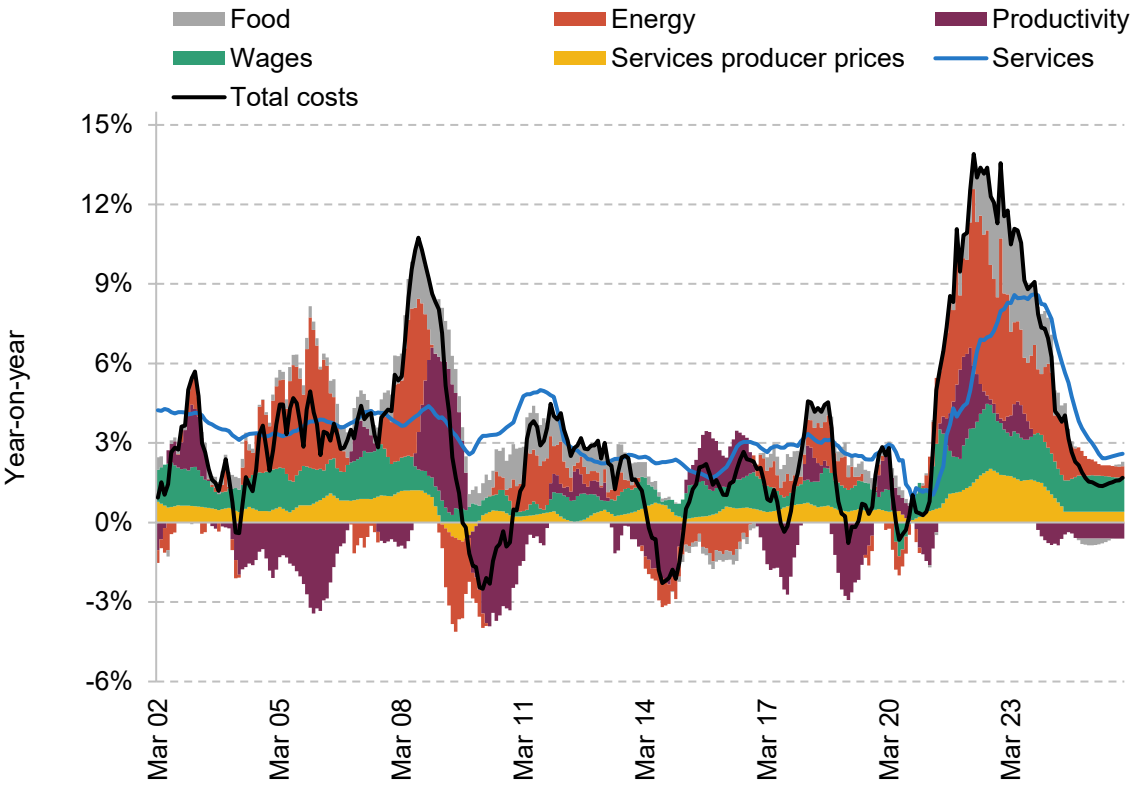
Note: The common component here is derived from a dynamic model across the CPI subcomponents.

