

**Bank of England**

# Monetary Policy Report

**Monetary Policy Committee**  
August 2023



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# Monetary policy at the Bank of England

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## The objectives of monetary policy

The Bank's Monetary Policy Committee (MPC) sets monetary policy to keep inflation low and stable, which supports growth and jobs. Subject to maintaining price stability, the MPC is also required to support the Government's economic policy.

The Government has set the MPC a target for the 12-month increase in the Consumer Prices Index of 2%.

The 2% inflation target is symmetric and applies at all times.

The MPC's [remit](#) recognises, however, that the actual inflation rate will depart from its target as a result of shocks and disturbances, and that attempts to keep inflation at target in these circumstances may cause undesirable volatility in output. In exceptional circumstances, the appropriate horizon for returning inflation to target can vary. The MPC will communicate how and when it intends to return inflation to the target.

## The instruments of monetary policy

The MPC currently uses two main monetary policy tools. First, we set the interest rate that banks and building societies earn on deposits, or 'reserves', placed with the Bank of England – this is Bank Rate. Second, we can buy government and corporate bonds, financed by the issuance of central bank reserves – this is asset purchases or quantitative easing.

## The Monetary Policy Report

The MPC is committed to clear, transparent communication. The Monetary Policy Report (MPR) is a key part of that. It allows the MPC to share its thinking and explain the reasons for its decisions.

The Report is produced quarterly by Bank staff under the guidance of the members of the MPC.

This Report has been prepared and published by the Bank of England in accordance with section 18 of the Bank of England Act 1998.

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## Monetary Policy Summary

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The Bank of England's Monetary Policy Committee (MPC) sets monetary policy to meet the 2% inflation target, and in a way that helps to sustain growth and employment. At its meeting ending on 2 August 2023, the MPC voted by a majority of 6–3 to increase Bank Rate by 0.25 percentage points, to 5.25%. Two members preferred to increase Bank Rate by 0.5 percentage points, to 5.5%, and one member preferred to maintain Bank Rate at 5%.

The Committee's updated projections for activity and inflation are set out in the accompanying August Monetary Policy Report. These are conditioned on a market-implied path for Bank Rate that rises to a peak of just over 6% and averages just under 5½% over the three-year forecast period, compared with an average of just over 4% for the equivalent period at the time of the May Report. The sterling effective exchange rate is around 4% higher than in the May Report.

Underlying quarterly GDP growth has been around 0.2% during the first half of this year. Bank staff expect a similar growth rate in the near term, reflecting more resilient household income and retail sales volumes, and most business surveys over recent months. Some more recent indicators show signs of weakening, however, including the July S&P Global/CIPS UK composite PMI.

The labour market remains tight but there are some indications that it is loosening. The LFS unemployment rate rose to 4.0% in the three months to May, somewhat higher than expected in the May Report, and the vacancies to unemployment ratio has continued to fall, although the latter still remains above historical averages.

Annual private sector regular pay growth increased to 7.7% in the three months to May, materially above expectations at the time of the May Report, and three-month on three-month growth in this measure of pay has picked up further. Earnings growth is nevertheless expected to decline in coming quarters, to around 6% by the end of this year, although there is uncertainty around this near-term outlook.

Twelve-month CPI inflation fell from 8.7% in May to 7.9% in June, lower than expected at the time of the Committee's previous meeting. Within this, core goods and services CPI inflation were both lower than expected, although the downside news in the latter, which is more likely to be informative about persistent inflationary pressures, was much smaller. Compared to the May Report projections, June CPI inflation was in line with expectations.

CPI inflation remains well above the 2% target. It is expected to fall significantly further, to around 5% by the end of the year, accounted for by lower energy, and to a lesser degree, food and core goods price inflation. Services price inflation, however, is projected to remain elevated at close to its current rate in the near term.

In the MPC's August most likely, or modal, projection conditioned on market interest rates, CPI inflation returns to the 2% target by 2025 Q2. It then falls below the target in the medium term, as an increasing degree of economic slack reduces domestic inflationary pressures, alongside declining external cost pressures. The Committee has decided in this forecast to bring some of the upside risks to inflation from persistence into its modal projection, pushing up on this inflation projection in the medium term relative to the May Report.

The Committee continues to judge that risks around the modal inflation forecast are skewed to the upside, albeit by less than in May, reflecting the possibility that the second-round effects of external cost shocks on inflation in wages and domestic prices take longer to unwind than they did to emerge. Mean CPI inflation, which incorporates these risks, is 2.0% and 1.9% at the two and three-year horizons respectively.

The MPC's remit is clear that the inflation target applies at all times, reflecting the primacy of price stability in the UK monetary policy framework. The framework recognises that there will be occasions when inflation will depart from the target as a result of shocks and disturbances. Monetary policy will ensure that CPI inflation returns to the 2% target sustainably in the medium term.

Recent data outturns have been mixed. However, some key indicators, notably wage growth, suggest that some of the risks from more persistent inflationary pressures may have begun to crystallise. At this meeting, the Committee voted to increase Bank Rate by 0.25 percentage points, to 5.25%.

Given the significant increase in Bank Rate since the start of this tightening cycle, the current monetary policy stance is restrictive. The MPC will continue to monitor closely indications of persistent inflationary pressures and resilience in the economy as a whole, including the tightness of labour market conditions and the behaviour of wage growth and services price inflation. If there were to be evidence of more persistent pressures, then further tightening in monetary policy would be required. The MPC will ensure that Bank Rate is sufficiently restrictive for sufficiently long to return inflation to the 2% target sustainably in the medium term, in line with its remit.

# 1: The economic outlook

CPI inflation remains well above the 2% target, having fallen back to 7.9% in June in line with expectations in the May Monetary Policy Report. Both services and core goods CPI inflation have been stronger than expected, although news in the latter is in general less likely to imply persistent inflationary pressures. The Committee expects CPI inflation to continue to fall, to around 5% by the end of the year, owing to lower energy, and to a lesser degree, food and core goods price inflation. Annual private sector regular pay growth has increased further, to 7.7% in the three months to May, materially above expectations in the May Report. The near-term outlook for regular pay growth is uncertain, but the MPC expects it to decline to around 6% by the end of this year.

Sharp increases in energy, food and other import prices over the past two years have had second-round effects on domestic prices and wages. These second-round effects are likely to take longer to unwind than they did to emerge, and the MPC has placed weight in its recent forecasts on the risk that they might persist for longer. The Committee now judges that some of this risk may have begun to crystallise. As a result, the MPC has decided to bring some of the upside risks to inflation from persistence into its most likely, or modal, projection. In this forecast, and assuming Bank Rate follows the path implied by financial markets, an increasing degree of slack in the economy and declining external cost pressures lead CPI inflation to return to the 2% target by 2025 Q2 and to fall below target in the medium term, but to a lesser degree than projected in the May Report. The Committee continues to judge that the risks to the modal forecast are skewed to the upside, but by less than in May. Taking account of this skew, mean CPI inflation is 2.0% and 1.9% at the two and three-year horizons respectively.

Past increases in Bank Rate, and the higher path of market interest rates on which the forecast is conditioned, will weigh to an increasing degree on UK activity and inflation in coming quarters. GDP growth is expected to remain below pre-pandemic rates in the medium term, also reflecting relatively weak potential supply and a waning boost from fiscal policy. Relative to the May projection, quarterly GDP growth is expected to be weaker throughout much of the forecast period, particularly during 2024 and at the beginning of 2025.

The UK economy has been in excess demand over recent quarters, but an increasing degree of economic slack is expected to emerge after the middle of next year. The labour market remains tight but there are some indications that it is loosening. The LFS unemployment rate rose to 4.0% in the three months to May and the vacancies to unemployment ratio has been falling since mid-2022, although the latter still remains above its 2019 Q4 level. In the MPC's August projection, the unemployment rate is projected to rise to just under 5% by 2026 Q3. Both aggregate spare capacity and unemployment increase by somewhat more in the Committee's latest projections than in the May Report, reflecting the weaker path of GDP.

**Table 1.A: Forecast summary (a) (b)**

|                                         | 2023 Q3   | 2024 Q3   | 2025 Q3   | 2026 Q3 |
|-----------------------------------------|-----------|-----------|-----------|---------|
| GDP (c)                                 | 0.8 (0.6) | 0.3 (0.6) | 0.3 (0.8) | 1.1     |
| Modal CPI inflation (d)                 | 6.9 (7.0) | 2.8 (2.9) | 1.7 (1.0) | 1.5     |
| Mean CPI inflation (d)                  | 6.9 (7.0) | 3.1 (3.7) | 2.0 (1.8) | 1.9     |
| LFS unemployment rate                   | 4.1 (3.8) | 4.3 (3.9) | 4.8 (4.4) | 4.8     |
| Excess supply/ <b>Excess demand</b> (e) | ½ (0)     | -½ (-¾)   | -1¼ (-1)  | -1½     |
| Bank Rate (f)                           | 5.3 (4.7) | 6.0 (4.2) | 5.2 (3.7) | 4.5     |

(a) Figures in parentheses show the corresponding projections in the May 2023 Monetary Policy Report.

(b) Unless otherwise stated, the numbers shown in this table are modal projections and are conditioned on the assumptions described in Section 1.1. The main assumptions are set out in [Monetary Policy Report – Download the chart slides and data – August 2023](#).

(c) Four-quarter growth in real GDP.

(d) Four-quarter inflation rate. The modal projection is the single most likely outcome. If the risks are symmetrically distributed around this central view, this will also provide a view of the average outcome or mean forecast. But when the risks are skewed, as in the current forecast, the mean projection will differ from the mode.

(e) Per cent of potential GDP. A negative figure implies output is below potential and a positive that it is above.

(f) Per cent. The path for Bank Rate implied by forward market interest rates. The curves are based on overnight index swap rates.



## 1.1: The conditioning assumptions underlying the MPC's projections

As set out in Table 1.B, the MPC's projections are conditioned on:

- The paths for policy rates implied by financial markets, as captured in the 15-working day average of forward interest rates to 25 July, which are higher than in the May Monetary Policy Report (Chart 2.3). In particular, the market-implied path for Bank Rate in the United Kingdom rises to a peak of just over 6% and averages just under 5½% over the next three years, compared with an average of just over 4% for the equivalent period at the time of the May Report.
- A path for the sterling effective exchange rate index that is around 3½% stronger on average than in the May Report, but is depreciating gradually over the forecast period given the role for expected interest rate differentials in the Committee's conditioning assumption.
- Fiscal policy that evolves in line with announced government policies to date, including the most recent measures in the Spring Budget.
- Wholesale energy prices that follow their respective futures curves over the forecast period. Since May, gas and crude oil futures curves have moved slightly lower. Significant uncertainty remains around the outlook for wholesale energy prices.
- Household energy prices that, from 2023 Q3, move in line with Bank staff estimates of the Ofgem price cap implied by the path of wholesale energy prices (Section 2.6), having previously been determined by the Energy Price Guarantee.

**Table 1.B: Conditioning assumptions (a) (b)**

|                                               | Average<br>1998–2007 | Average<br>2010–19 | Average<br>2020–21 | Average<br>2022 | 2023      | 2024      | 2025      |
|-----------------------------------------------|----------------------|--------------------|--------------------|-----------------|-----------|-----------|-----------|
| Bank Rate<br>(c)                              | 5.0                  | 0.5                | 0.1                | 2.8             | 5.8 (4.8) | 5.9 (4)   | 5.0 (3.7) |
| Sterling<br>effective<br>exchange<br>rate (d) | 100                  | 82                 | 80                 | 78              | 82 (79)   | 81 (79)   | 81 (78)   |
| Oil prices<br>(e)                             | 39                   | 78                 | 62                 | 88              | 79 (81)   | 75 (76)   | 72 (72)   |
| Gas prices<br>(f)                             | 29                   | 52                 | 169                | 201             | 113 (137) | 139 (148) | 114 (123) |
| Nominal<br>government<br>expenditure<br>(g)   | 7½                   | 2¼                 | 9                  | 4¼              | 4 (4½)    | 3 (2¾)    | 1½ (1½)   |

Sources: Bank of England, Bloomberg Finance L.P., Office for Budget Responsibility (OBR), ONS, Refinitiv Eikon from LSEG and Bank calculations.

(a) The table shows the projections for financial market prices, wholesale energy prices and government spending projections that are used as conditioning assumptions for the MPC's projections for CPI inflation, GDP growth and the unemployment rate. Figures in parentheses show the corresponding projections in the May 2023 Monetary Policy Report.

(b) Financial market data are based on averages in the 15 working days to 25 July 2023. Figures show the average level in Q4 of each year, unless otherwise stated.

(c) Per cent. The path for Bank Rate implied by forward market interest rates. The curves are based on overnight index swap rates.

(d) Index. January 2005 = 100. The convention is that the sterling exchange rate follows a path that is half way between the starting level of the sterling ERI and a path implied by interest rate differentials.

(e) Dollars per barrel. Projection based on monthly Brent futures prices.

(f) Pence per therm. Projection based on monthly natural gas futures prices.

(g) Annual average growth rate. Nominal general government consumption and investment. Projections are based on the OBR's March 2023 Economic and Fiscal Outlook. Historical data based on NMRP+D7QK.

## 1.2: Key judgements and risks

**Key judgement 1: past increases in Bank Rate, and the higher path of market interest rates on which the forecast is conditioned, weigh to an increasing degree on the UK economy in coming quarters. GDP growth remains below pre-pandemic rates in the medium term, also reflecting relatively weak potential supply and a waning boost from fiscal policy.**

UK GDP is expected to have grown by 0.1% in 2023 Q2, slowed by the additional bank holiday for the King's Coronation. Underlying quarterly growth is judged to have been around 0.2% during the first half of this year and Bank staff expect a similar rate in the near term. This is consistent with most business surveys of output over recent months, and developments in household income and retail sales volumes.

Given the continued resilience of economic activity over recent months, the Committee has increased somewhat its judgement from recent forecast rounds to boost the expected path of demand. This reflects a number of factors, including the possibility of lower precautionary saving by households than previously assumed, in turn related to a lower risk of job loss given the continued strength in labour market activity (Key judgement 2).

The pass-through of past increases in Bank Rate, and the latest, significantly higher, market-implied interest rate path on which the forecast is conditioned (Section 1.1), nonetheless push down on GDP over the forecast period. As well as increasing the cost of borrowing, Bank Rate rises affect asset prices, incomes and the exchange rate, all of which will influence the decisions taken by firms and households. This is discussed in more detail in Section 2.3.

The Committee is continuing to monitor closely the impact of the significant increases in Bank Rate so far. Both the GfK consumer confidence index and the flash S&P Global/CIPS UK composite PMI fell quite sharply in July, following the 0.5 percentage point increase in Bank Rate at the June MPC meeting. Realised and expected real sales growth in the latest Decision Maker Panel were unchanged in the three months to July, however. In the most recent period, a greater number of contacts of the Bank's Agents reported a slowing in the outlook for activity, with the increase in interest rates having played a role.

Taking account of all announced government plans, the positive impacts of past fiscal loosening measures on the level of GDP unwind, which generally pulls down on GDP growth over much of the forecast period.

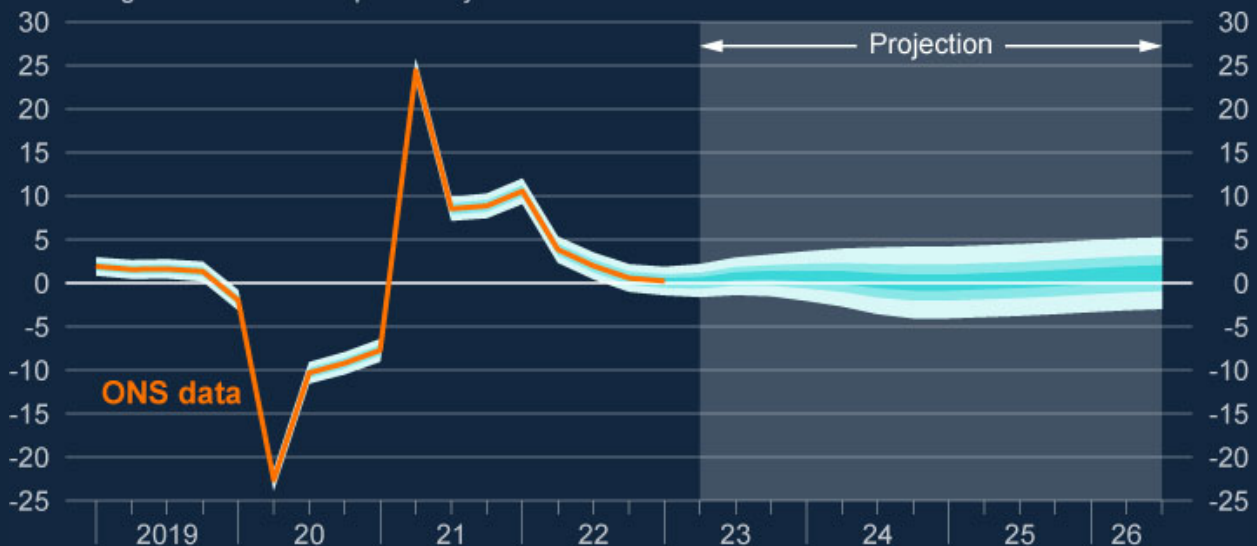
In the Committee's August projection, GDP growth is projected to weaken into 2024, as past increases in Bank Rate, and the path of market interest rates on which the forecast is conditioned, weigh on demand to an increasing degree. GDP growth recovers over the second half of the forecast period, although it remains below pre-pandemic rates in the medium term. As well as the impact of higher interest rates, this reflects relatively weak potential supply (Key judgement 1 in the February 2023 Report) and a waning boost from fiscal policy.

Calendar-year GDP growth is expected to be  $\frac{1}{2}\%$  in 2023 and in 2024, and  $\frac{1}{4}\%$  in 2025 (Table 1.D). Four-quarter GDP growth picks up to just over 1% by 2026 Q3 (Chart 1.1).

Relative to the May Monetary Policy Report projection, quarterly GDP growth is expected to be weaker throughout much of the forecast period, particularly during 2024 and at the beginning of 2025. The level of GDP is around  $\frac{3}{4}\%$  lower by the end of the forecast period. That lower level reflects the projected impact of the higher path of market interest rates on which the forecast is conditioned and, to a lesser degree, the estimated impact of the exchange rate appreciation (Section 1.1). These factors have been offset partially by the Committee's judgement to boost demand, given the continued resilience of economic activity over recent months.

**Chart 1.1: GDP growth projection based on market interest rate expectations, other policy measures as announced**

Percentage increases in output on a year earlier



The fan chart depicts the probability of various outcomes for GDP growth. It has been conditioned on Bank Rate following a path implied by market yields, but allows the Committee's judgement on the risks around the other conditioning assumptions set out in Section 1.1, including wholesale energy prices, to affect the calibration of the fan chart skew. To the left of the shaded area, the distribution reflects uncertainty around revisions to the data over the past. To the right of the shaded area, the distribution reflects uncertainty over the evolution of GDP growth in the future. If economic circumstances identical to today's were to prevail on 100 occasions, the MPC's best collective judgement is that the mature estimate of GDP growth would lie within the darkest central band on only 30 of those occasions. The fan chart is constructed so that outturns are also expected to lie within each pair of the lighter aqua areas on 30 occasions. In any particular quarter of the forecast period, GDP growth is therefore expected to lie somewhere within the fan on 90 out of 100 occasions. And on the remaining 10 out of 100 occasions GDP growth can fall anywhere outside the aqua area of the fan chart. Over the forecast period, this has been depicted by the grey background. See the Box on page 39 of the November 2007 Inflation Report for a fuller description of the fan chart and what it represents.

In the GDP projection conditioned on the alternative assumption of constant interest rates at 5.25% over the forecast period, growth is broadly similar on average across the forecast period to the MPC's projection conditioned on market rates, as the market curve is higher than the constant rate assumption in coming quarters but then falls below it further out.

Within the components of GDP underpinning the August most likely, or modal, projection conditioned on market interest rates, calendar-year household spending is expected to rise by  $\frac{1}{2}\%$  in 2023, and by  $\frac{3}{4}\%$  in 2024 and 2025 (Table 1.D). Real post-tax household labour income is projected to grow modestly over the forecast period. In part reflecting the Committee's judgement to boost demand, the household saving ratio, which has remained above its pre-pandemic level, is expected to decline moderately, towards a level that is broadly consistent with its past relationship with wealth, interest rates and unemployment. The medium-term paths of both consumption and household income are nonetheless somewhat weaker than in the May Report.

Business investment is expected to rise by  $1\frac{3}{4}\%$  in 2023, to fall by 2% in 2024 and to increase by  $1\frac{3}{4}\%$  in 2025. This is broadly similar across the whole forecast period to that in the May Report.

In large part reflecting the transmission of higher interest rates, housing investment is expected to fall significantly, by around 6% in both 2023 and 2024, and by 3% in 2025. This profile is weaker than in the May Report.

UK-weighted world GDP is projected to be slightly lower in the near term than in the May Report, accounted for primarily by weakness in the euro area and in China. Near-term activity in the United States is expected to be slightly stronger, however. As in the United Kingdom, global growth is being pulled down by the higher market-implied path of interest rates. Overall, global GDP is expected to grow at a moderate pace throughout the forecast period, broadly unchanged from the May Report in the medium term. In the MPC's modal projection, annual UK-weighted world GDP growth is projected to rise from  $1\frac{1}{2}\%$  to 2% over the forecast period (Table 1.D). That compares with average annual growth of around  $2\frac{1}{2}\%$  in the decade prior to the pandemic.

**The risks around the projection for UK GDP growth are judged to be broadly balanced.**

There are risks in both directions around the central projections for household spending and GDP, including related to the Committee's judgements to boost the expected path of demand in light of recent strength in the labour market. Spending could be stronger than expected if some households choose to save less or run down existing stocks of savings

to a greater extent. As set out in Annex 1 of this Report, external forecasters' average medium-term projections for GDP remain stronger than the MPC's, particularly in 2025. Conversely, demand could be weaker than expected if some people become more worried about their job security and try to build up their savings to a greater extent, or if there is less scope for some households to run down existing stocks of savings that have already been eroded in real terms by high inflation. Were the weaker trend in the most recent readings of some indicators of activity to continue, there could be a downside risk to the MPC's near-term GDP projection.

There are also risks related more particularly to the transmission of monetary policy. There may be the potential for remortgaging behaviour to slow or weaken the transmission of higher interest rates to the economy, including if more households than usual choose to extend the terms of their mortgage than choose to shorten their terms. Such behaviour would have to be more widespread than in the past to have a material impact on the transmission of policy, however, and there are limits on how far mortgagors are able to extend terms. There could also be changes in the response of consumption to higher interest rates, for example if some mortgagors who need to refinance in the future take, or are already taking, advance actions to prepare for spending more on interest costs.

Regarding the housing channel of monetary policy, several factors should limit the impact of higher interest rates on mortgage defaults and therefore may reduce downward pressure on house prices from any forced sales of owner-occupied properties. For example, the Financial Policy Committee's mortgage market measures and the Financial Conduct Authority's (FCA's) responsible lending requirements have increased borrower resilience, and robust capital and profitability mean that UK banks have options to offer forbearance. In addition, mortgage lenders, the Chancellor of the Exchequer, and the FCA agreed new support measures for residential mortgage holders as part of the Mortgage Charter published on 26 June. There could, however, be greater sales of properties by buy-to-let investors, given the sector's larger size relative to previous downturns and the range of factors currently putting pressure on investors' profitability, although market exits from landlords have not so far been on a scale that is likely to have a material impact on overall house prices (Section 2.1 of the [July 2023 Financial Stability Report](#)).

More generally, the MPC's aggregate projections are constructed based in large part on the average relationships over the past between Bank Rate, other financial instruments and economic activity. The Committee will continue to keep all of these relationships under review, including how they may have changed during the current monetary policy tightening cycle.

**Key judgement 2: the UK economy has been in excess demand over recent quarters, but an increasing degree of economic slack is expected to emerge after the middle of next year.**

The Committee continues to judge that there has been a significant margin of excess demand in the economy over recent quarters, in part reflecting the weakness of potential supply. That excess demand can be accounted for by both the tightness of the labour market and a higher than normal degree of capacity utilisation within companies. In part reflecting the resilience of activity over recent months, there is judged to be greater excess demand currently than expected in the May Report.

There are nevertheless some indications that the labour market is loosening (Section 2.5). The LFS unemployment rate rose to 4.0% in the three months to May and is also expected to have been at that level in 2023 Q2. This is 0.2 percentage points higher than expected in the May Report. The vacancies to unemployment ratio has been falling since mid-2022, although it remains above its 2019 Q4 level. The Bank's Agents have reported that recruitment conditions remain tighter than normal for most of their contacts, but that they have eased significantly for lower-skilled roles.

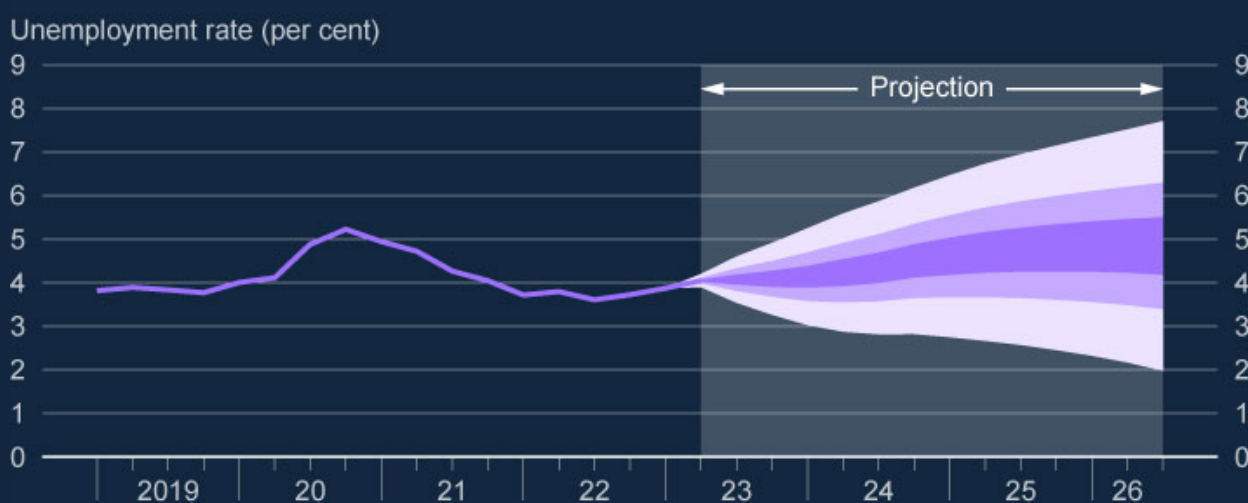
The unemployment rate is expected to be slightly above 4% during the second half of 2023, slightly below the latest estimate of the medium-term equilibrium rate of unemployment. Based on a simple extrapolation of recent trends, the ratio of vacancies to unemployment could return to its pre-pandemic level around the turn of the year. This would, nevertheless, still leave the ratio somewhat higher than its historical average.

A fall in the labour market inactivity rate has been the counterpart to a continued rise in employment rate over recent quarters, which has in turn boosted activity in the economy (Key judgement 1). According to the current vintage of ONS data, the participation rate is now only 0.3 percentage points below its 2019 Q4 level. In addition to a continuation of the recent trend for students to be more active in the labour market, recent data suggest that fewer people are becoming inactive due to early retirement or because they need to look after family (Chart 2.13). The number of people who are inactive due to long-term sickness has remained elevated, however. In light of recent news, the Committee has revised up its view of the sustainable level of labour market participation. However, this has not affected its view of the overall degree of excess demand in the economy.

Although aggregate supply is expected to remain relatively weak, the headwinds to demand, including from the path of market interest rates on which the forecast is conditioned, lead to an increasing degree of economic slack emerging in the Committee's projections after the middle of next year. Companies are expected to respond to this

weakness by retaining their existing inputs, while using them less intensively and hoarding labour for a prolonged period. As a result, in the MPC's August modal projection, the unemployment rate is projected to rise in 2024 and then increase fairly gradually thereafter such that it reaches just under 5% by 2026 Q3 (Chart 1.2). The margin of aggregate excess supply is expected to widen to 1½% of potential GDP by the end of the forecast period (Table 1.A). Both aggregate spare capacity and unemployment increase by somewhat more in the Committee's latest projections than in the May Report, reflecting the weaker path of GDP (Key judgement 1).

**Chart 1.2: Unemployment rate projection based on market interest rate expectations, other policy measures as announced**



The fan chart depicts the probability of various outcomes for LFS unemployment. It has been conditioned on Bank Rate following a path implied by market yields, but allows the Committee's judgement on the risks around the other conditioning assumptions set out in Section 1.1, including wholesale energy prices, to affect the calibration of the fan chart skew. The coloured bands have the same interpretation as in Chart 1.1, and portray 90% of the probability distribution. The fan begins in 2023 Q2, a quarter earlier than for CPI inflation. That is because Q2 is a staff projection for the unemployment rate, based in part on data for April and May. The unemployment rate was 4.0% in the three months to May, and is projected to remain at that level in Q2 as a whole. A significant proportion of this distribution lies below Bank staff's current estimate of the long-term equilibrium unemployment rate. There is therefore uncertainty about the precise calibration of this fan chart.

In projections conditioned on the alternative assumption of constant interest rates at 5.25% over the forecast period, the unemployment rate rises to a similar degree on average over the forecast period to the MPC's projection conditional on market rates, as the market curve is higher than the constant rate assumption in coming quarters but then falls below it further out.



**The risks around the unemployment rate projection are judged to be broadly balanced.**

The labour market could remain tight for longer than assumed for a number of reasons, including the upside risks around the outlook for demand (Key judgement 1). For a given demand profile, an increase in labour hoarding could prolong the tightness in the labour market, although it may not affect the overall degree of slack in the economy. Conversely, the labour market could loosen more rapidly than assumed, again including because of any downside risks to demand. There is also uncertainty around the extent to which the number of job vacancies can continue to fall without any significant adjustment in employment.

As discussed in the February 2023 Report, it remains difficult to interpret developments in labour market participation, and the extent to which they may be having an impact on spare capacity in the economy. There is also significant uncertainty about the equilibrium rate of unemployment in the economy. Higher-than-expected wage growth after the terms of trade shock that has affected the economy suggests that the medium-term equilibrium rate is likely to be higher. This implies a stronger outlook for wage growth and inflationary pressures all else equal (Key judgement 3). There is also some evidence that the efficiency with which vacancies are matched to those seeking work has decreased over recent years, which would also push up on the equilibrium rate of unemployment. The Committee will undertake a broader review of these issues, and the overall supply capacity of the economy, in its next regular stocktake.

**Key judgement 3: second-round effects in domestic prices and wages are likely to take longer to unwind than they did to emerge. In the modal forecast conditioned on market interest rates, an increasing degree of slack in the economy and declining external cost pressures lead CPI inflation to return to the 2% target by 2025 Q2 and to fall below target in the medium term, but to a lesser degree than projected in the May Report. The Committee continues to judge that the risks are skewed to the upside, but by less than in May. Taking account of this skew, mean CPI inflation is 2.0% and 1.9% at the two and three-year horizons respectively.**

Twelve-month CPI inflation remains well above the 2% target, having fallen back to 7.9% in June in line with expectations in the May Report. In 2023 Q2, CPI inflation averaged 8.4%, slightly higher than the projection in the May Report. Inflation is expected to continue to fall, to an average of 6.9% in 2023 Q3 and 4.9% in Q4 (Table 1.C). That near-term decline is expected to be accounted for by lower energy, and to a lesser degree, food and core goods price inflation.

Reflecting recent wholesale energy price developments, the direct contribution of energy prices to CPI inflation is projected to fall further and then turn more negative from October. At that point, the Ofgem price cap for household gas and electricity bills is expected to fall to slightly below £2,000 per year, compared with the comparable figure of £2,500 in October 2022 that was set by the Government's Energy Price Guarantee. Over the second and third years of the forecast period, the direct energy contribution to inflation is expected to be generally around zero or slightly negative, based on the downward slope of wholesale futures curves.

Food price inflation has remained extremely high, falling from just under 20% in March to 17.3% in June. Based in part on evidence from the Bank's Agents (Box C), the contribution of food prices to CPI inflation is projected to fall from around 2 percentage points in June to 1.3 percentage points in 2023 Q4. The Committee has retained its judgement from the May Report that, relative to the broader balance of demand and supply in the economy, food prices will on average boost CPI inflation by around an additional 1 percentage point in coming quarters, although this is not expected to persist further out.

Core goods CPI inflation picked up to around 6½% in 2023 Q2, even as other, potentially leading, indicators of goods prices have continued to weaken (Section 2.6). For example, annual input and output producer price inflation moderated to -2.7% and 0.1% respectively in June. Bank staff expect core consumer goods price inflation to ease gradually during the rest of this year.

Four-quarter UK-weighted world export price inflation, excluding the direct effect of oil prices, is expected to have turned negative in 2023 Q2 and to remain so over coming quarters. This reflects the indirect effects of lower energy prices, the continued unwinding of supply chain bottlenecks and weak producer price inflation. Recent weakness in Chinese tradable goods prices appears broadly consistent with such an outlook. World export price inflation is projected to be slightly positive in the second half of the forecast period, broadly unchanged from the May Report.

On the other hand, UK import prices have continued to rise over recent quarters and have been stronger than past relationships with world export prices and the sterling exchange rate would have suggested. The Committee has made a judgement to allow this unexplained strength in the level of import prices to persist over the forecast period. The continued recent appreciation of the sterling exchange rate (Section 1.1) will, however, put some downward pressure on import price inflation, and over time on CPI inflation, relative to the May Report. Overall, import prices are projected to fall by 4½% in 2023, by 3¼% in 2024 and to rise by ½% in 2025 (Table 1.D).

Services CPI inflation, developments in which are more likely to indicate persistent inflationary pressures, increased to over 7% in 2023 Q2, and is now contributing more to headline inflation than other high-level components (Chart 2.18). That probably reflects resilient demand, the strength of nominal pay growth and, to a lesser degree, non-labour input costs. Services inflation was stronger than expected in the May Report, although some of this news can be accounted for by components that have historically been less informative about underlying inflationary pressures (Section 2.6). Services price inflation is projected to remain elevated in the near term, at around 7% (Chart 2.19).

Annual private sector regular pay growth has also increased further, to 7.7% in the three months to May, materially above expectations in the May Report. On a three-month on three-month annualised basis, pay growth has risen significantly, to 9.2% in May. Recent outturns appear to have been notably stronger than a standard model of wage growth, based on productivity, short-term inflation expectations and a measure of economic slack, would have predicted.

The near-term outlook for pay growth is expected to be stronger than projected in the May Report. The annual growth rate is nonetheless projected to decline in coming quarters, to around 6% by 2023 Q4, which requires a rapid decline in three-month on three-month growth during the second half of the year. The Bank's Agents report that pay settlements are expected to ease slightly in the second half of 2023.

The Committee noted in the minutes of its June meeting that there has been significant upside news in recent data that indicates more persistence in the inflation process and which is therefore likely to have implications for the medium-term projection for CPI inflation.

Analysis by Bank staff supports the view that there are non-linearities in the way inflation is reacting to changes in demand. In particular, there is some evidence that the response is greater, to any given increase in demand, when spare capacity is more limited to begin with. Such non-linearities might help to explain some of the recent strength in domestic inflation, given the recent pattern of excess demand. In and of themselves, however, they would not result in greater persistence of inflation. If the labour market continues to loosen, as is expected in the MPC's central projection (Key judgement 2), equally marked effects on inflation in the other direction would be expected.

More relevant may be the potential asymmetry in the second-round effects of changes in global prices. Steep rises in global goods prices weighed heavily on UK real incomes in 2021 and much of 2022. In an effort to protect falling real incomes, whether wages or profits, employees and domestic firms have sought compensation in the form of higher

nominal pay and domestic selling prices. This mechanism can also be considered as broadly equivalent to an increase in the medium-term equilibrium rate of unemployment and hence consistent with a tighter labour market and greater upward pressure on wage and price inflation. As global prices cease to rise, and in some cases reverse, this should in time reduce the corresponding pressure on domestic inflation. But, to the extent that employees and firms are still seeking to recoup lost incomes, second-round effects are likely to take longer to unwind than they did to emerge.

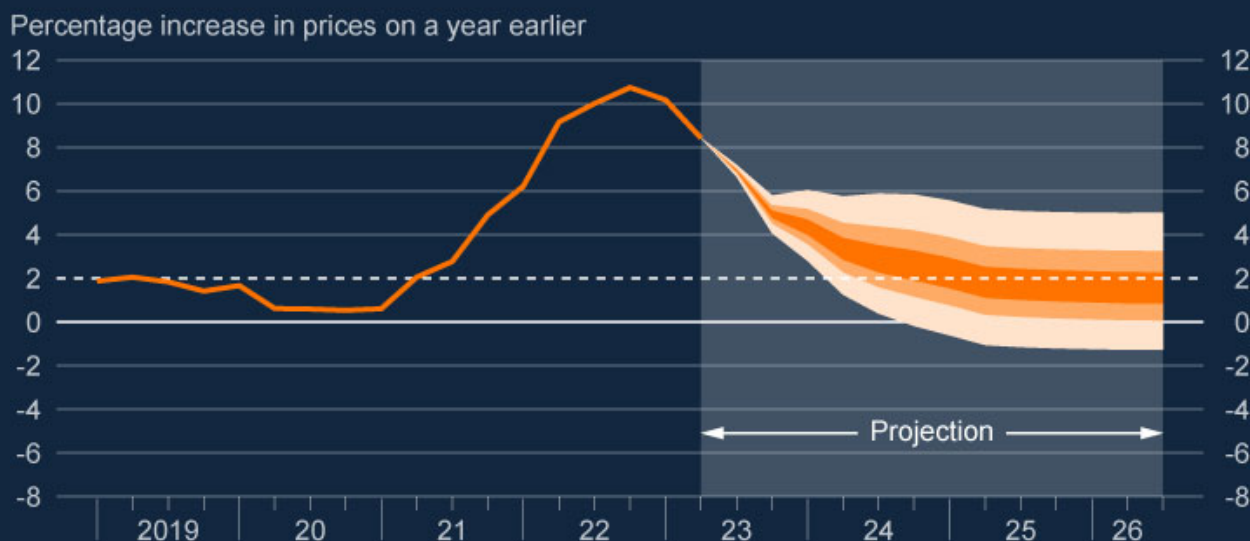
The current circumstances are highly unusual. As such, it is hard to be precise about the extent of this asymmetry. Nevertheless, the Committee has for this reason judged previously that, relative to a modal expectation of significant declines in domestic inflation, there were material upside risks over the medium term. The MPC now judges that some of these risks may have begun to crystallise. In its latest August modal projection, and in addition to other similar judgements in previous Reports, the Committee has made a judgement to increase the persistence of inflation in wages and domestic prices. In addition to the MPC's judgement to boost demand further in this forecast (Key judgement 1), this pushes up on the medium-term modal CPI inflation projection materially relative to the May Report.

In the MPC's modal projection conditioned on the higher path of market interest rates as captured in the 15-working day average to 25 July, CPI inflation declines to below the 2% target in the medium term, as an increasing degree of economic slack is expected to reduce domestic inflationary pressures, alongside a slightly negative contribution from energy prices. CPI inflation is projected to return to the 2% target by 2025 Q2, and to be 1.7% at the two-year horizon and 1.5% in three years (Table 1.C and Chart 1.3).

Compared with the May Report modal projection, CPI inflation is expected to return to the 2% target marginally less rapidly in the middle of the forecast period. CPI inflation is higher in the medium term than in May, in large part reflecting the judgements that the Committee has made in this forecast including on the persistence of inflation in wages and domestic prices.

In the MPC's modal projection, average weekly earnings growth falls to around 2% by the end of the forecast period, as short-term inflation expectations are assumed to fall back and a margin of spare capacity is expected to open up in the labour market in the medium term. This is a broadly similar medium-term profile for earnings to that in the May Report, but is consistent with a stronger path of private sector regular unit wage cost growth (Table 1.D). This takes account of both earnings and productivity per employee, and is a more relevant measure of the labour costs affecting companies' pricing decisions.