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

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

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

Figure 2.38. Realised services inflation and domestic costs



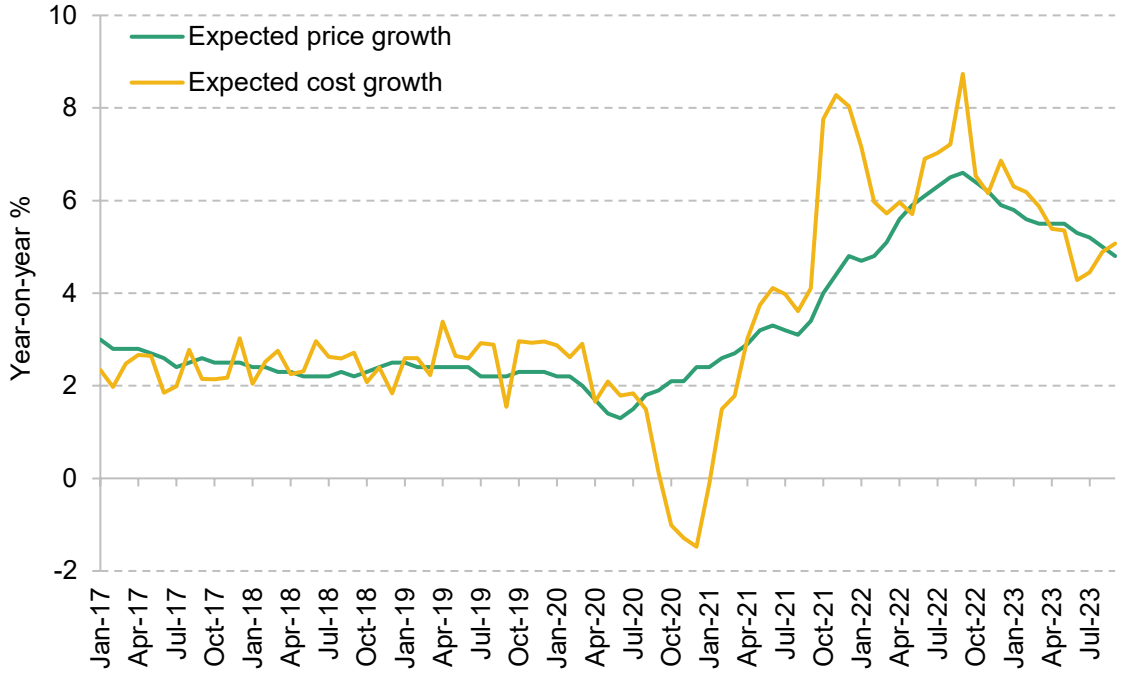
Note: Cost decomposition is derived using the supply and use tables to weight input costs across different services subsectors.

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

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

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

Figure 2.39. Expected cost and price growth



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

Source: Decision Maker Panel, ONS and Citi Research.

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

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

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

From real rigidities to a persistent shift?

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

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

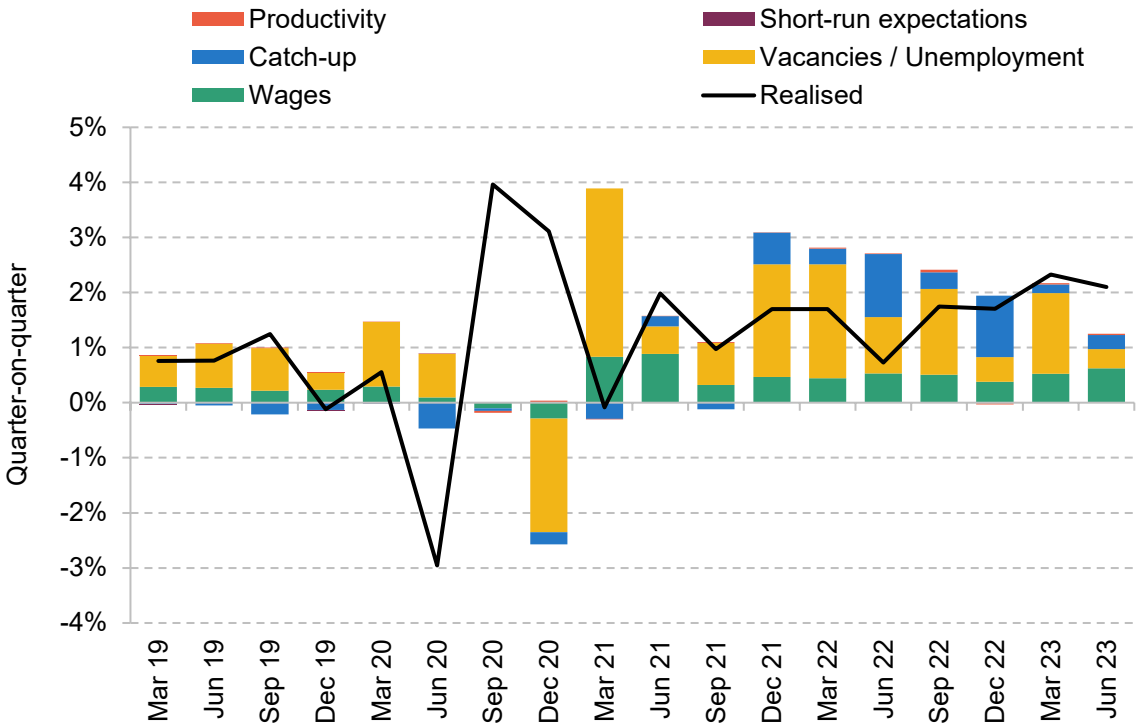
Is this the right conclusion? We would be cautious.