**Chart 1.3: CPI inflation projection based on market interest rate expectations, other policy measures as announced**



The fan chart depicts the probability of various outcomes for CPI inflation in the future. It has been conditioned on Bank Rate following a path implied by market yields, but allows the Committee's judgement on the risks around the other conditioning assumptions set out in Section 1.1, including wholesale energy prices, to affect the calibration of the fan chart skew. If economic circumstances identical to today's were to prevail on 100 occasions, the MPC's best collective judgement is that inflation in any particular quarter would lie within the darkest central band on only 30 of those occasions. The fan chart is constructed so that outturns of inflation are also expected to lie within each pair of the lighter orange areas on 30 occasions. In any particular quarter of the forecast period, inflation is therefore expected to lie somewhere within the fans on 90 out of 100 occasions. And on the remaining 10 out of 100 occasions inflation can fall anywhere outside the orange area of the fan chart. Over the forecast period, this has been depicted by the grey background. See the Box on pages 48–49 of the May 2002 Inflation Report for a fuller description of the fan chart and what it represents.

**Table 1.C: The quarterly modal projection for CPI inflation (a)**

|               | 2023 Q3 | 2023 Q4 | 2024 Q1 | 2024 Q2 | 2024 Q3 |
|---------------|---------|---------|---------|---------|---------|
| CPI inflation | 6.9     | 4.9     | 4.3     | 3.3     | 2.8     |
|               | 2024 Q4 | 2025 Q1 | 2025 Q2 | 2025 Q3 |         |
| CPI inflation | 2.5     | 2.2     | 1.7     | 1.7     |         |
|               | 2025 Q4 | 2026 Q1 | 2026 Q2 | 2026 Q3 |         |
| CPI inflation | 1.6     | 1.5     | 1.5     | 1.5     |         |

(a) Four-quarter inflation rate.

In the modal projection conditioned on the alternative assumption of constant interest rates at 5.25% over the forecast period, CPI inflation is expected to be 1.7% and 1.4% in two years' and three years' time respectively. These are broadly similar to the Committee's forecasts at the same horizons conditioned on market rates, as the market curve is higher than the constant rate assumption in coming quarters but then falls below it further out.

**The path for inflation beyond the near term is uncertain, and the risks around the modal projection are judged to remain skewed to the upside, but by less than in the May Report.**

There remain considerable uncertainties around the pace at which CPI inflation will return sustainably to the 2% target.

In the near term, a simple mapping between producer and consumer goods prices suggests goods CPI inflation could fall faster than projected (Section 2.6). There are also risks in both directions around the near-term path of wage inflation. Some forward-looking indicators, such as the KPMG/REC UK Report on Jobs indicator, suggest wage growth could slow more sharply in the latter half of 2023 (Section 2.5). It is also possible that recent official earnings data have been boosted temporarily by one-off cost of living payments. The recent run of upside surprises on pay growth could, however, persist.

In the medium term, there remain considerable uncertainties around the Committee's judgement that second-round effects in domestic prices and wages are likely to take longer to unwind than they did to emerge. On the one hand, these risks may be more balanced following the MPC's decision this round to take greater account of persistent price and wage-setting pressures in its modal projection. On the other hand, it is possible that the medium-term equilibrium rate of unemployment could increase to a greater degree, owing both to resistance to past losses in real income and to more persistent labour market frictions and mismatch (Key judgement 2). All else equal, this would put greater upward pressure on pay growth and domestic inflationary pressures over the forecast period.

The pace at which CPI inflation falls back to the 2% target will also depend on inflation expectations. An upside risk to the inflation outlook is that households and firms are less confident that inflation will fall back quickly and do not factor such a decline into their wage and price-setting behaviour. Developments in more visible components of inflation, such as energy and food prices, are likely to have an important impact on inflation perceptions and expectations. Since the May Report, most indicators of household and corporate inflation expectations have tended to decline, while medium-term inflation compensation measures in financial markets have risen slightly and remain above their

long-term averages. The Committee will continue to monitor measures of inflation expectations very closely and act to ensure that longer-term inflation expectations are well anchored around the 2% target.

In addition, there are upside risks around the modal projection for UK CPI inflation from international factors. There remains the possibility of more persistence in consumer price inflation in the UK's major trading partners, for similar reasons to the risks of stronger domestic inflationary pressures at home including the tightness of labour markets, and wage and services price inflation remaining elevated for longer than expected. Geopolitical tensions also remain and could continue to cause disruption to the supply of agricultural products.

Overall, the Committee continues to judge that the risks around the modal projection for CPI inflation are skewed to the upside, primarily reflecting the possibility of more persistence in domestic wage and price-setting. This pushes up on the mean, relative to the modal, inflation projections in the forecast. Conditioned on market interest rates, mean CPI inflation is 2.0% and 1.9% at the two and three-year horizons respectively.

Relative to the May Report, the magnitude of this skew is judged to be smaller throughout the forecast period, reflecting the Committee's decision in this forecast to bring some of the upside risks to inflation from persistence into its modal projection. As the MPC is learning about the extent of medium-term inflationary pressures from indicators of persistence, such as wage growth and services inflation, it has reduced its upward skew on inflation to a slightly greater degree in year two of the forecast period than in year three.

In the mean projection conditioned on the alternative assumption of constant interest rates at 5.25% over the forecast period, CPI inflation is expected to be 2.0% and 1.8% in two years' and three years' time respectively.

Table 1.D: Indicative projections consistent with the MPC's modal forecast (a) (b)

|                                        | Average   |           | Projection |          |                |                |              |
|----------------------------------------|-----------|-----------|------------|----------|----------------|----------------|--------------|
|                                        | 1998–2007 | 2010–19   | 2020–21    | 2022     | 2023           | 2024           | 2025         |
| <b>World GDP (UK-weighted) (c)</b>     | <b>3</b>  | <b>2½</b> | <b>¾</b>   | <b>3</b> | <b>1½ (1¾)</b> | <b>1¾ (1¾)</b> | <b>2 (2)</b> |
| World GDP (PPP-weighted) (d)           | 4         | 3¾        | 1½         | 3½       | 2¾ (2¾)        | 2¾ (2¾)        | 3¼ (3¼)      |
| Euro-area GDP (e)                      | 2¼        | 1½        | -½         | 3½       | ½ (¾)          | 1 (1)          | 1½ (1½)      |
| US GDP (f)                             | 3         | 2¼        | 1½         | 2        | 1½ (1½)        | ¾ (1)          | 1½ (1½)      |
| Emerging market GDP (PPP-weighted) (g) | 5½        | 5         | 2¼         | 4        | 4 (4)          | 3¾ (4)         | 4¼ (4¼)      |
| of which, China GDP (h)                | 10        | 7¾        | 5¼         | 3        | 5¼ (5½)        | 4½ (4½)        | 4¾ (4¾)      |
| <b>UK GDP (i)</b>                      | <b>2¾</b> | <b>2</b>  | <b>-1¾</b> | <b>4</b> | <b>½ (¼)</b>   | <b>½ (¾)</b>   | <b>¼ (¾)</b> |
| Household consumption (j)              | 3¼        | 2         | -3½        | 5½       | ½ (¾)          | ¾ (¾)          | ¾ (1)        |
| Business investment (k)                | 3         | 3¾        | -5½        | 10¾      | 1¼ (-¼)        | -2 (0)         | 1¼ (1½)      |
| Housing investment (l)                 | 3         | 4¼        | ¾          | 7½       | -5¾ (-4¼)      | -6¼ (-3¾)      | -3 (-½)      |
| Exports (m)                            | 4¼        | 3½        | -5         | 10       | -2 (½)         | ¼ (0)          | ½ (½)        |
| Imports (n)                            | 6¼        | 4         | -5         | 13½      | -3½ (-3)       | 2 (¼)          | 1½ (1¼)      |
| Contribution of net trade to GDP (o)   | -½        | -¼        | ¼          | -1 ¼     | ½ (1 ¼)        | -½ (0)         | -¼ (-¼)      |
| Real post-tax labour income (p)        | 3¼        | 1½        | ¾          | -2¼      | 0 (-½)         | ¾ (1¼)         | ½ (1)        |



|                                                           |           |           |           |            |              |                |               |
|-----------------------------------------------------------|-----------|-----------|-----------|------------|--------------|----------------|---------------|
| Real post-tax household income (q)                        | 3         | 1½        | 0         | ¾          | 1¼ (1)       | -¼ (1)         | ¼ (1)         |
| Household saving ratio (r)                                | 7¼        | 7¾        | 14¼       | 8½         | 9¼ (8¾)      | 8½ (9)         | 8 (8¾)        |
| Credit spreads (s)                                        | ¾         | 2½        | 1¾        | 1          | ½ (1)        | ¾ (1¼)         | 1¼ (1½)       |
| Excess supply/ <b>Excess demand</b> (t)                   | 0         | -1¾       | -¾        | <b>1¼</b>  | ½ (¼)        | -¼ (-½)        | -1¼ (-1)      |
| Hourly labour productivity (u)                            | 2         | ¾         | ¼         | ½          | -¼ (-½)      | ¼ (1)          | ¾ (¾)         |
| Employment (v)                                            | 1         | 1¼        | -½        | ¾          | 1 (½)        | -½ (0)         | 0 (0)         |
| Average weekly hours worked (w)                           | 32¼       | 32        | 30¾       | 31½        | 31¾ (31¾)    | 31¾ (31¾)      | 31¾ (31¾)     |
| Unemployment rate (x)                                     | 5¼        | 6         | 4¾        | 3¾         | 4 (3¾)       | 4½ (4)         | 4¾ (4½)       |
| Participation rate (y)                                    | 63        | 63½       | 63¼       | 63¼        | 63¾ (63¼)    | 63¼ (63)       | 63 (62¾)      |
| <b>CPI inflation</b> (z)                                  | <b>1½</b> | <b>2¼</b> | <b>2¾</b> | <b>10¾</b> | <b>5 (5)</b> | <b>2½ (2¼)</b> | <b>1½ (1)</b> |
| UK import prices (aa)                                     | -½        | 1¼        | 2½        | 13½        | -4½ (-8¼)    | -3¼ (-2¾)      | ½ (0)         |
| Energy prices – direct contribution to CPI inflation (ab) | ¼         | ¼         | ½         | 3¾         | -1½ (-1)     | ½ (0)          | -¼ (-½)       |
| Average weekly earnings (ac)                              | 4¼        | 2¼        | 4¾        | 6          | 6 (5)        | 3½ (3½)        | 2½ (2½)       |
| Unit labour costs (ad)                                    | 3         | 1¼        | 5¼        | 5¾         | 4¾ (4¼)      | 3 (3)          | 1¾ (1½)       |

|                |    |    |    |    |         |        |         |
|----------------|----|----|----|----|---------|--------|---------|
| Private sector | 1¼ | 1½ | 3¼ | 8¼ | 7½ (6¾) | 4 (3½) | 2½ (2¼) |
| regular pay    |    |    |    |    |         |        |         |
| based unit     |    |    |    |    |         |        |         |
| wage costs     |    |    |    |    |         |        |         |
| (ae)           |    |    |    |    |         |        |         |

Sources: Bank of England, Bloomberg Finance L.P., Department for Energy Security and Net Zero, Eurostat, IMF World Economic Outlook (WEO), National Bureau of Statistics of China, ONS, US Bureau of Economic Analysis and Bank calculations.

- (a) The profiles in this table should be viewed as broadly consistent with the MPC's projections for GDP growth, CPI inflation and unemployment (as presented in the fan charts).
- (b) Figures show annual average growth rates unless otherwise stated. Figures in parentheses show the corresponding projections in the May 2023 Monetary Policy Report. Calculations for back data based on ONS data are shown using ONS series identifiers.
- (c) Chained-volume measure. Constructed using real GDP growth rates of 188 countries weighted according to their shares in UK exports.
- (d) Chained-volume measure. Constructed using real GDP growth rates of 189 countries weighted according to their shares in world GDP using the IMF's purchasing power parity (PPP) weights.
- (e) Chained-volume measure. Forecast was finalised before the release of the preliminary flash estimate of euro-area GDP for Q2, so that has not been incorporated.
- (f) Chained-volume measure. Forecast was finalised before the release of the advance estimate of US GDP for Q2, so that has not been incorporated.
- (g) Chained-volume measure. Constructed using real GDP growth rates of 155 emerging market economy countries, as defined by the IMF WEO, weighted according to their relative shares in world GDP using the IMF's PPP weights.
- (h) Chained-volume measure.
- (i) Excludes the backcast for GDP.
- (j) Chained-volume measure. Includes non-profit institutions serving households. Based on ABRJ+HAYO.
- (k) Chained-volume measure. Based on GAN8.
- (l) Chained-volume measure. Whole-economy measure. Includes new dwellings, improvements and spending on services associated with the sale and purchase of property. Based on DFEG+L635+L637.
- (m) Chained-volume measure. The historical data exclude the impact of missing trader intra-community (MTIC) fraud. Since 1998 based on IKBK-OFNN/(BOKH/BQKO). Prior to 1998 based on IKBK.
- (n) Chained-volume measure. The historical data exclude the impact of MTIC fraud. Since 1998 based on IKBL-OFNN/(BOKH/BQKO). Prior to 1998 based on IKBL.
- (o) Chained-volume measure. Exports less imports.
- (p) Wages and salaries plus mixed income and general government benefits less income taxes and employees' National Insurance contributions, deflated by the consumer expenditure deflator. Based on [ROYJ+ROYH-(RPHS+AIIV-CUCT)+GZVX]/[(ABJQ+HAYE)/(ABJR+HAYO)]. The backdata for this series are available at [Monetary Policy Report – Download chart slides and data – August 2023](#).
- (q) Total available household resources, deflated by the consumer expenditure deflator. Based on [RPQK/((ABJQ+HAYE)/(ABJR+HAYO))].
- (r) Annual average. Percentage of total available household resources. Based on NRJS.
- (s) Level in Q4. Percentage point spread over reference rates. Based on a weighted average of household and corporate loan and deposit spreads over appropriate risk-free rates. Indexed to equal zero in 2007 Q3.
- (t) Annual average. Per cent of potential GDP. A negative figure implies output is below potential and a positive figure that it is above.
- (u) GDP per hour worked. Hours worked based on YBUS.
- (v) Four-quarter growth in LFS employment in Q4. Based on MGRZ.
- (w) Level in Q4. Average weekly hours worked, in main job and second job. Based on YBUS/MGRZ.
- (x) LFS unemployment rate in Q4. Based on MGSX.
- (y) Level in Q4. Percentage of the 16+ population. Based on MGWG.

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- (z) Four-quarter inflation rate in Q4.
  - (aa) Four-quarter inflation rate in Q4 excluding fuel and the impact of MTIC fraud.
  - (ab) Contribution of fuels and lubricants and gas and electricity prices to four-quarter CPI inflation in Q4.
  - (ac) Four-quarter growth in whole-economy total pay in Q4. Growth rate since 2001 based on KAB9. Prior to 2001, growth rates are based on historical estimates of AWE, with ONS series identifier MD9M.
  - (ad) Four-quarter growth in unit labour costs in Q4. Whole-economy total labour costs divided by GDP at constant prices. Total labour costs comprise compensation of employees and the labour share multiplied by mixed income.
  - (ae) Four-quarter growth in private sector regular pay based unit wage costs in Q4. Private sector wage costs divided by private sector output at constant prices. Private sector wage costs are average weekly earnings (excluding bonuses) multiplied by private sector employment.

## Box A: Reviewing the process of quantitative tightening

Since the global financial crisis, quantitative easing (QE) has been an important instrument of monetary policy for central banks, including the Bank of England. The stock of assets held for monetary policy purposes in the Bank's Asset Purchase Facility (APF) peaked at £895 billion towards the end of 2021, at which time the level of Bank Rate was 0.1%. Reducing that accumulated stock of purchased assets – or quantitative tightening (QT) – was appropriate once Bank Rate moved away from its effective lower bound. That reduction began in March 2022, and the size of the APF currently stands at £786 billion.

As set out in the [minutes](#) of the August 2022 meeting, the MPC committed to review the reduction in the APF annually, and as part of that to set out an amount for the reduction in the stock of purchased UK government bonds (gilts) over the subsequent 12-month period. This box forms part of this year's review, including what the MPC has learned about the impact of QT, and the factors that influence the appropriate pace of stock reduction.

The Committee will vote on the target for gilt stock reduction over the 12-month period from October 2023 to September 2024 at its September 2023 meeting.

### **| The process of unwinding the APF is going smoothly...**

In February 2022, the Committee voted to cease gilt reinvestments and initiate sales of sterling non-financial investment-grade corporate bonds. In September 2022, the Committee voted to reduce the stock of gilts held in the APF by £80 billion over the next 12 months, to a total of £758 billion.

This process is going smoothly. Sales of the corporate bond portfolio are now complete, with a small number of very short maturity bonds remaining that will mature fully by April 2024. At the conclusion of the current 12-month programme of gilt stock reduction in September the APF will stand at £759 billion. The impact of QT on financial markets, while difficult to measure precisely, is judged to have been small, and there is no evidence of a negative impact of gilt sales on market functioning across a range of financial market measures (see [Ramsden \(2023\)](#)). That is in line with the MPC's expectations, but the Committee will continue to learn as the process progresses.

Reducing the size of the APF has the important benefit of reducing the risk of a ratchet upwards in the size of the central bank balance sheet over time if successive policy cycles encounter the effective lower bound on interest rates (for further discussion, see [Bailey et al \(2020\)](#)). That in turn should increase the headroom and flexibility for the central bank to be able to use its balance sheet in the future should that be needed.

The strategy for this process, however, must take into account various economic and market considerations.

**| ...having been guided by a set of key principles.**

The key principles for unwind were set out in the August 2021 Report, building on earlier communications that began in 2014. The parameters of the unwind strategy agreed last year were designed with these principles in mind.

First, the MPC intends to use Bank Rate as its active policy tool when adjusting the stance of monetary policy. The parameters of the unwind strategy are amended at a lower frequency than decisions on Bank Rate and are not calibrated with a view to fine-tuning the monetary policy stance.

Second, sales are being conducted so as not to disrupt the functioning of financial markets. Market conditions must be judged appropriate at the time, for example sales are not taking place in periods of extreme volatility.

Third, to help achieve that, sales are being conducted in a relatively gradual and predictable manner over a period of time.

**| Reflecting these key principles, the tightening impact of unwind has been, and is expected to be, smaller than the loosening associated with asset purchases.**

When conducted in a manner consistent with the key principles, the impact of QT is smaller than that of QE. That predominantly reflects the state contingency of the transmission channels, set out in the [2022 Q1 Quarterly Bulletin](#). In the context of the key principles, several channels are smaller or absent during the unwind process.

First, the process of unwinding the APF is being undertaken only in appropriate market conditions, and in a gradual and predictable manner that does not disrupt the functioning of financial markets. That is illustrated by the experience last

autumn, where the Bank delayed the start of gilt sales given market conditions. Asset purchases on the other hand, were at times deliberately made during periods of market stress, such that they helped to improve liquidity and market functioning.

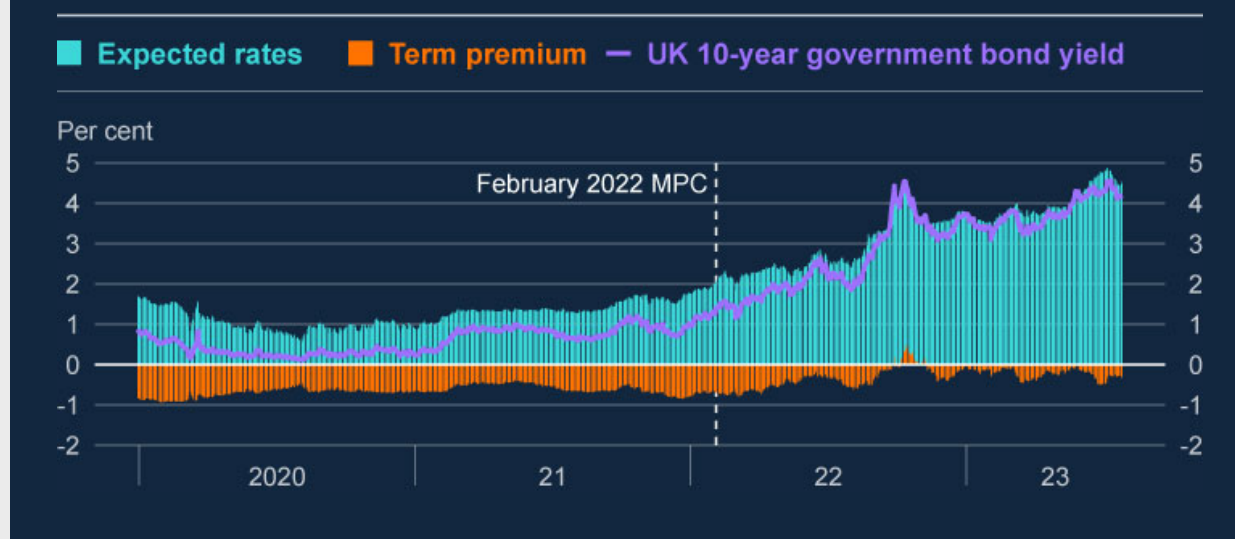
Second, as Bank Rate is the active tool of monetary policy, decisions on the process for unwind are not signalling a need for a higher path for Bank Rate. That is in contrast to QE, when increasing the target stock of purchased assets may have depressed the expected path of Bank Rate.

**That finding is supported by a range of empirical evidence which suggests unwind is having some tightening effect on yields, but that this is small.**

There has now been over a year of evidence of the impact of QT, including nine months of sales. The impact remains difficult to measure precisely, and the MPC will continue to learn as the process progresses. Nonetheless, the empirical evidence so far supports expectations that the impact of unwind on gilt yields would be small.

First, models of UK term premia can decompose developments in gilt yields into those driven by changes in the term premium, through which unwind is expected to operate, and those reflecting shifts in the expected path of rates. The term premium represents the additional compensation investors demand to hold a longer-term bond relative to a series of shorter-term bonds, and is influenced by a range of factors, including uncertainty around the outlook for the economy and interest rates, as well as gilt supply and demand. These models point to an overall increase in the term premium of around 40 basis points on the 10-year gilt yield since the Committee voted to begin QT, accounting for only a very small proportion of the overall rise in gilt yields (Chart A). QT may be one factor contributing to that increase, but other factors have likely been more important.

**Chart A: Decomposition of UK 10-year government bond yield (a)**



Sources: Bloomberg Finance L.P., Tradeweb and Bank calculations.

(a) The chart uses estimates from a range of internal models of UK term premia to split the 10-year gilt yield into expected rates and term premia contributions. Expected rates reflect investors' expectations of the average short-term monetary policy rate over the next 10 years, and term premium is defined as the additional compensation investors demand to hold a longer-term bond relative to a series of shorter-term bonds.

Indeed, analytical approaches that attempt to isolate the impact of QT specifically suggest that this is likely to account for only part of the 40 basis point increase, in the region of 10–15 basis points. Market intelligence, including from the Bank's Market Participants Survey in June 2022, is consistent with an impact of that magnitude.

Event study estimates around QT auctions also point to a limited additional impact from sales specifically. There has been no material difference in daily movements of a range of financial market measures on auction days relative to non-auction days. There is also evidence that unwind has had a limited impact on market functioning; indeed there are some signs that sales may have had a positive effect by alleviating collateral scarcity at short maturities.

**| The impact on activity and inflation is also likely to have been small.**

All else equal, the tightening effect QT has on yields would be expected to lower economic activity and inflation. It is too early to assess this broader impact yet, but based on the UK's experience of QE, a 10 basis point increase in yields would be associated with a negative impact on activity and inflation of less than 0.2% and 0.1 percentage points respectively.

While it is hard to measure precisely the marginal effect of QT, the MPC's economic forecasts will be conditioned on asset prices that incorporate announced and expected QT alongside other factors. The MPC will therefore take this effect into account when setting the desired monetary policy stance using Bank Rate. Any tightening effect from QT will lead to a slightly lower path for Bank Rate, all else equal. Given that the impact of QT is judged to have been small, QT is unlikely to have made a material difference to the appropriate path for Bank Rate over the past year.

**Sales of the corporate bond portfolio have also been completed successfully.**

Alongside the reduction in the stock of purchased gilts, the process of unwinding the portfolio of corporate bonds held in the APF is now largely complete. Similar to gilt unwind, the impact on monetary conditions was expected to be small when conducted at a time when markets were functioning relatively normally. This process has been successful: sales were completed in June, with a small number of very short maturity bonds remaining in the portfolio and maturing fully by 5 April 2024.

**The appropriate pace of gilt stock reduction will continue to be guided by the MPC's key principles.**

While there are benefits to reducing the size of the APF, the pace of reduction must be judged appropriate in the context of the key principles. That involves both economic and market considerations.

First, any economic impact must leave sufficient headroom in Bank Rate to deliver the MPC's desired monetary policy stance. Given a gradual pace of unwind is associated with a small expected economic impact, any required adjustments in Bank Rate are likely to be very small and this should therefore not be a material factor in practice.

Second, the pace of sales should not disrupt the functioning of financial markets. An important component of the annual review process is an updated staff assessment of market capacity and conditions. Given a small economic impact, this becomes a key consideration in determining the pace of stock reduction.

Third, sales must be conducted in a relatively gradual and predictable manner over a period of time. The focus of the MPC is on total gilt stock reduction, comprising both maturing gilts and sales, such that natural variation in maturities may also lead



to variation in the pace of sales over time (Chart B). Notwithstanding that, the Committee places some weight on continuity in sales.

The appropriate stock reduction target over the next year will weigh these different factors, and will take into account the experience of the first year of unwind.

The Committee will vote on the target for gilt stock reduction over the 12-month period from October 2023 to September 2024 at its September meeting. Bank Rate remains the MPC’s active tool of monetary policy and will be set to meet the 2% inflation target.

**Chart B: Cash flows associated with APF maturities and sales this year, and maturities in future years (a) (b)**



(a) Each year shows maturities in the period between October and September the following year (ie a yearly QE review cycle).

(b) The amount of APF stock reduction set by the MPC is expressed in terms of the initial proceeds paid to purchase the APF holdings.

## Box B: Monetary policy since the May Report

At its meeting ending on 21 June 2023, the MPC voted by a majority of 7–2 to increase Bank Rate by 0.5 percentage points, to 5%. Two members preferred to maintain Bank Rate at 4.5%.

Business surveys continued to suggest underlying quarterly GDP growth of around  $\frac{1}{4}\%$  during the middle of this year. LFS employment had increased by 0.8% in the three months to April, higher than expected at the time of the May Report. The counterpart to this strong employment growth had been a further fall in the inactivity rate. The unemployment rate had been flat at 3.8%, in line with the May Report. The vacancies to unemployment ratio had fallen further but remained significantly elevated.

Annual growth in private sector regular average weekly earnings (AWE) had increased to 7.6% in the three months to April, 0.5 percentage points above the expectation at the time of the May Report. Three-month on three-month growth in this measure of pay had also picked up. Indications of future pay growth from the KPMG/REC survey and the Bank's Agents suggested that AWE growth would ease over the rest of the year, however.

Twelve-month CPI inflation fell from 10.1% in March to 8.7% in April and had remained at that rate in May. This was 0.3 percentage points higher than expected in the May Report. Services CPI inflation had risen to 7.4% in May, 0.5 percentage points stronger than expected at the time of the May Report, while core goods price inflation had also been much stronger than projected.

CPI inflation was expected to fall significantly further during the course of the year, in the main reflecting developments in energy prices. Services CPI inflation was projected to remain broadly unchanged in the near term. Core goods CPI inflation was expected to decline later this year, supported by developments in cost and price indicators earlier in the supply chain. In particular, annual producer output price inflation had fallen very sharply in recent months. Food price inflation was projected to fall further in coming months.

The MPC recognised that the second-round effects in domestic price and wage developments generated by external cost shocks were likely to take longer to unwind than they did to emerge. There had been significant upside news in recent

data that indicated more persistence in the inflation process, against the background of a tight labour market and continued resilience in demand.

The MPC would continue to monitor closely indications of persistent inflationary pressures in the economy as a whole, including the tightness of labour market conditions and the behaviour of wage growth and services price inflation. If there were to be evidence of more persistent pressures, then further tightening in monetary policy would be required.

## 2: Current economic conditions

Global consumer price inflation has been slowing, but remains above central banks' targets in many countries. That slowing has mainly been driven by developments in energy prices, although food and goods price inflation have also eased a little. In contrast, services inflation has remained strong across advanced economies, which may in part reflect tight labour markets. Market-implied paths for policy rates have risen further since the May Report, particularly in the UK. Interest rates facing households and firms have risen; the effects of this will transmit to economic activity and inflation over time.

Underlying UK GDP growth, which abstracts from the impact of strikes and the additional bank holiday in May, is estimated to have averaged around ¼% per quarter in the first half of 2023, broadly in line with expectations in the May Report. And, on average, indicators point to underlying growth continuing at a similar pace in the second half of 2023.

Employment and participation have risen since the May Report. The labour market remains tight, but there are some indications that it is loosening. Annual private sector regular earnings growth has risen materially faster than projected in the May Report to 7.7%. Wage growth is still expected to slow in the second half of the year, but risks remain to the upside.

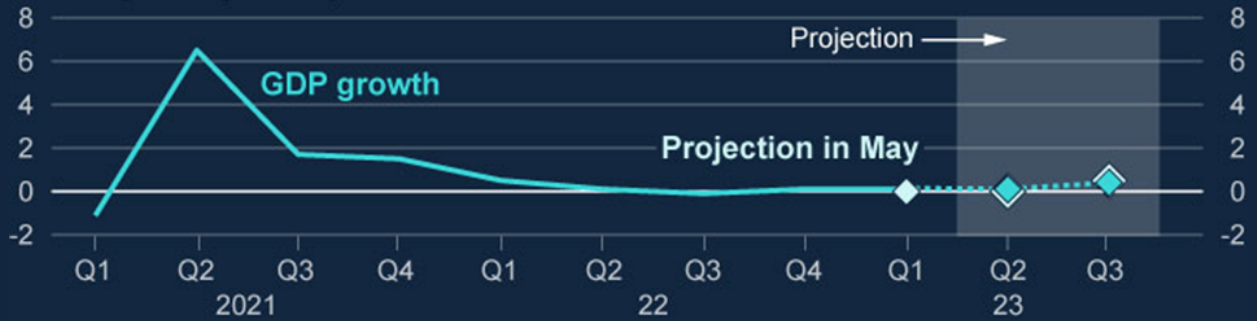
Since the May Report, CPI inflation has fallen, dropping from 10.1% in March to 7.9% in June, in line with the projection in May. It remains well above the MPC's 2% target, however. Inflation is expected to fall further – to 6.9% in 2023 Q3 and 4.9% in Q4 – with three-quarters of that decline owing to a falling contribution from household gas and electricity bills. Easing manufacturing producer price inflation is likely to contribute to somewhat lower consumer goods price inflation, while food price inflation is also expected to fall back. But services price inflation is projected to remain elevated, averaging 7% through the second half of 2023.

**Chart 2.1: GDP growth is expected to remain positive but low, the unemployment rate is expected to rise slightly in 2023 Q3 and inflation is expected to have fallen in July**

Near-term projections (a)

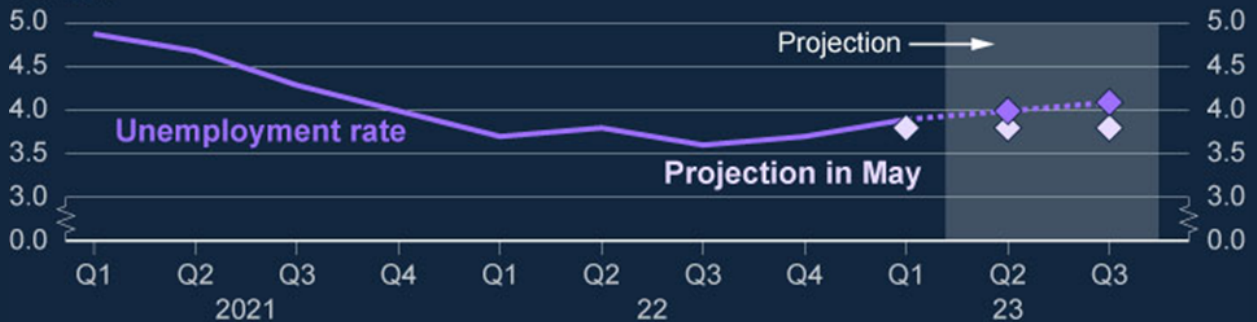
**2023 Q2: 0.1%**    **2023 Q3: 0.4%**

Percentage change on a quarter earlier



**2023 Q2: 4.0%**    **2023 Q3: 4.1%**

Per cent



**2023 Q2: 8.4%**    **2023 Q3: 6.9%**

Per cent



Sources: ONS and Bank calculations.

(a) The lighter diamonds show Bank staff's projections at the time of the May 2023 Monetary Policy Report. The darker diamonds show Bank staff's current projections. Projections for GDP growth and the unemployment rate are quarterly and show 2023 Q2 and 2023 Q3 (May projections show Q1 to Q3). Projections for CPI inflation are monthly and show July to September 2023 (May projections show April to September 2023). GDP growth and unemployment rate 2023 Q2 projections are based on official data to May, the CPI inflation figure is an outturn.

## 2.1: Global economy and financial markets

### **Global GDP is expected to remain subdued in the near term, in line with the May Report.**

UK-weighted world GDP is expected to have grown by 0.5% in 2023 Q2, similar to that in Q1. That expectation is broadly in line with the May Report. Four-quarter global GDP growth in Q2 is expected to be 1.8%, lower than the average rate over 2010–19 of 2.4%. The latest indicators, such as PMI surveys of business activity, suggest that global growth is likely to remain subdued in Q3.

### **Headline inflation in the euro area and United States has continued to fall, primarily reflecting lower energy prices, but inflation remains above central banks' targets...**

In the euro area, HICP inflation fell to 5.3% in the flash estimate for July, and in the US, headline PCE inflation, the Federal Reserve's preferred measure of inflation, eased by 0.8 percentage points to 3.0% in June (Chart 2.2). In both regions, the slowing primarily reflects energy prices falling (orange bars in Chart 2.2). European wholesale gas prices are much lower than a year ago, though they are only a little lower than in May. The Brent crude oil price has also fallen over the past year and, at US\$80 per barrel, is 5% lower than in the lead up to the May Report. In the UK, although the contribution of energy to CPI inflation has fallen, it remains positive. It is expected to fall further from July as lower wholesale gas prices feed through to the prices facing households (Section 2.6).

To a lesser extent, the contributions to inflation from food and other goods prices in the US and euro area have also declined (purple and aqua bars in Chart 2.2). Goods inflation has been on a downward trend for over a year in the US; it has slowed more recently in the euro area.

## Chart 2.2: Headline inflation has been falling but remains above central banks' targets in the UK, US and euro area

Contributions to annual consumer price inflation (a)



Sources: Eurostat, ONS, Refinitiv Eikon from LSEG, US Bureau of Economic Analysis, US Bureau of Labor Statistics and Bank calculations.

(a) Data are not seasonally adjusted. Energy includes fuel and household energy bills. Other goods is the difference between overall inflation and the other contributions identified on the chart, and therefore includes alcohol and tobacco. The latest data are May 2023 outturns for US PCE inflation and the associated contributions, and June 2023 outturns for all other series.

### **...in part reflecting the strength of services inflation.**

While headline consumer price inflation has been falling, services inflation has remained strong across the UK, the US and the euro area. The contribution of services inflation to the headline rate has been consistently larger in the UK and US than in the euro area (gold bars in Chart 2.2). This may in part reflect tighter labour markets, for example the vacancy to unemployment ratios in the UK and US are further above their pre-pandemic averages than in the euro area. That has contributed to strong growth in wages, which tend to make up a large proportion of services firms' costs.

### **Alongside weak Chinese domestic inflation, global inflationary pressures are expected to continue to ease.**

Chinese domestic inflation has been weak in 2023, with producer price inflation falling to -5.4% in June. This weakness probably reflects lower commodity prices and some softness in demand, with China's economic recovery having lost momentum in 2023 Q2

following the end of its zero-Covid policy. Annual growth in Chinese export prices has slowed sharply from a peak of 13% last year to -6.7% in the latest data. Taken together with slowing export prices in other regions, the level of world export prices is expected to continue to fall over the coming year (Section 1).

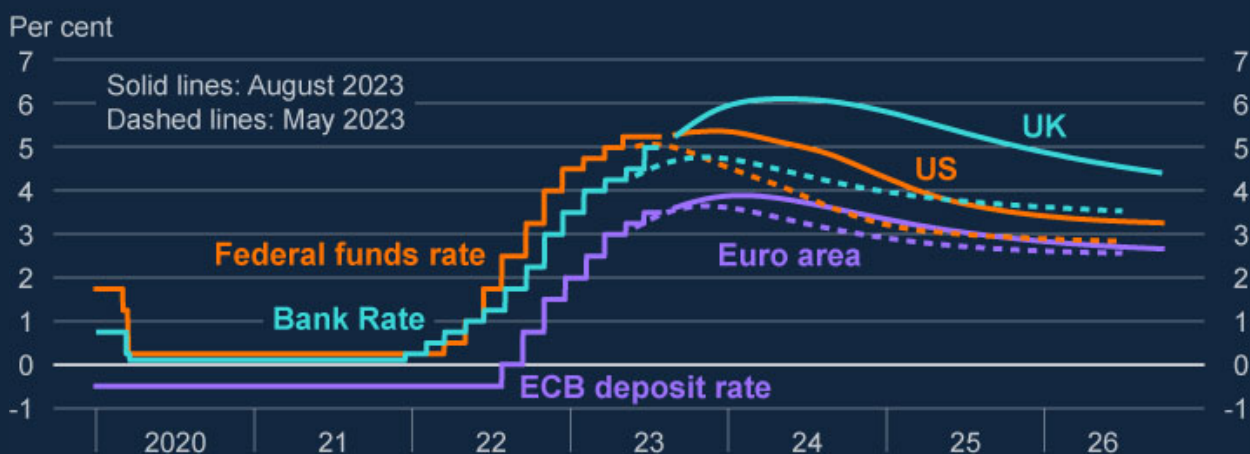
### Many central banks have continued to tighten policy, and market-implied paths for policy rates are higher than in May.

Central banks have continued to tighten policy. In the US, the FOMC raised the target range for the federal funds rate by 25 basis points to 5.25%–5.5% at its July meeting. At its meeting ending on 27 July 2023, the ECB Governing Council raised its key policy rates by 25 basis points and the deposit facility rate now stands at 3.75%. Both central banks noted that they would continue to take a data-dependent approach to setting monetary policy. The MPC voted to increase Bank Rate by 50 basis points to 5% in June (Box B).

Market-implied expectations for policy rates in the US and euro area have risen since May (Chart 2.3). On average, the US and euro-area paths are around 60 and 25 basis points higher, respectively, than in the lead up to the May Report.

### Chart 2.3: The market-implied path of UK policy rates has moved materially higher since the May Report

International forward interest rates (a)



Sources: Bloomberg Finance L.P. and Bank calculations.

(a) All data as of 25 July 2023. The May curves are estimated based on the 15 UK working days to 28 April 2023. The August curves are estimated using the 15 working days to 25 July 2023. Federal funds rate is the upper bound of the announced target range. ECB deposit rate is based on the date on which changes in policy rates are effective from.



### **Since May, the increase in UK policy rate expectations has been larger than in the US and euro area...**

The rise in market-implied policy rate expectations in the UK has been much larger than in the US and euro area, with the expected path for Bank Rate on average around 130 basis points higher than in May. While some of the repricing reflects global developments, market intelligence suggests that the increase in short-term interest rates has been driven largely by UK-specific developments. That is likely to relate to the strength in the indicators of inflation persistence that the MPC have been focusing on, for example the upside news in UK services inflation and wage growth since May (Sections 2.5 and 2.6). Short-term interest rates fell back somewhat, however, following the June CPI inflation release, reflecting the downside surprise in headline and core inflation. This has left the latest path for policy rate expectations, on average, around 25 basis points below the 15-day average underlying the MPC's projections.