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

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

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

Figure 2.40. Decomposition of wage Phillips curve



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

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

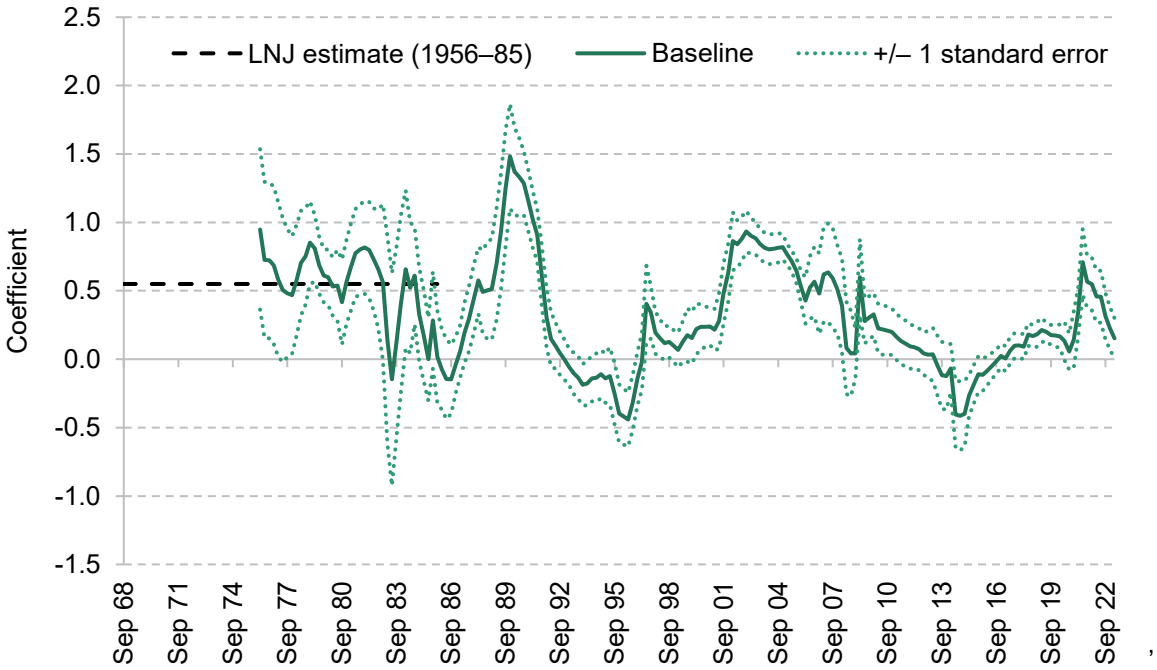
Some of the behaviour in wage growth here is a genuine puzzle. But rather than reflecting an embedded trend, we think much of the exceptional wage growth we have seen in recent months can be explained by one-off and backward-looking factors. The impact of the National Living Wage, for one, is no small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

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

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

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

Figure 2.41. Rolling estimate of real wage 'rigidity'