Longer-term interest rates have also risen, though the increases have been smaller than in short-term rates. Since the May Report, yields on 10-year UK government bonds are 70 basis points higher, compared to around 40 and 10 basis points in the US and Germany respectively. The movements at the longer end of the UK yield curve have been driven by expected policy rates ([Ramsden \(2023\)](#)).

### **...which has driven the sterling ERI higher.**

Partly reflecting the rising differential between expected policy rates in the UK compared to the US and euro area, the sterling effective exchange rate has appreciated by 4% since the May Report, and around 6% since the start of the year (Chart 2.4). Sterling has appreciated by 3% against the euro and by 4% against the US dollar since May. All else equal, a stronger exchange rate dampens activity and pushes down inflation (Section 2.3).

### Chart 2.4: The sterling ERI has continued to appreciate, by 4% since May

Sterling ERI and selected bilateral exchange rates (a)



(a) Figures in parentheses show currency trade weights in the overall sterling ERI.

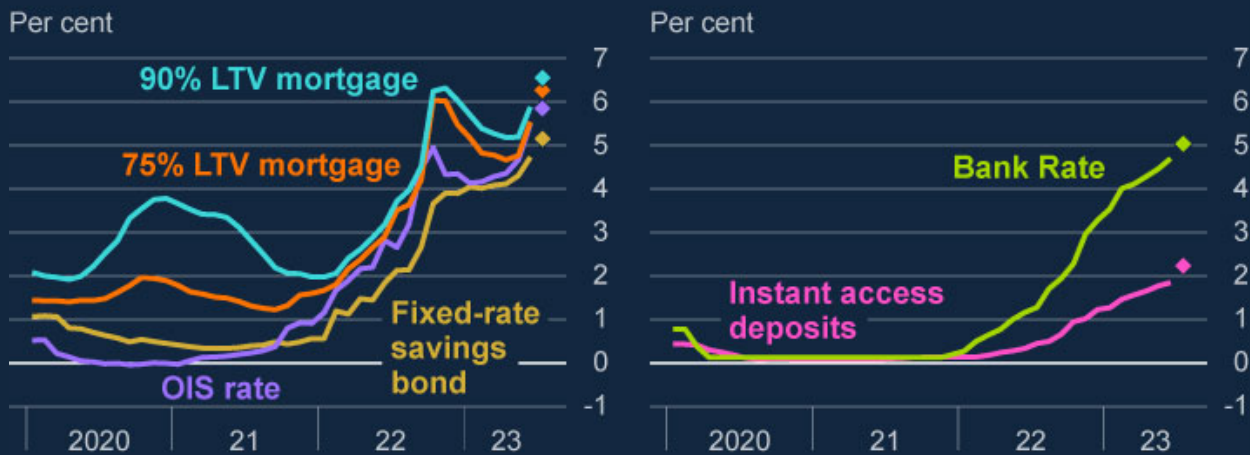
## 2.2: Interest rates facing households and firms

**Reflecting the rise in risk-free interest rates, new mortgage rates have increased sharply.**

Having fallen around the end of last year, interest rates on UK owner-occupied new mortgages have risen materially since the May Report. For example, the average quoted rate on a two-year fixed-rate 75% loan to value (LTV) mortgage rose by around 75 basis points to 5.5% in June, and by a further 75 basis points in July (left panel of Chart 2.5). This rise reflects the pass-through of higher risk-free interest rates: the relevant reference rate for this product is the two-year overnight index swap (OIS) rate (purple line in the left panel of Chart 2.5), which has risen by around 150 basis points since May. Mortgage rates appear to have repriced more rapidly than in the past, perhaps reflecting the scale and speed of the increase in reference rates. The relationship between risk-free reference rates and mortgage rates is set out in Box B of the [May 2023 Report](#).

### Chart 2.5: Interest rates on fixed-rate mortgages and fixed-rate bonds have risen in line with reference rates, but instant access rates have risen by less

Average quoted rates on two-year fixed-rate mortgages, fixed-rate savings bond, instant access accounts and the respective reference rates (a)



Sources: Bank of England, Bloomberg Finance L.P. and Bank calculations.

(a) The Bank's quoted rates series are weighted monthly average rates advertised by all UK banks and building societies with products meeting the specific criteria. In February 2019 the method used to calculate these data was changed. For more information, see [Introduction of new Quoted Rates data – Bankstats article](#). Diamonds for mortgage and saving products represent averages of daily quoted rates using data to 25 July and were provisional. The final data were published on 31 July. OIS rate and Bank Rate show monthly averages and the respective diamonds show the average of daily rates to 25 July.

Quoted interest rates on buy-to-let (BTL) mortgages have also increased – a two-year 75% LTV BTL mortgage has risen by around 150 basis points to 6.2% since the May Report and by around 280 basis points over the past year. These mortgages are typically used by private landlords to finance their investments. It is likely that at least part of the increase in landlords' borrowing costs is being passed on to renters (Section 2.3). The [July 2023 Financial Stability Report](#) sets out recent developments in the BTL market in further detail.

In the latest [Credit Conditions Survey \(CCS\)](#), lenders reported that the availability of secured credit to households had decreased in the three months to end-May 2023, reflecting a worsening economic outlook and tighter wholesale funding conditions. The number of products available to households has fallen recently, although this has been small compared with the fall observed last autumn. The recent decline partly reflects lenders repricing their products in response to relatively fast moves in reference rates.

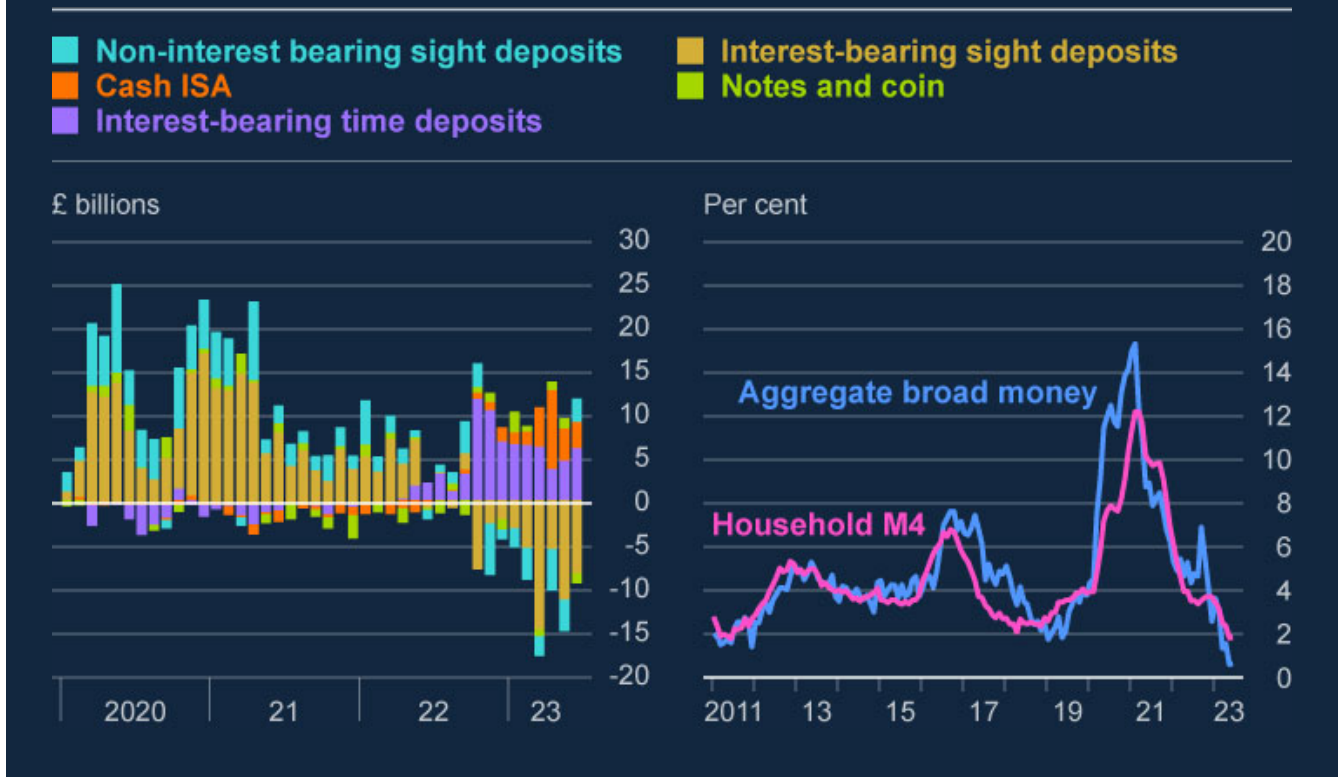
**Instant access deposit rates have risen by less than those on fixed-rate bonds, with deposit volumes continuing to shift towards the latter products.**

Interest rates on fixed-rate bonds, a type of time deposit, have also increased in line with reference rates. However, pass-through of increases in Bank Rate to instant access savings accounts, which make up the majority of household deposits, has been limited (right panel of Chart 2.5). The average quoted rate on an instant access account has increased by around 180 basis points over the past year, compared to an increase in Bank Rate of 375 basis points. This pattern of less pass-through to instant access deposit rates compared to time deposit rates is also apparent in the euro area and the US.

Reflecting the better returns on offer, deposit volumes have continued to shift from instant access accounts to time deposits since the May Report (left panel of Chart 2.6), although in aggregate the outflows have been small compared with the overall stock of sight deposits. Outflows from sight deposits have not been matched by inflows into time deposits, so household money growth has slowed (right panel of Chart 2.6). That has contributed to slowing aggregate broad money growth; the annual rate was 0.6% in the latest data, well below the 2010–19 average of 3.9%.

### Chart 2.6: Deposit volumes have been shifting from instant access accounts to time deposits. Money growth has slowed sharply

Monthly change in household deposits and annual growth rate of household and aggregate broad money (a)



(a) Right panel shows monetary financial institutions' sterling M4 liabilities to the household sector and aggregate M4 excluding the deposits of intermediate other financial corporations. Data are to June 2023.

### The cost of borrowing for UK firms has increased since the May Report, reflecting the increase in reference rates.

Around three quarters of the stock of corporate bank debt has a variable interest rate. This means that changes in reference rates are reflected in the rates paid by companies relatively quickly. The average effective rate on new bank lending to corporates was around 45 basis points higher in June than in April, and around 60 basis points higher for SMEs. These data may not fully reflect the increase in Bank Rate in June, and so may increase a little further in the near term.

In the latest CCS, lenders expected the overall availability of credit to the corporate sector to remain unchanged in Q3. Contacts of the Bank's Agents reported that bank credit availability remained tighter than normal as there continued to be greater lender caution when assessing new loans (Box C).

## 2.3: The impact of interest rates on activity

Monetary policy affects the economy through a wide range of channels (for example as set out by [Mann \(2023\)](#)). Interest rate rises have direct effects, for example increasing debt repayments for borrowers and increasing the incomes of net savers, potentially affecting households' and firms' spending choices. There are also important impacts on the broader economy. For example, asset prices tend to fall as interest rates rise. This can reduce the capacity of households and firms to take out secured loans as the value of potential collateral falls. Another channel is that rising interest rates will, all else equal, be accompanied with an appreciation in the exchange rate which can itself have a range of effects on prices, consumption and trade. There are also behavioural effects, such as shifting the timing of consumption and firms' investment decisions. The following section provides evidence on the impact of rises in Bank Rate since the end of 2021 through some of these channels.

**Interest rate rises to combat high inflation will weigh directly on consumer spending through the cash-flow impact on mortgagors, although this is only one part of the overall impact of monetary policy on economic activity.**

One way in which higher interest rates can weigh on consumption is via cash-flow effects on mortgagor households. In May, Bank staff estimated that the rise in mortgage payments had reduced consumer spending by around 0.3%, with this effect expected to increase to a little over 0.5% by the end of the 2025, as many households on fixed-rate mortgages refinanced (see Chart B in Box B in the [May 2023 Report](#)). The rise in mortgage rates since then (Section 2.2) means the total effect on consumption will be higher now at closer to 0.8%. Although higher mortgage rates have very significant impacts on some households' finances, this channel of monetary policy can be a smaller part of the overall transmission of monetary policy to the economy, compared to other channels. Indeed, monetary policy still affects activity and inflation significantly in countries, such as the US, where the scope for a cash-flow effect on mortgagor households is limited by the housing market being dominated by mortgages with fixed rates that often last for as long as 30 years.

There are a number of uncertainties surrounding these estimates of how much higher mortgage rates will weigh on consumption. One factor is the extent to which those on fixed-rate mortgages will begin to adjust their consumption before they start paying higher rates at the end of their fixed-rate period. Only around half of mortgagor households are estimated to have faced an increase in mortgage repayments since rates started to rise in late 2021. There are around four million more households who have not yet faced increased mortgage costs but will do so by the end of 2026. Most households are likely to

know that their mortgage costs will rise and so may anticipate that by adjusting consumption in advance. In the Bank's March NMG survey, the perceived impact of higher mortgage rates on their finances over the past 12 months for mortgagors with a fixed rate due to expire before the end of the year were similar to those mortgagors who have already experienced a rate rise.

A further uncertainty is the extent to which households may choose to lengthen mortgage terms in order to reduce monthly mortgage payments, and hence limit the hit to their incomes. But Bank staff estimate that in 2023 Q1 only around 15% of those households remortgaging chose to lengthen their term when refinancing ([July 2023 Financial Stability Report](#)). Moreover, the aggregate effect on mortgage repayments has been broadly offset by some households choosing to pay off their mortgage faster.

Rising interest rates increase costs for those BTL landlords who have a mortgage (Section 2.2), which could also reduce aggregate consumption. This could be via lower net income for landlords or higher housing costs for renters, if landlords are able to pass on their costs through rent increases. Private rents are rising faster than usual which is likely to reduce other forms of consumption for tenant households. The CPI measure of rents rose by 5.5% over the year to 2023 Q2, the fastest pace since 1996. The increase in the price of new lets alone, rather than the entire population of rental properties, has been even faster: the Rightmove asking rent for UK properties outside of London increased by 9.3% in the year to 2023 Q2, and by 13.7% in London, outstripping average wage growth (Section 2.5). The Bank's Agents report that more BTL landlords have sold rental properties, which appears to be reducing their supply. On average, renting households are likely to have more precarious finances than those who are BTL owners; as [Albuquerque and Green \(2022\)](#) show, households who are concerned about the state of their finances change their consumption significantly more when incomes change compared to other households.

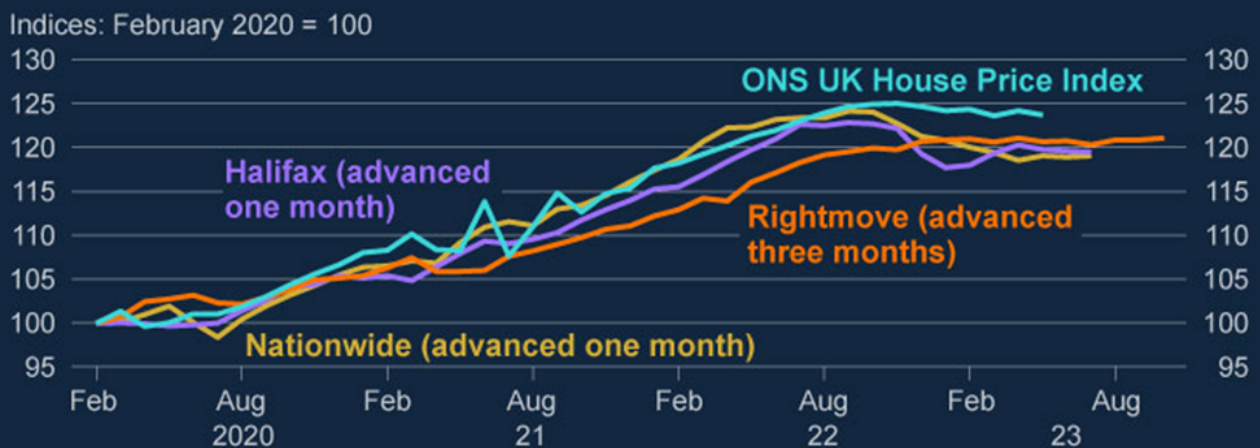
### **A more material impact on the economy comes through broader housing market channels...**

Higher interest rates will also weigh on house prices, which can reduce consumption via a collateral channel. The UK House Price Index rose significantly during the pandemic but in the most recent data fell by 0.4% between April and May, leaving the level of prices 1.1% below its peak in November 2022 (Chart 2.7). Given elevated consumer price inflation, house prices have fallen by much more than that in real terms. More timely indicators of house prices – for example, the Nationwide and Halifax house price indices that capture prices at earlier stages of the house-buying process – have been flat in recent months. Contacts of the Bank's Agents noted that nominal house prices were expected to fall

modestly in the coming months. The latest RICS Residential Market Survey shows that price expectations over the next 12 months declined in June, reflecting the recent sharp rise in interest rate expectations (Section 2.2).

### Chart 2.7: Nominal house prices have been broadly flat and indicators suggest that this will continue in the near term

House price indices (a)



Sources: Nationwide, ONS, Refinitiv Eikon from LSEG, Rightmove.co.uk, S&P Global/Halifax and Bank calculations.

(a) The latest data point for the ONS House Price Index is May 2023. Halifax, Nationwide and Rightmove data are advanced to reflect the respective timing of each data source in the house-buying process.

Since interest rates started to rise, there has been a slowdown in housing market transactions. Fewer transactions will reduce economic activity directly, for example through less demand for services relating to moving house, and indirectly, for example through less demand for new furniture or household appliances. Although mortgage approvals increased in May and June, they remain much lower than the average observed over most of last year, albeit not as weak as in the winter (Chart 2.8).



**Chart 2.8: The number of mortgage approvals has fallen**

Mortgage approvals for house purchases



Another housing market channel through which rate rises affect UK activity is via housing investment. This makes up a little over 5% of total economic activity and includes investment in existing homes. In general, higher interest rates cause demand for housing to fall and lead to a reduction in investment in new dwellings. Investment plans for new homes can be slow to adapt so this effect might happen quite slowly. However, overall housing investment has already been weak, falling by 5.5% since its peak in 2022 Q2 (Chart 2.9). That weakness is projected to continue with housing investment falling a further 10% between 2023 Q1 and 2024 Q4 (Section 1).

### Chart 2.9: Housing investment is falling, which is projected to continue

Real housing investment (a)



Sources: ONS and Bank calculations.

(a) The last data outturn is 2023 Q1. The last data point for the forecast is 2024 Q4.

#### | ...and also through business investment.

As set out in Box B of the [May 2023 Report](#), surveys suggest that higher interest rates are weighing on business investment. In the official data, excluding a one-off rise in business investment in 2023 Q1 which was accounted for by firms bringing forward investment plans for tax purposes ([ONS \(2023\)](#)), business investment has not grown since 2022 Q2. Evidence from the Decision Maker Panel (DMP) from November 2022 to January 2023 shows interest rates are expected to reduce business investment by 8% on average over the following year. That effect was concentrated in roughly a third of businesses. The rise in interest rates since then may mean that these effects have increased.

#### | The impact of interest rates on exchange rates also affects the economy.

Increases in UK interest rates relative to other countries' rates will, all else equal, cause the pound to appreciate. An exchange rate appreciation makes imports cheaper and exports more expensive, relative to the pre-existing prices. Cheaper imports reduce UK inflation directly, because UK households consume imported products, and indirectly, as imported goods and services are used by firms in supply chains. There are also effects on UK activity through falling net trade as UK exports become less competitive globally. Given most advanced economies have been raising rates at the same time as the UK, the pound has only appreciated since the start of 2023 (Chart 2.4). That suggests the impacts of monetary policy through this mechanism have been relatively limited to date.

## 2.4: UK activity

### **Economic growth has been slow but positive since the end of 2022.**

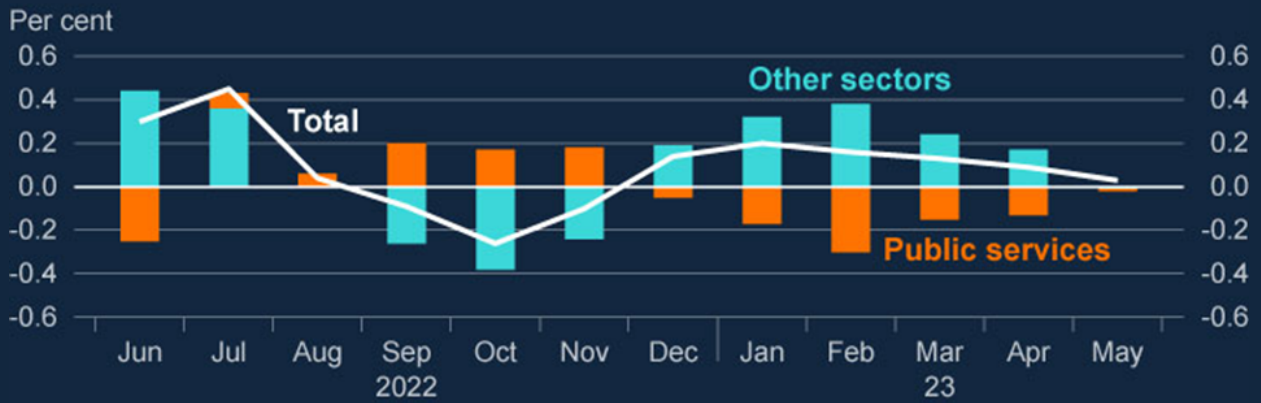
UK GDP growth turned positive at the end of 2022, with three-month on three-month growth averaging around 0.1% since then (Chart 2.10). The latest Bank staff projection is for GDP to have grown by 0.1% in 2023 Q2, having been reduced by strikes, mostly in public services sectors, and the additional bank holiday in May. Underlying growth, which adjusts for these factors, was closer to  $\frac{1}{4}\%$  over that period, in line with the steer from key business surveys (Chart 2.11). The easing in post-pandemic supply constraints, the extension of the Energy Price Guarantee, and the fall in energy prices have supported underlying growth.

GDP growth in 2023 Q3, is projected to rise to 0.4% (Chart 2.1), largely reflecting a bounce back from the additional bank holiday in May.

On average, indicators suggest underlying growth will continue at around  $\frac{1}{4}\%$  in Q3. The Lloyds Business Barometer reports business confidence is above its long-term average level suggesting underlying growth could pick up. In contrast, the most recent PMI surveys suggest growth has weakened (Chart 2.11). Measures of consumer confidence have improved since the start of the year, which may reflect the ongoing strength of the labour market (Section 2.5), as well as the easing in CPI inflation, both of which boost real incomes. But the GfK survey of consumer confidence fell in July and the headline measure remains historically low.

**Chart 2.10: GDP growth has been slow but positive since the end of 2022 despite falling public sector output**

Contribution to three-month on three-month GDP growth (a)

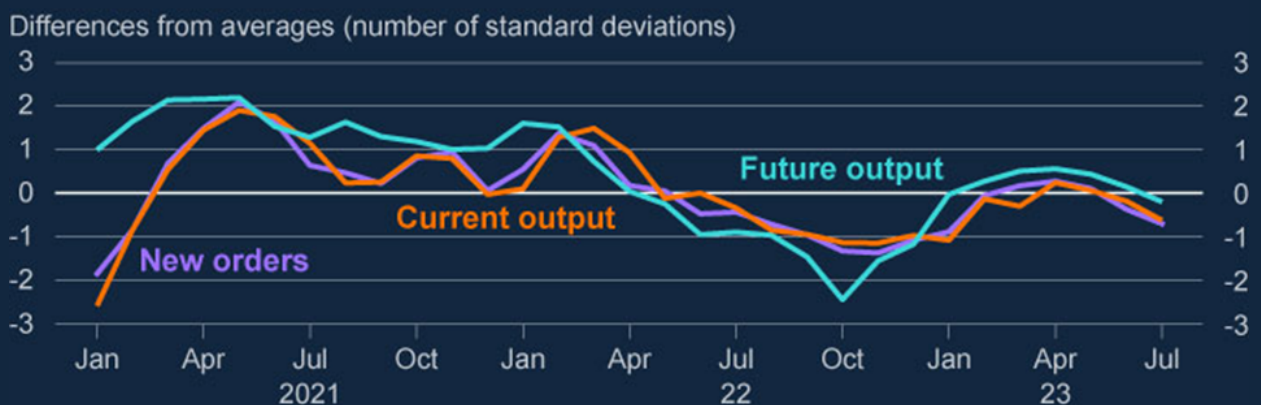


Sources: ONS and Bank calculations.

(a) Public services includes: public administration and defence; education; and human health and social work activities. Data do not sum to the total due to rounding.

**Chart 2.11: Survey measures of economic activity suggest underlying growth is likely to remain slow but positive in the near term**

Survey indicators of UK output growth (a)



Sources: S&P Global/CIPS and Bank calculations.

(a) Measures of current monthly UK composite (services and manufacturing) output, new orders and future output. The current output and new orders series are mean and variance adjusted between 1998 and 2023; the future output series is adjusted between July 2012 and 2023. The latest data points are flash estimates for July 2023.

## 2.5: The labour market and wage growth

### Employment and labour participation have increased.

In the three months to May, the employment rate for those aged 16–64 was 76%, the highest rate since early 2020. The number of people employed grew by 0.3% in the three months to May (Chart 2.12), in line with the projection at the time of the [May 2023 Report](#). These data can be volatile over short periods, and there is the possibility of some additional variation in the most recent data because response rates to the Labour Force Survey have dropped over time ([ONS \(2023\)](#)). Timelier and less volatile measures of employment growth suggest that employment is growing at around the same rate. For example, the purchasing managers' index (PMI) employment index points to employment growth of around 0.3%.

**Chart 2.12: Indicators of employment point to growth of around ¼% on average in the near term**

Indicators of three-month on three-month employment growth (a)

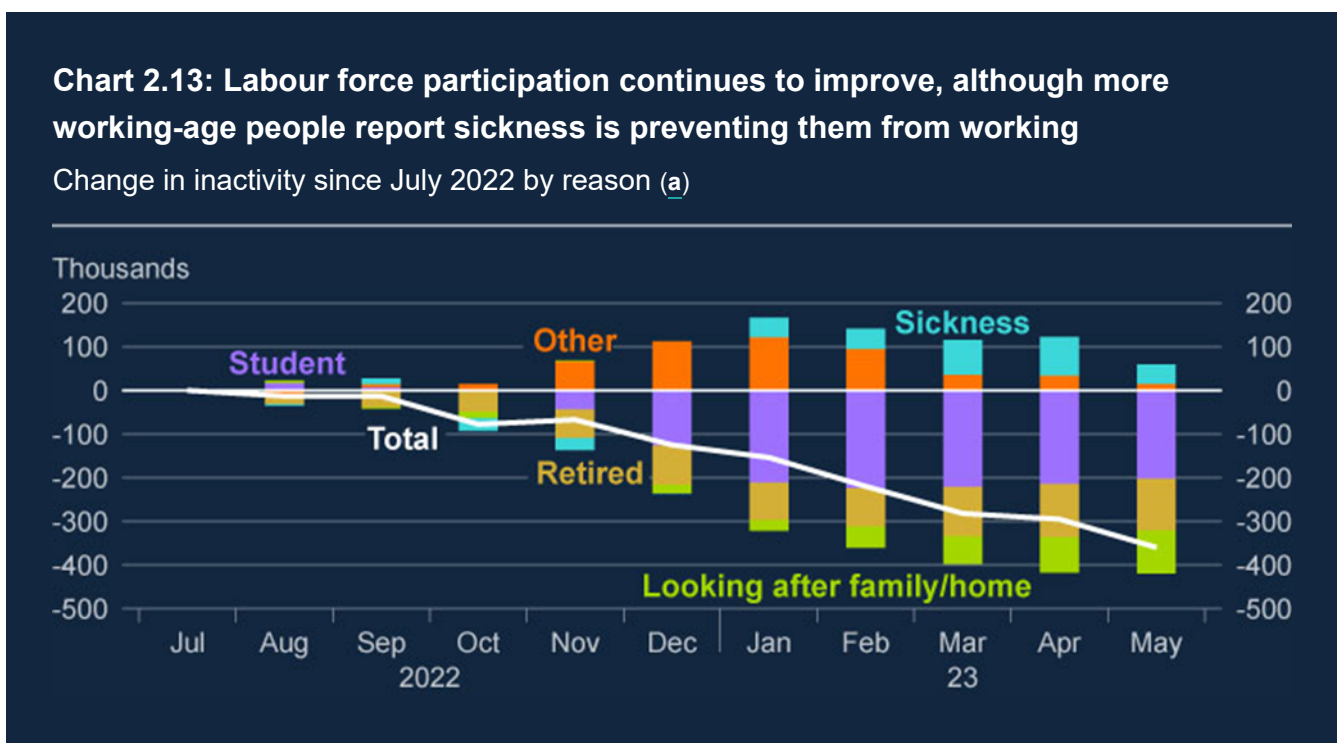


Sources: Bank of England Agents, KPMG/REC/S&P Global UK Report on Jobs, Lloyds Business Barometer, ONS, S&P Global/CIPS and Bank calculations.

(a) ONS employment growth is the change in headline employment level for people aged 16+ over the value three months earlier. The PAYE employees growth series is the three-month change in the monthly number of PAYE employees. Indicators include surveys from: the Bank's Agents (employment intentions over the next six months); KPMG/REC/S&P Global (index of demand for staff); Lloyds Business Barometer (balance of higher staffing levels over next 12 months); and S&P Global/CIPS (PMI composite employment index). Surveys are taken from a range of sources with varying samples and questions but have been mean and variance adjusted to match the ONS employment growth series between 2000 and 2019, and are therefore shown consistent with the three-month on three-month growth rate. The final data point for ONS employment growth is the three months to May 2023.

The number of working-age people in the labour force has continued to recover since it troughed in mid-2022. This trend is a continuation of that set out in Section 2.3 of the [May 2023 Report](#), with a smaller number of students and a higher student participation rate and, more recently, fewer people reporting retirement and looking after family or the home as the reason for being outside the labour force (Chart 2.13). However, there continues to be a marked increase in the number of people reporting being out of the labour force owing to sickness, which is now a little under half a million more than at the end of 2019. The overall net increase in the number of people in the labour force since mid-2022 suggests that some of the effects of the pandemic that reduced labour force participation are reversing (Section 3 of the [February 2023 Report](#)).

Higher labour market participation has more than offset the rise in employment such that the unemployment rate rose slightly to 4% in the three months to May. It is expected to remain around that level during the second half of 2023, hitting 4.1% in 2023 Q3, up from a forecast of 3.8% in the [May 2023 Report](#) (Chart 2.1).

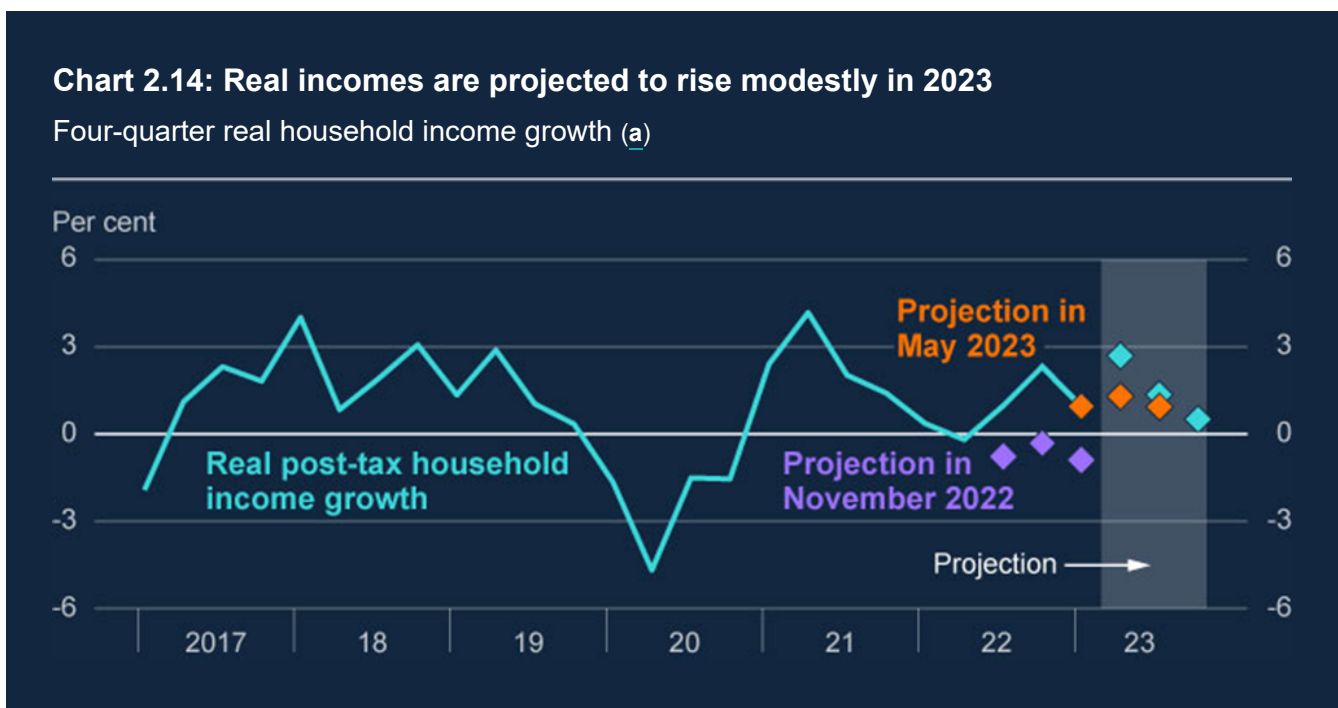


Sources: ONS and Bank calculations.

(a) Changes from the three months to July 2022, based on those aged 16–64. Other reasons include: discouraged workers; those awaiting the results of a job application; have not yet started looking for work; do not need or want employment; have given an uncategoryed reason; or have not given a reason. Sickness includes both those long-term and temporarily sick.

## The strength in the labour market has improved the outlook for household incomes.

The rise in employment and faster-than-expected average earnings growth have increased household income growth, although it remains weak relative to historical averages. Real household incomes grew by 0.9% over the year to 2023 Q1 (Chart 2.14). The latest Bank projection is for four-quarter growth to pick up in 2023 Q2 and to average 1.4% for the rest of 2023. This is a small upward revision compared to the May forecast as nominal labour income expectations have been revised up by more than inflation forecasts (see Section 2.6). Taking a longer view, real income growth is now projected to be materially higher than was projected in November 2022. The biggest driver of this upward revision is the impact of falling energy prices and the extension of government support for energy bills (for more details of changes in the Bank's forecast over time see Annex 2).



Sources: ONS and Bank calculations.

(a) Diamonds show Bank staff projections. The aqua diamonds show the latest projections for 2023 Q2, Q3 and Q4. Income includes non-profit institutions serving households. See footnote (q) in Table 1.D for the definition of real post-tax household income.

**There are some indications that the labour market is loosening, but it remains tight.**

Labour market tightness is important because it is one of the key factors that affects wage growth and domestic inflationary pressures. Tightness is not a directly observable phenomenon; it depends on the interaction of labour supply and demand and the structure of the labour market.

One important indicator of tightness, the ONS vacancies to unemployment ratio, has been falling since early to mid-2022 (the aqua line in Chart 2.15), although it remains above its 2019 Q4 level. A high number of job vacancies compared to the number of unemployed people suggests the labour market is tight. Timelier measures of job postings from Indeed and Adzuna show similar dynamics although the number of vacancies in these series has returned to closer to their pre-pandemic levels. However, these series measure the number of job adverts rather than the total number of vacant jobs, and so may be affected if businesses choose to place a single advert for multiple job openings. These series also cover less of the job market than the ONS series so are less reliable in assessing the overall level of tightness.

A composite measure of labour market tightness confirms that the labour market is loosening but remains tighter than prior to the pandemic (the orange line in Chart 2.15). This combined measure has moved in a similar way to the vacancies to unemployment ratio, although it suggests that the peak in labour market tightness was not quite as high in 2022.

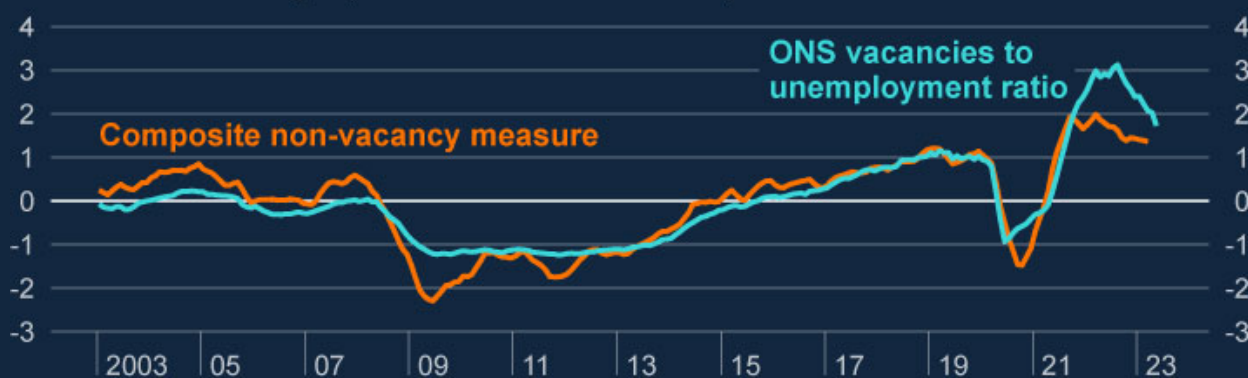
One factor that could be adding to labour market tightness is a decline in the efficiency with which workers are matched to job vacancies. There is some evidence that there has been a decline in the flow of new hires compared to what would typically have been expected given the number of vacancies.



**Chart 2.15: The labour market remains tight, although has loosened since mid-2022**

Measures of labour market tightness (a)

Differences from averages (number of standard deviations)



Sources: ONS and Bank calculations.

(a) The composite non-vacancy measure is calculated as the first principal component of seven series: the short-term unemployment rate; quarterly resignations as a share of employment; the share of employed people who report wanting more hours in their current job; the number of redundancies as a share of employment; the Bank's Agents composite company visit score for recruitment difficulty; and the rate of flows out of unemployment and inactivity into employment respectively. Quarterly series are linearly interpolated to monthly data. These measures can vary for reasons unrelated to a strict definition of labour market tightness however the first principal component is intended to capture the comovement of these series, which is likely to be similar to a measure of labour market tightness. The ONS vacancies and composite non-vacancy measure series are mean and variance adjusted using data from 2002 to 2023.

### **| Nominal wage growth has risen further.**

At 7.7% in May, annual private sector regular average weekly earnings growth was at its highest rate since the series began in 2001, after accounting for volatility during the pandemic. This was around 1 percentage point higher than expected in the May Report, while the annualised three-month on three-month growth rate was over 9% in May. As with labour market tightness, wage growth is one of the key indicators that the MPC are monitoring. This is because rapid growth could indicate more persistent domestic inflationary pressure (Section 1). There are a number of potential drivers of strong nominal wage growth, with past analysis highlighting that high inflation can itself feedback to faster wage growth (for more detail see Section 3 of the [May 2023 Report](#)).