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

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

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

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

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

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

Expectations, expectations, expectations

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

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

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

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

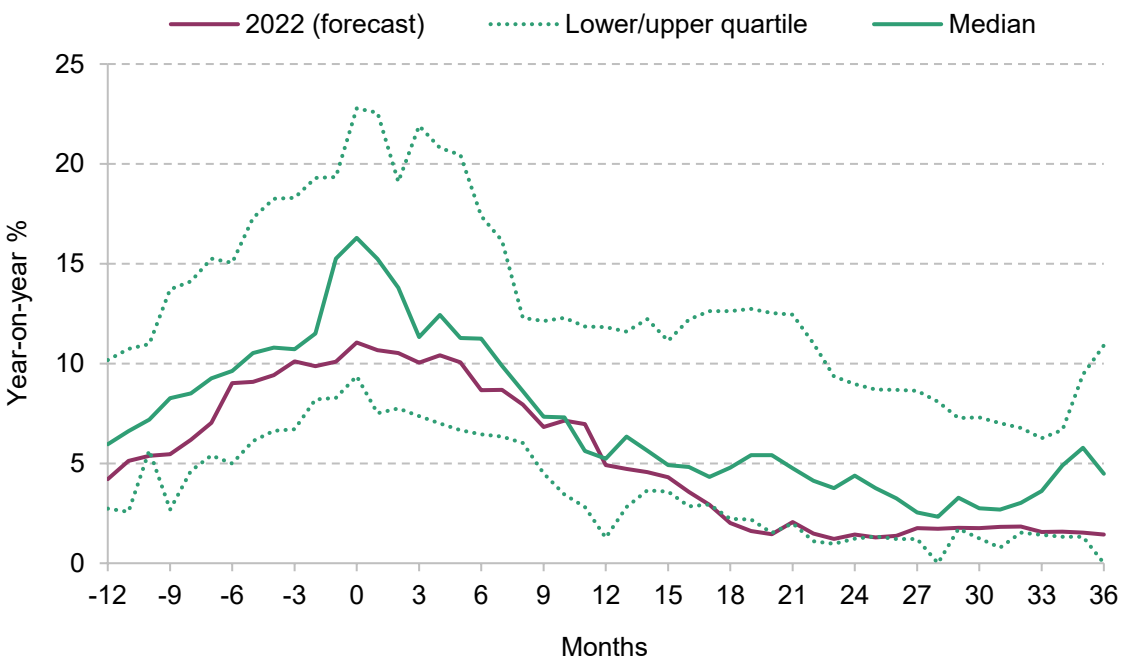
above target for a further three quarters (until Q2 of 2024). The scale and duration of the inflationary episode are testament to the severity of the supply shocks that have buffeted the UK economy (see Section 2.2). But we would note that sequential wage and services inflation are now back at target-consistent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

Summing up: slack and inflation

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

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

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



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

Source: ONS and Citi Research.

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

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

2.5 Conclusion: brave new world

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

The economic outlook: brave new world

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

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

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

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

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

Policy implications: playing to the edge

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

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

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

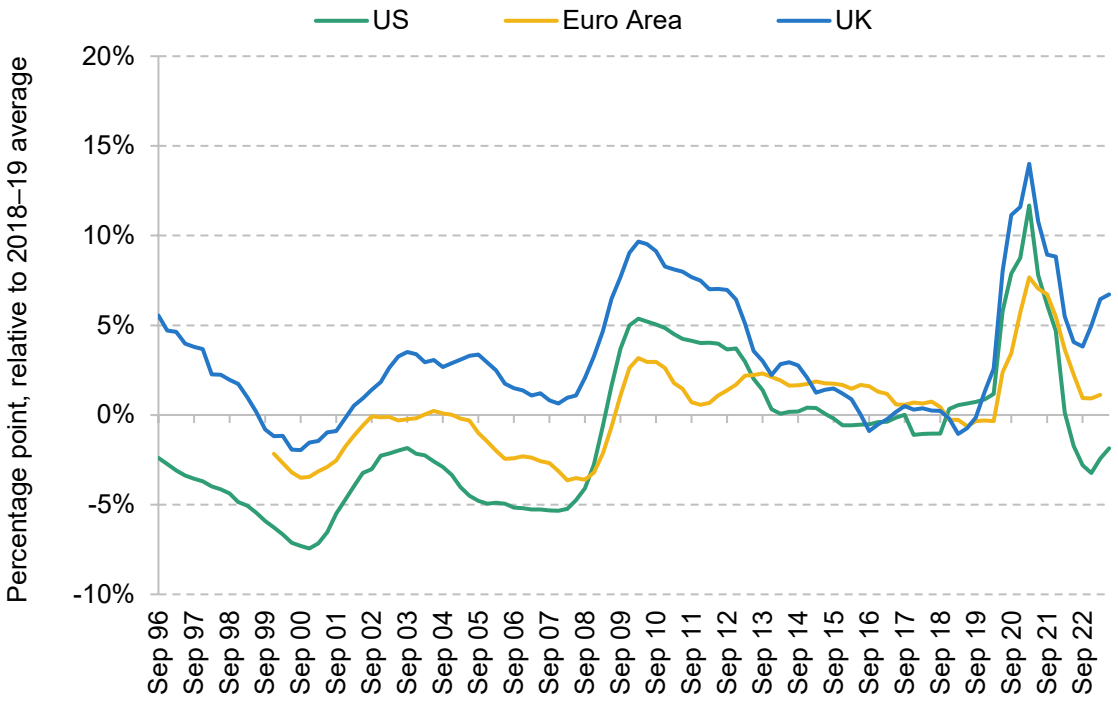
Even based on the spot data, we think there are signs that these conditions increasingly no longer apply. In particular, the *cost of doing too little* is now also not obviously greater than the cost of doing too much in our view. This relates first to evidence of a turn in the labour market. It also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

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

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

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

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



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

Source: ONS, national statistical offices and Citi Research.

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

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

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

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

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

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

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

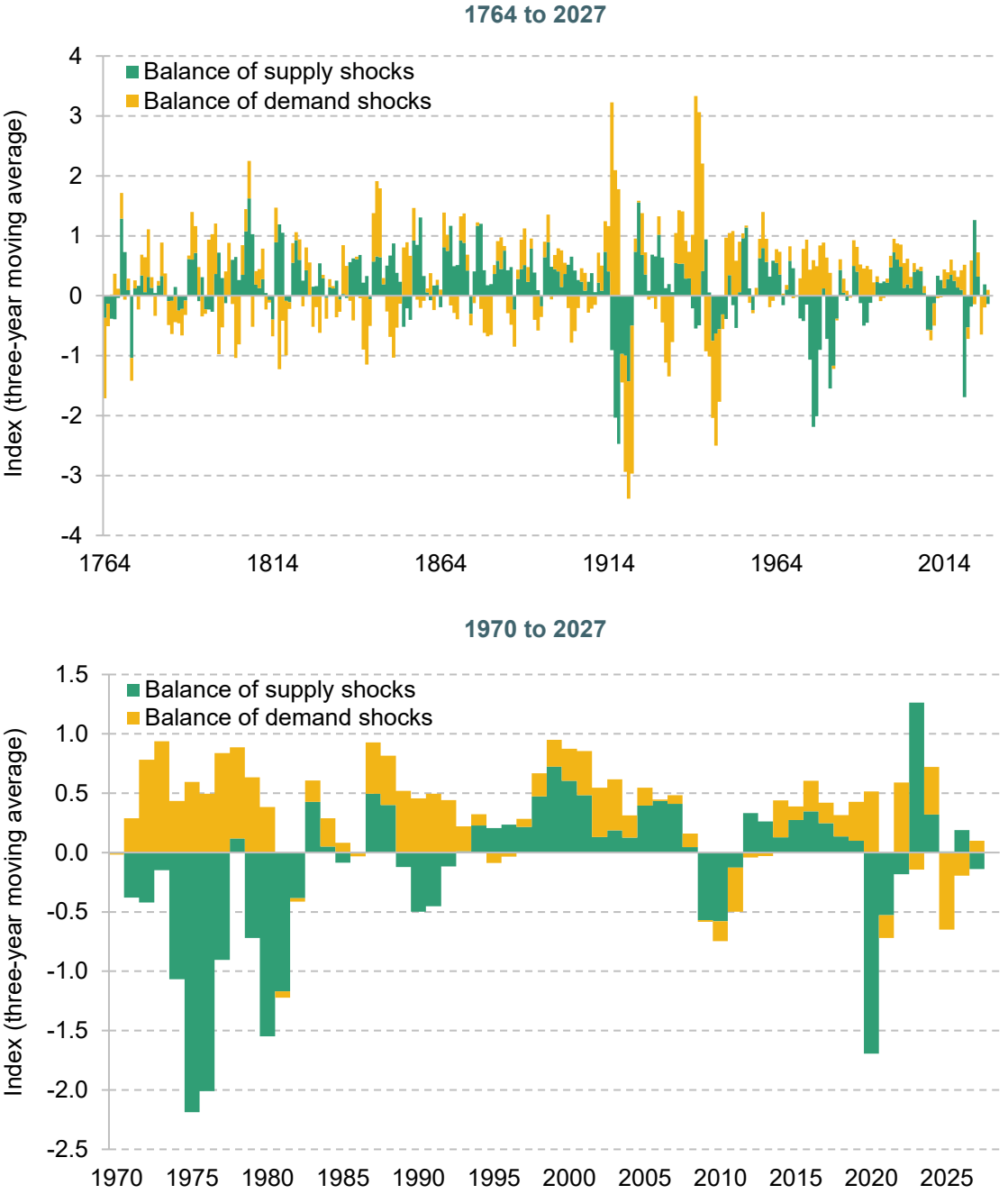
Lessons (not) learned: making the economy safe for supply shocks