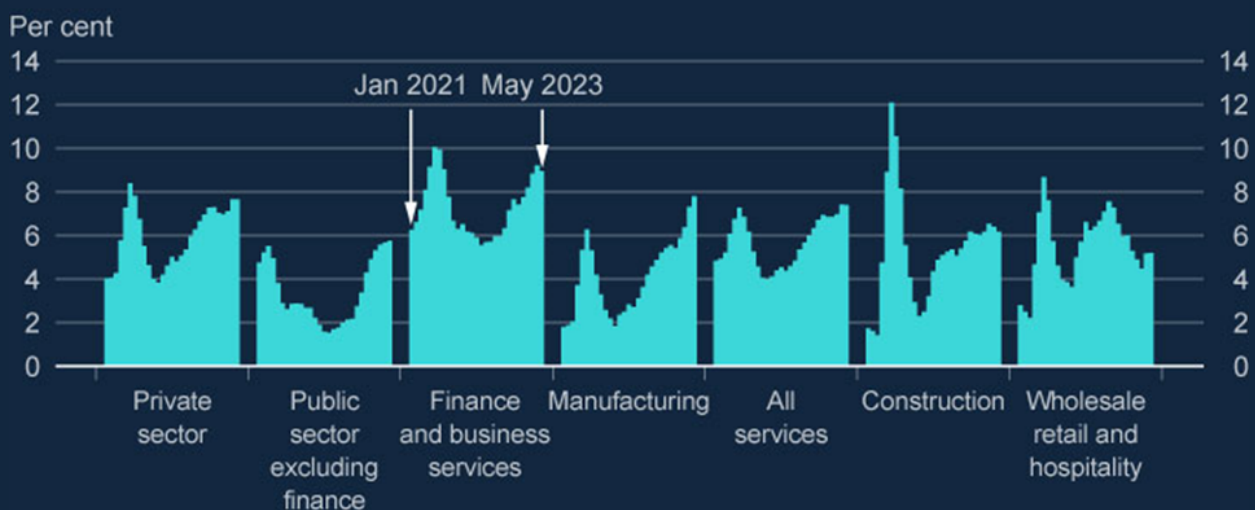
One factor potentially affecting average weekly earnings growth since April is the increase in the National Living Wage (NLW). In 2022, 5.4% of employees were paid the minimum wage ([Low Pay Commission Report 2022 \(2023\)](#)). This proportion probably fell prior to the 2023 increase in NLW rates because some employers had raised pay above those rates in response to high inflation. This relatively low level of coverage, combined with the

low rate of pay compared to average wages, means that the direct effect on aggregate wage growth is likely to have been limited, particularly in the context of already elevated aggregate wage growth.

Labour market tightness has played a role in elevated nominal wage growth, and there is tentative evidence that it explains some of the wide variation in pay across some sectors. In May 2023, average annual pay growth for those in the finance and business services sector was 9.0%, significantly above the 5.2% rate of growth across the wholesale, retail and hospitality sectors (Chart 2.16). The finance and professional services sector – and within that the professional and scientific sector in particular – has the highest ratio of vacancies to unemployed people in the private sector.

**Chart 2.16: Wage growth varies widely by sector**

Annual regular pay growth, by broad sector (a)



(a) Pay growth is measured as the average wage level over three months compared to the corresponding period a year earlier. The data are not adjusted for pandemic-related composition effects.

### Some forward-looking indicators suggest wage growth will fall back in the second half of 2023 but the outlook is particularly uncertain.

Some forward-looking indicators suggest that nominal wage growth will fall in the latter half of 2023. For example, the KPMG/REC/S&P Global UK Report on Jobs indicator of wage growth (aqua line in Chart 2.17) suggests annual wage growth is currently around its peak. The REC measure is an indication of the monthly change in wages for new hires and tends to lead changes in the official measure of annual wage growth; in the chart, the

series is shifted forward 12 months to reflect the strongest correlation with the private sector regular pay growth series. A similar measure, the Indeed Wage Tracker (gold line in Chart 2.17), which measures the average annual change in the wages stated in job adverts, suggests wage growth has not fallen back for new hires. But this measure has been closest to contemporaneous private sector wage growth rather than being a reliable leading indicator.

The outlook for wage growth is particularly uncertain. The REC series has been among the best-performing indicators in predicting future wage growth over the past two decades but there are uncertainties about how accurate the current steer from the measure is. For example, changes in how frequently people move jobs might affect the relationship with the official data, although Bank staff analysis suggests that the impact of this on the current outlook is small.

Overall, the latest projection for private sector regular earnings growth is for it to fall to 6.9% in 2023 Q3 and then 6.2% in Q4. This broadly matches intelligence from the Bank's Agents, whose contacts generally expect wage growth to fall from current levels but remain higher than usual at the end of the year at around 5% to 6%. Nonetheless, the recent pattern of upwards surprises in wages suggests that risks may lie to the upside in the near term. Given the role that the rise in headline inflation appears to have played in the increase in wage growth, the projected easing in wage growth is consistent with the projected fall in inflation (Section 2.6), which has typically affected short-term inflation expectations (Section 2.7).

**Chart 2.17: Twelve-month private sector regular pay growth was 7.7% in May, but forward-looking indicators suggests growth will slow this year**

Measures of annual wage growth (a)



Sources: Indeed Hiring Lab, KPMG/REC/S&P Global UK Report on Jobs, ONS and Bank calculations.

(a) Definitions of wage growth vary between each of the measures. Private sector regular pay growth is Bank staff’s estimate of underlying pay growth between January 2020 and November 2022 and ONS private sector regular pay growth otherwise. REC shows average starting salaries for permanent staff compared to the previous month. Pay as You Earn (PAYE) Real Time Information (RTI) shows median of employee pay growth. Indeed shows annual average job title matched pay growth for UK job vacancies. The REC index is mean-variance adjusted to ONS private sector regular pay growth over March 2001–19 and is advanced by 12 months, which coincides with the greatest correlation with private sector regular pay growth. Latest data points are June 2023 for Indeed, PAYE RTI and the REC index, and the three months to May 2023 for private sector regular pay.

## 2.6: Inflation

**Consumer price inflation remains very high but has started to fall, largely due to household energy bills stabilising.**

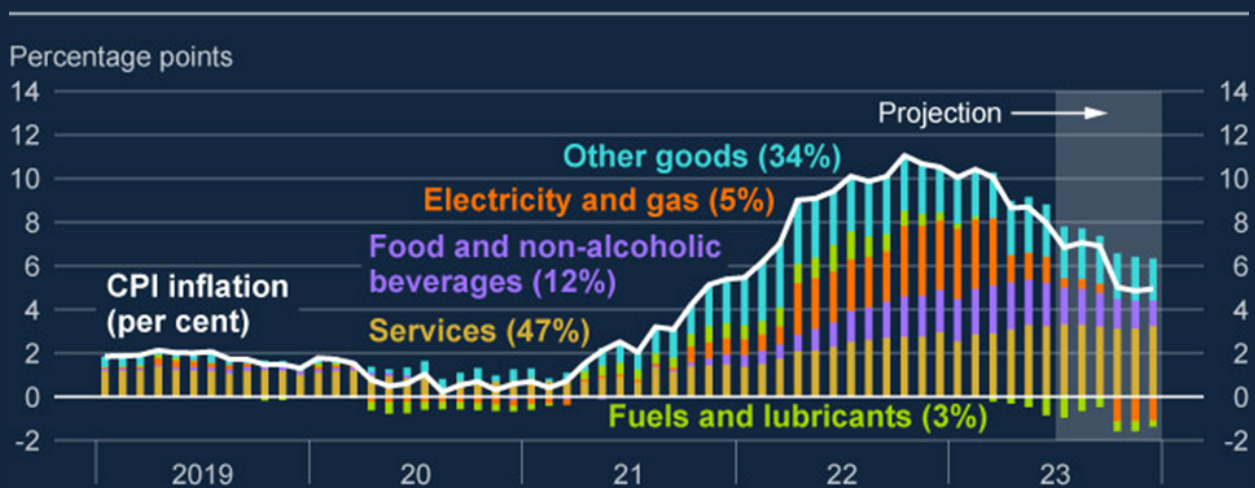
Twelve-month CPI inflation remains well above target, at 7.9% in June, down from the 11.1% peak in October 2022. This decline is more than accounted for by a falling contribution from fuel prices, which have declined, and electricity and gas bills, which have stabilised at a high level (Chart 2.18). The contribution from those categories to headline inflation fell from 3.9 percentage points in October to 0.4 percentage points in June. In contrast, the contribution from other goods and services rose by 0.3 percentage points.

**Lower household energy prices are expected to help push CPI inflation down to around 5% in Q4.**

Inflation is projected to fall further in the coming months, to 4.9% by 2023 Q4, largely reflecting falling energy bills. From October 2022, households’ gas and electricity prices were set by the Government’s Energy Price Guarantee, which meant that the typical household was paying an annualised bill equivalent to £2,500 per year. Wholesale gas prices have fallen materially since then (Chart A in Annex 2). These falls have been large enough that Ofgem’s price cap is now below the Energy Price Guarantee and so, since July 2023, the typical household has been paying an equivalent bill of around £2,000. Based on the latest energy futures prices, the Ofgem price cap is expected to fall a little further from October to around £1,900 per year. However, the rate of inflation, which is calculated as an annual comparison, falls more materially because prices in 2022 Q4 were at the Energy Price Guarantee ceiling of £2,500. This means electricity and gas prices will start to drag on overall CPI inflation, by around 1.1 percentage points in 2023 Q4. Gas prices remain volatile and so there is uncertainty around this projection.

**Chart 2.18: Consumer price inflation has fallen since last year’s peak and is projected to fall further as energy prices moderate**

Contributions to CPI inflation (a)



Sources: Bloomberg Finance L.P., Department for Energy Security and Net Zero, ONS and Bank calculations.

(a) Figures in parentheses are CPI basket weights in 2023. Data to June 2023. Bank staff projections from July to December 2023. Fuels and lubricants estimates use Department for Energy Security and Net Zero petrol price data for July 2023 and then are based on the sterling oil futures curve.

**Consumer price inflation in June 2023 was in line with the projection in the May Report, but services price inflation has been higher than projected.**

Overall CPI inflation in June was in line with the May Report projection (Chart 2.1). However, services price inflation was stronger than expected. This was offset by lower-than-projected energy prices.

**The near-term projection for services price inflation has been revised up since the May Report, suggesting stronger domestic inflationary pressure.**

Services price inflation has risen since the May Report, reaching 7.2% in June, down only slightly from the 31-year high reached the previous month (Chart 2.19). The June outturn was 0.5 percentage points higher than previously projected, and some of that increase is projected to persist. Services price inflation is one of the key metrics the MPC is monitoring as a signal of underlying inflationary pressure in the economy.

The strength of services price inflation suggests higher inflation may be somewhat more persistent. However, some of the key components accounting for the upward surprise are factors that have historically been less informative about underlying inflationary pressure. The upward surprise since May has been accounted for by a small number of components, in particular Vehicle Excise Duty and package holidays. Vehicle Excise Duty rises each year in April and is set by the Government and so has little relationship to underlying macroeconomic developments, although its effect on inflation will remain for twelve months. The price of package holidays will to some extent reflect changes in prices abroad, but to the extent that it reflects higher domestic demand and the strong labour market, it could signal more inflationary pressure.

### Chart 2.19: Services price inflation is projected to remain high

Twelve-month services inflation (a)



Sources: ONS and Bank calculations.

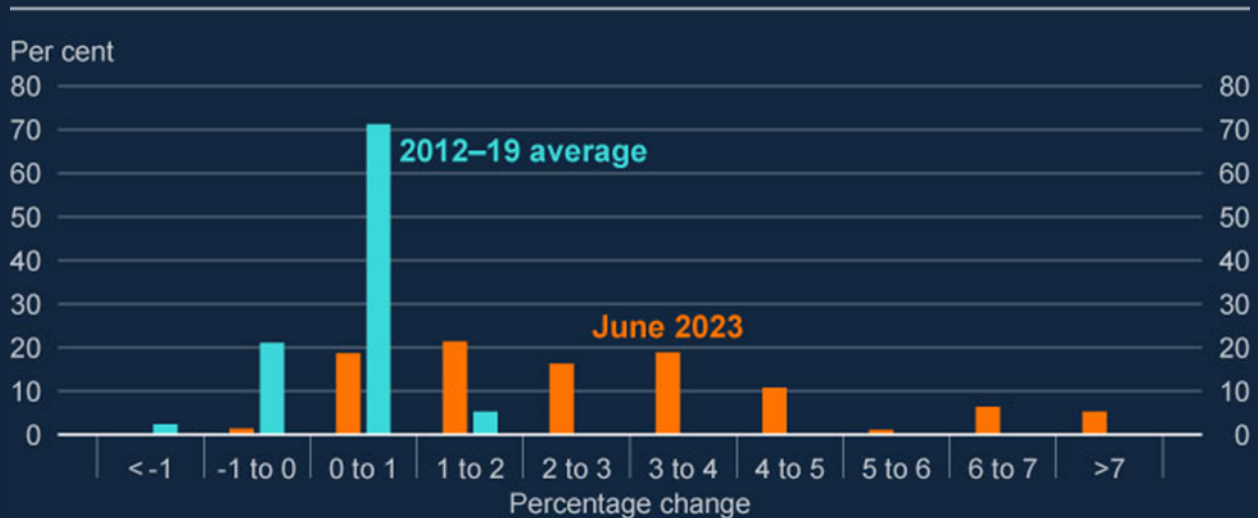
(a) The latest data point is June 2023 and the projection is shown to December 2023.

### Goods price inflation continues to be broad-based across products...

Strong goods price inflation is relatively broad-based. Chart 2.20 shows the consumption-weighted distribution of price rises across the 49 disaggregated categories of goods prices in June 2023, compared to the distribution of average price rises between 2012 and 2019. The median price rise over the three months to June 2023 was 2.2%. This means that for half of goods categories average prices rose by over 9% on an annualised basis, far above a level that would be consistent with the 2% inflation target.

### Chart 2.20: Higher goods price inflation is affecting a larger-than-typical share of product categories

Weighted histogram of three month on three month goods price inflation, excluding energy (a)



Sources: ONS and Bank calculations.

(a) The June 2023 data shows the weighted share of goods components of the CPI basket which have experienced price changes within each band. Weights are based on the latest published CPI weights. For example, just under 20% of goods components experienced average increases in prices of between 3% and 4%. The 2012–19 average shows the equivalent distribution averaged over all months between 2012 and 2019.

**...but slowing producer price inflation indicates goods price inflation is likely to start to ease towards the end of 2023, although the outlook remains very uncertain.**

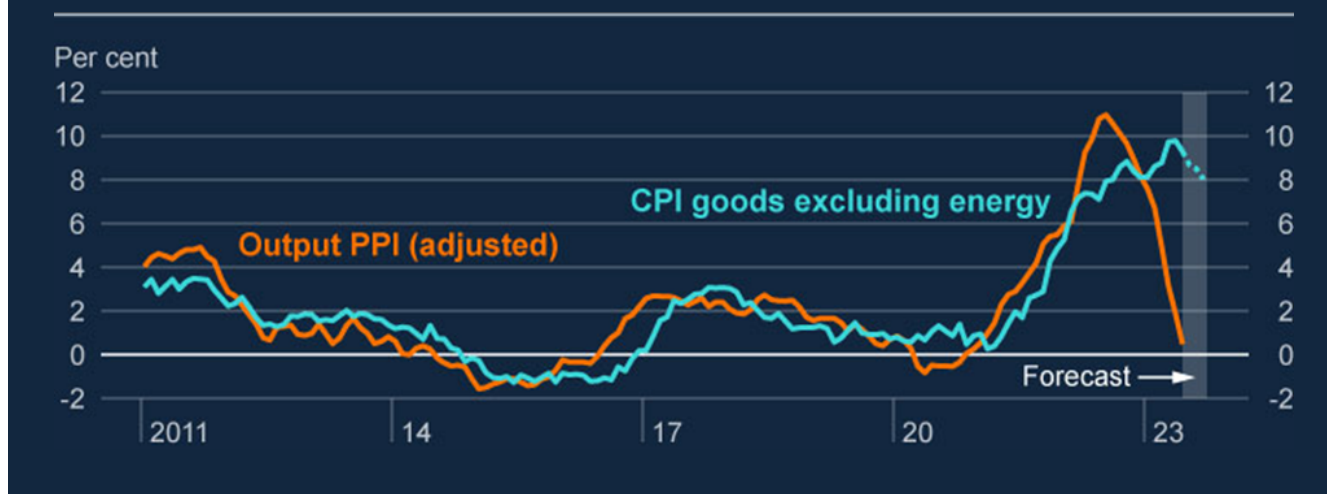
The broad-based price increases suggest that goods price inflation has been driven by a common factor and might continue at a relatively high level in the near term. Indeed, the latest projection for the contribution of goods prices excluding energy to overall inflation falls from 4.3 percentage points to a still elevated 3.1 percentage points over the next six months.

However, output producer price inflation, which measures the change in the price of goods sold by UK manufacturers, has slowed significantly since its peak in mid-2022. This should help to reduce consumer price inflation once cost pressures have fully passed through supply chains (Chart 2.21). Producer price inflation for services has also slowed, though by less than the output PPI series, falling from 6.2% at its peak in 2022 Q3 to 4.8% in 2023 Q2.



### Chart 2.21: Producer price inflation suggests cost pressures for goods are easing

Annual output producer price and CPI goods excluding energy inflation (a)



Sources: ONS and Bank calculations.

(a) The output PPI series is the headline ONS measure for manufacturing output producer prices. The PPI series has been mean and variance adjusted to match the corresponding CPI series between 2012 and 2019. The latest data point is June 2023 and the forecast is to September 2023.

Output PPI inflation and CPI goods inflation have typically had a tight correlation (Chart 2.21), which is unsurprising given that in a competitive market producer cost changes would be expected to be passed onto consumers. That relationship would suggest that CPI goods price inflation could decline sharply in the near term. But the sharp slowdown in PPI inflation has not coincided with a material slowdown in goods price inflation to date.

There are a number of candidate explanations for this recent divergence between PPI and CPI inflation.

First, it is possible that consumer-facing firms have sought to rebuild margins. But as discussed below, there is not much evidence at the whole-economy level that firms have increased their margins so far.

Second, the scale of the recent economic shock may have slowed the transmission of producer price changes to consumer prices. For example, the large rise in energy prices was accompanied by a significant increase in the volatility of those prices. If firms throughout the supply chain chose to enter fixed-price contracts to reduce this uncertainty, that could slow the pace at which cost falls can move through those supply chains and

ultimately reach consumer prices. As noted by [Dhingra \(2023\)](#), there is historical precedent for large shocks to producer prices being associated with a change in the lag to consumer prices.

Third, there are also important differences between the coverage of consumer and producer price data. In particular, producer prices include non-consumer facing firms (for example, those operating business-to-business). Differences in cost pressures between consumer and non-consumer products would therefore result in an increasing wedge between these series. There are also costs in the supply of consumer goods which are not captured in the PPI, for example retailer's energy and labour costs. Producer prices data are calculated for the domestic economy but import prices, which have not slowed in line with PPI inflation, have an important role in consumer products. That means more persistent import price growth would not be captured fully in the PPI data.

### **Food price inflation appears to have peaked, although it is likely to remain high throughout 2023.**

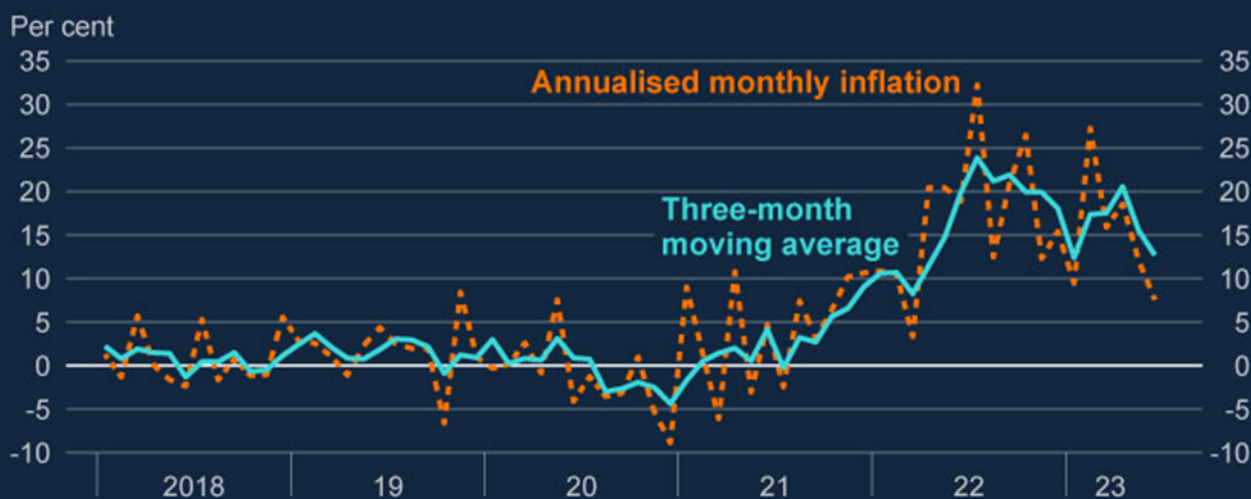
Food price inflation, which has a particularly large impact on the living costs of lower-income families due to it making up a larger share of these families' budgets, remains extremely high. The annual rate hit 19.1% in March and only fell back a little, to 17.3% in June, in line with the projection in the May Report. Month-on-month food price inflation provides a clearer picture on the current pace of price increases. This has slowed to around 10% in the latest data but remains high (Chart 2.22).