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

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

We think there are three points worth noting here.

Figure 2.44. Decomposition of macroeconomic volatility



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

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

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

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

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

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

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

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

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

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

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

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

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

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

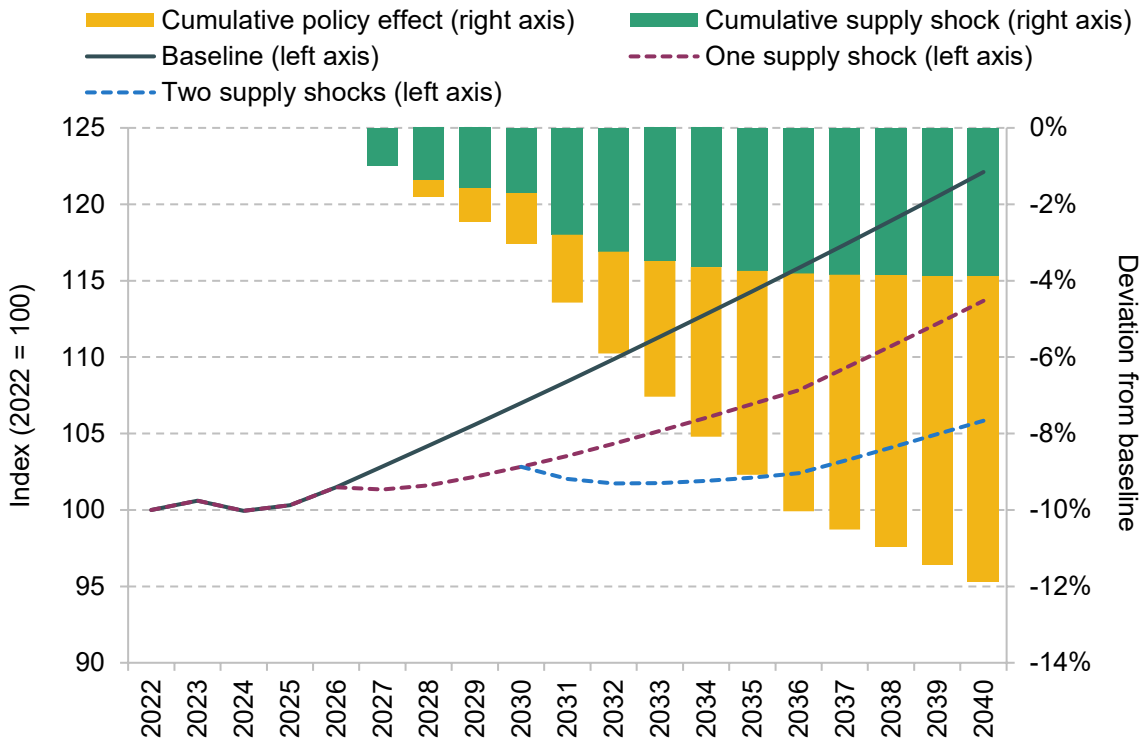
[43] One way of thinking about this point is that ordinarily in the event of an imported cost shock, such as an oil price shock, policy faces a trade-off but only between the 'second-round' effects on domestic wage and price setting (see Blanchard and Galí (2008)). This is because the primary trade-off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

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

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

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

Figure 2.45. Illustrative real GDP profile in adverse supply scenario



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

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

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

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

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

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

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

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

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

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

Policy recommendations: three conclusions

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

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

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

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

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

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

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