Evidence from the Bank's Agents suggests that food price inflation is likely to continue to slow, albeit only gradually. Industry contacts expect annual food inflation to fall to around or a little below 10% by the end of the year (Box D). This reflects a moderation in input prices, which are taking time to transmit through the supply chain. For example, many companies are on fixed-term energy contracts and so falling wholesale prices will only benefit them when their contracts end.

Overall, the contribution of food prices to CPI inflation is projected to fall from around 2 percentage points in June to 1.3 percentage points in 2023 Q4.

### Chart 2.22: Food inflation remains high but has started to slow slightly

Annualised monthly food and non-alcoholic beverages inflation (a)



Sources: ONS and Bank calculations.

(a) The latest data points are for June 2023.

**Firms' margins do not appear to be a major factor in current high levels of aggregate inflation, but if firms try to increase margins in coming months that may push up inflation.**

In aggregate, corporate profits have been little changed as a share of GDP over the past two years, suggesting that firms increasing prices to raise their margins is not currently a significant contributor to inflation (see [Haskel \(2023\)](#)). An accounting decomposition of the GDP deflator, a measure of prices across the entire economy (unlike CPI which measures consumer prices) shows that the majority of the increase in prices has resulted from increases in labour costs, reflecting the fact that the largest share of income goes to labour (Chart 2.23). In contrast, the contribution from corporate profits has only risen slightly over 2023. So the latest data suggest there has been little change in the overall share of income accounted for by corporate profits or labour costs.

This is broadly consistent with evidence based on firms' self-reported margins. Evidence from the 2023 Q2 DMP suggests that margins have been more likely to fall, on average, rather than rise over the past year. However, this evidence does not rule out the possibility that margins may have contributed to inflation in particular sectors. The Competition and

Markets Authority (CMA) have found that competition between road fuel supply retailers has weakened in recent years and margins in **fuel retail** have risen significantly since 2019. The CMA are conducting further work on the **groceries sector** – see Box D.

There is some evidence that firms are expecting to increase margins, which could mean inflation remains elevated for longer. Most respondents to the Bank’s DMP Survey expect to maintain or increase margins in the coming year. The Bank’s Agency network also report that firms in some sectors are expecting to increase margins, particularly where they have previously been squeezed.

### Chart 2.23: In aggregate, corporate profits have made relatively little contribution to rising prices over the past year

Contribution to the four-quarter change in the GDP deflator (a)



Sources: ONS and Bank calculations.

(a) The corporate gross operating surplus is defined as the contribution of the sum of private non-financial gross operating surplus, net of the alignment adjustment, and financial corporations gross operating surplus. For more detail on this topic, see [Haskel \(2023\)](#).

## 2.7: Inflation expectations

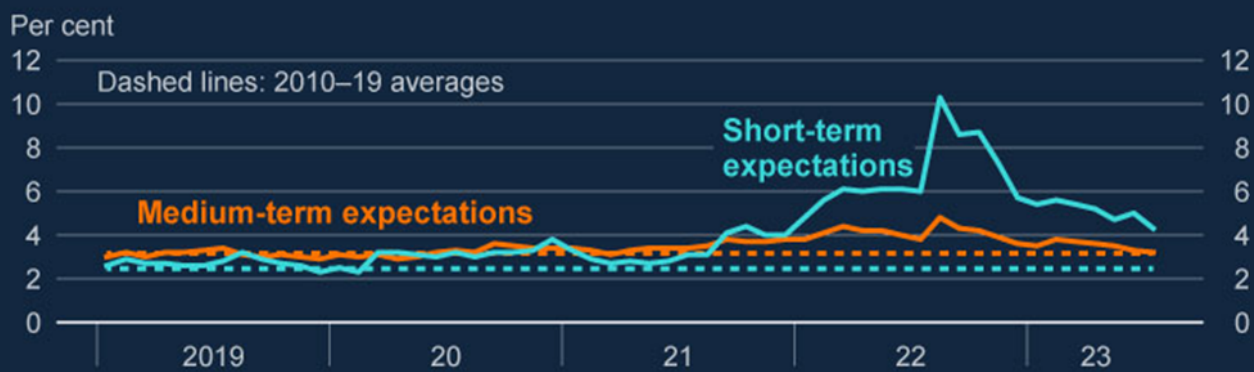
### Household inflation expectations have continued to decline.

Household inflation expectations are an important indicator of inflationary pressure, as they, alongside business inflation expectations, can affect wage-setting behaviour. Household inflation expectations have fallen back since the peak in 2022, with the short-term expectations series showing a more marked fall (Chart 2.24). Medium-term

expectations are now in line with historical averages at 3.2%. Short-term inflation expectations tend to be related to current inflation levels, so if inflation falls back in the coming months, they could continue to decline.

### Chart 2.24: Household inflation expectations have fallen back from the peak in 2022

Household inflation expectations (a)



Sources: Citigroup, YouGov and Bank calculations.

(a) Data are not seasonally adjusted. 'Short-term expectations' refers to expectations in the next 12 months and 'medium-term expectations' refers to expectations five to ten years ahead. The household surveys ask about expected changes in prices but do not reference a specific price index. Summarised as a weighted median. The latest data points are for June 2023.

### Firms are also expecting to raise their own prices at a slower rate over the coming year, albeit still faster than the inflation target.

In the DMP Survey, firms' expectations for own-price growth have been declining and now stand at a little over 5% on average over the coming year (Chart 2.25). This remains above a level consistent with the 2% target and is somewhat higher than the MPC's latest projection for inflation in 2024 Q2 at 3.3%, although the DMP measure includes non-consumer facing firms and so is not directly comparable to CPI.

### Chart 2.25: Firms' expectations of price growth continue to fall back

Firms' own realised and expected price inflation (a)



Sources: DMP Survey and Bank calculations.

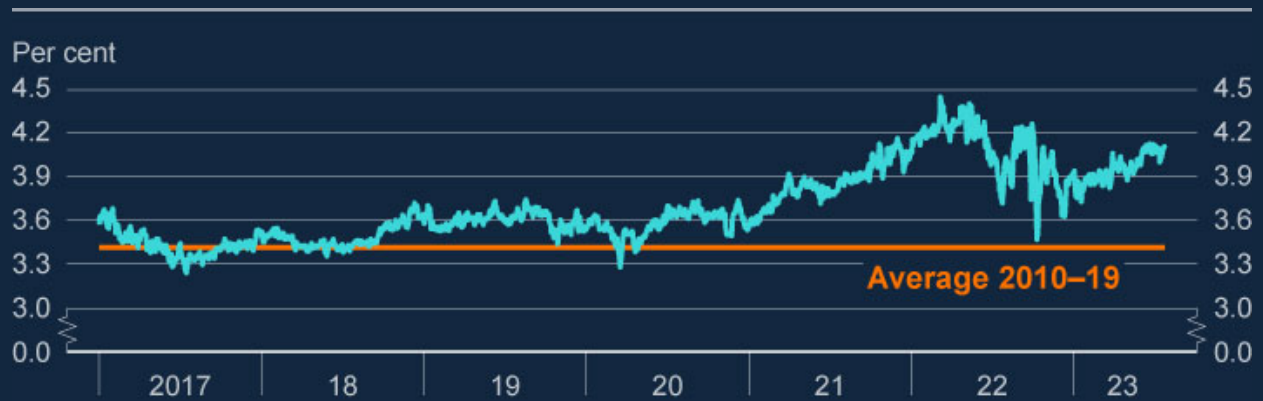
(a) Solid lines show three-month moving averages and dashed lines show the single-month value. Realised price growth are responses to the question: 'Looking back, from 12 months ago to now, what was the approximate % change in the average price you charge, considering all products and services?'. Expected price growth are responses to the question: 'Looking ahead, from now to 12 months from now, what approximate % change in your average price would you expect in each of the following scenarios: lowest, low, middle, high and highest?', and respondents are asked to assign a probability to each scenario which is used to create a weighted average expectation of price growth. The latest data are for July 2023.

### Indicators of medium-term inflation expectations in financial markets have increased slightly since May.

A measure of medium-term inflation compensation in financial markets has risen somewhat since the start of the year but remains below the peak in the first half of 2022 (Chart 2.26). This is a measure of RPI inflation compensation, so has been adjusted for the impact of RPI reform on market pricing. There are difficulties in interpreting these data given that they can move for reasons unrelated to inflation expectations, for example due to illiquidity in markets and the use of these instruments in hedging pension liabilities. Any changes in the outlook for the wedge between RPI and CPIH can also affect these data.

### Chart 2.26: A measure of medium-term inflation expectations in financial markets has been drifting up

RPI-reform adjusted measure of five-year, five-year forward inflation compensation (a)



Sources: Bloomberg Finance L.P. and Bank calculations.

(a) Market-derived inflation compensation rates for average UK RPI inflation over a five-year period starting five years into the future. It is derived by adjusting the five-year, five-year rate to account for UK RPI reform. From 2030, UK RPI will be aligned with the CPIH measure of consumer prices. At present, the wedge between the current definition of RPI and CPIH affects the unadjusted series. This measure is calculated by adding a scaled market-derived estimate of the impact of RPI reform onto the unadjusted rate. That is calculated as the difference between the closest one-year forward rates before and after the planned RPI reform date (currently the five-year, one-year rate and the seven-year, one-year rate) on a three-month daily rolling average basis, and the adjustment is applied to the five-year forward period impacted by the reform.

## Box C: Agents' update on business conditions

The key information from Agents' contacts considered by the Monetary Policy Committee at its August meeting is presented in this box, which summarises intelligence gathered in the six weeks to mid-July.

High inflation and increases in Bank Rate have slowed activity across the economy. Looking ahead, contacts remained concerned about inflation proving more persistent, requiring tighter monetary policy. This had weakened their view of the outlook, although employment intentions were still positive.

**Consumer spending values growth remained strong, mainly driven by high price inflation. But cost of living pressures were leading to slightly weaker sales volumes across goods and services.**

For goods such as clothing and footwear, demand was increasingly being driven by discounting. Demand for durable goods was declining and it remained weak for home improvements owing to rising interest rates and cost of living pressures. Demand for new cars continued to fall, while it remained strong for used cars as consumers chose less expensive options.

For consumer services, contacts in restaurants and pubs reported that sales growth was mainly being driven by higher prices. Volumes were slightly down as people were eating out less due to higher prices. In the tourism sector, there were fewer staycations and demand from lower income consumers was falling, but older generations were spending more as pandemic-related caution diminished.

Overall, the outlook for consumption had softened as contacts became more pessimistic.

**Business services revenue growth softened slightly, manufacturing volumes were broadly flat and construction output declined further.**

Business services contacts reported falling revenue growth, although price inflation had partly offset slightly lower volumes. In contrast, strong growth continued in the IT, insurance, law and audit sectors. Expectations for 2023 H2 growth had moderated owing to uncertainty around the future path of interest rates.

Manufacturing output was broadly flat. Supply chain constraints had eased, export demand had improved, but domestic demand was subdued.



Construction output remained at relatively low levels and had declined further due to softer demand and higher financing costs. There was a modest increase in the number of construction firms entering insolvency procedures.

Contacts reported that the outlook for manufacturing and construction output in 2023 H2 was weaker and demand could fall further due to increased uncertainty around further interest rate increases.

**Higher interest rates and uncertainty around the economic outlook were leading to a softening in credit demand and investment intentions.**

Contacts reported rising interest costs were reducing demand for new loans. More firms were paying down debt, but the need for working capital finance was still elevated especially for small firms with squeezed cash flow.

Banks were still willing to lend to well-established companies with strong finances, but credit supply remained tighter than normal. Some small and medium-sized enterprises were increasingly turning to non-bank lenders at a higher cost. Contacts expected insolvencies to rise over the coming year.

Contacts reported that higher interest rates, alongside uncertainty about the economic outlook, were continuing to weigh on investment plans. Rising costs, labour shortages and planning issues in particular were still delaying or disrupting building projects. However, contacts continued to invest in IT and digital services to improve production efficiencies.

**In the owner-occupied housing market, demand was gradually falling and supply increasing, while there were supply shortages in the rental market. Commercial real estate property values continued to fall and investor demand remains subdued.**

Contacts reported that buyers reliant on mortgages were constrained on affordability, mostly reflecting higher interest rates. Some house builders were downgrading build plans and pausing some schemes. Estate agents reported an increase in the stock of existing homes for sale and a number of buy-to-let landlords were selling their properties. House prices had fallen only slightly, and contacts generally expected a decline of no more than 5% in 2023 H2. Acute supply shortages were leading to private rental prices increasing sharply, particularly for new lettings. So far, mortgage and rental arrears were not picking up.

**Employment intentions had rose slightly. Recruitment remained more difficult than normal, but conditions had eased slightly. Pay settlements were expected to fall back gradually in 2023 H2.**

Employment intentions pointed to modest headcount growth over the next 12 months but with variation across sectors. Some business services and manufacturing sector contacts were continuing to expand the workforce owing to demand growth.

Recruitment remained more difficult than normal but had eased somewhat since earlier in the year, with lower vacancies and attrition rates. The loosening in the labour market was mainly evident for less skilled workers and in sectors where demand was falling such as real estate and construction. Recruitment, retention and skills shortages continue to be a challenge in the IT, engineering and finance sectors.

Pay settlements had remained stable in recent months, averaging 6%–6.5%. Average awards were higher in consumer services, driven by the rise in the NLW. Contacts reported that pay awards in 2023 H2 were expected to be slightly lower as inflation was expected to fall back, the labour market loosened, and firms increased their focus on containing costs.

**Input cost inflation was easing. Supply chain lags and producers looking to recover lost margins may delay pass-through into consumer prices. But consumer price inflation had peaked, particularly for goods.**

Input cost inflation had fallen, but energy costs remained high, and most commodity prices had stabilised rather than fallen. Import cost inflation remained high but had come down too, supported by a stronger exchange rate and by freight costs falling back to more normal levels. Many companies had not been able to pass on all previous cost increases into prices, and producers may seek to recover some of that squeeze in profit margins over time. Combined with lags in the supply chain, this may delay pass-through of lower input cost pressures into consumer price inflation.

Manufacturers' domestic price inflation was historically high but continued to decrease with easing cost pressures. Firms expect to return to more normal pricing patterns in the coming year, with fewer and smaller price increases. Business services inflation remained very high, particularly in the professional services, insurance and IT sectors.

Consumer services inflation remained high in the face of pressures from energy and other input costs and pay.

Contacts judged that consumer goods inflation had peaked, including for food (Box D), and was likely to come down faster than consumer services inflation, where staff costs are a bigger portion of the cost structure. The clearest evidence of easing inflationary pressures was for durable goods and clothing and footwear but used car prices remained high and are not expected to fall back quickly.

## Box D: Key messages from external meetings on food price inflation

This box sets out the main themes emerging from meetings in June and July that Bank staff held with a range of external experts and contacts of the Bank's Agency network in the food sector, covering food producers, processors and retailers. They discussed why food price inflation had risen so much in recent quarters, and the main factors affecting the short-term outlook. The meetings supplemented the Agencies' usual intelligence gathering from contacts, which is summarised in Box C.

### | Consumers continued to trade down.

Consumers had responded to pressures on real incomes by switching to cheaper goods, as well as by buying fewer goods. Within sales at the major supermarkets, consumers had switched from branded to own-label goods, or from fresh to frozen produce. And consumers had changed where they shop, spending more at supermarkets with lower average prices.

### | Cost inflation was coming down, but remains high for now.

Input cost inflation experienced by food producers had fallen, but still remained much higher than usual. So far only a few inputs had seen actual reductions in costs. And it may take longer for some producers to see lower cost pressures, particularly where there are annual contracts with suppliers or group buying arrangements.

Many food producers were also facing significant cost pressures from wages and energy. Although there was considerable uncertainty, wage growth was expected to remain higher than normal into 2024. While energy costs had started to fall, many businesses would not benefit from the reduction in wholesale gas prices until their energy contracts come up for renewal, which was likely to be this autumn for many smaller businesses.

For food retailers, the cost of products was by far the largest element of overall costs. They reported a consistent picture of easing product cost inflation, which was expected to be much lower next year, if still a bit above normal. However, retailers also discussed significant overheads from property and staff costs. They had faced

higher wage pressure in the face of recruitment difficulties over the past few years. Staff pay had risen materially above the National Living Wage, and annual increases had remained high this year.

**Food price inflation was expected to be significantly lower by the end of the year.**

In the light of easing cost inflation, there was quite wide agreement among discussants that food price inflation had now peaked. It was expected to be significantly lower by the end of the year, perhaps around 10% or slightly lower. On average, it was thought to take around five to nine months for changes in commodity prices to work through to shop prices. But there was some discussion of the possibility that food price inflation may come down more slowly than it went up, partly because of the impact of non-product costs.

Food price inflation was expected to fall further in 2024. But uncertainty was a common theme in discussions, including continuing geo-political risks, and there was a range of views on prospects. Some thought that food price inflation would remain slightly higher than normal, but others thought there could be modest falls in prices by the end of the year.

Discussions also highlighted some differences within the overall picture:

- Price falls were more likely for goods that are simple to process, such as butter, milk and bread. These staples might be a focus of competition for supermarkets, and margins on those goods could become significantly squeezed.
- Inflation had been higher for own-label products, because the cost of ingredients is a much larger proportion of the retail price than for branded equivalents.
- For similar reasons, inflation tended to be higher for products sold by the discount retailers. Their operating models (fewer product ranges, smaller and lower-cost stores) meant their profit margins tend to be lower than those of the major grocers, so they have less scope to absorb cost pressures.

**Profit margins had been squeezed across much of the food sector.**

Many discussions touched on the high degree of competition between the major UK supermarkets, which was said to result in profit margins that were relatively thin across much of the food sector, and were likely to have declined further recently.

Food producers said their margins had been squeezed, as they had not been able to pass on all of recent cost increases to their retailer customers. Businesses in the agricultural sector feared they would face additional pressure over time, as they

expected the replacement for the Common Agricultural Policy to offer a lower overall level of funding. However, some discussants thought that the market power of large manufacturers of branded products could mean those businesses experienced less margin erosion in the face of cost pressures.

Retailers too said they had seen their margins fall, despite implementing a range of cost-saving initiatives. The need to operate stores and distribution networks meant that retailers tended to have a higher proportion of fixed costs than producers. A change in sales volumes would therefore tend to have a larger impact on profits for a retailer than for a producer. So there was pressure to give up some margin to remain competitive in such a concentrated market.

Expected future price increases would be consistent with a slight recovery in margin in the coming quarters for the sector as a whole. But for some businesses, it might take significantly longer, perhaps years, to get back to more normal margins.

**A recent report by the Competition and Markets Authority** on competition in groceries found that retailer operating margins for groceries (including food) fell in 2022–23 on average compared with the previous year, indicating that not all cost increases had been passed through to consumers. Retailers were hoping to increase their margins this year, but the competitive environment might limit the extent to which that could be achieved without losing market share.

## Annex 1: Other forecasters' expectations

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This annex reports the results of the Bank's most recent survey of external forecasters. Responses were submitted in the two weeks to 21 July and are summarised in Chart A. These are compared with the MPC's modal projections, which are conditioned on a range of assumptions (Section 1.1) that may differ from those made by external forecasters.

On average, respondents expected GDP to rise by 0.6% in the four quarters to 2024 Q3 (left panel, Chart A). Responses ranged from -1.2% to 2.3%. Four-quarter GDP growth was then expected to rise, on average, to 1.4% in 2025 Q3 and 1.6% in 2026 Q3. These forecasts are higher than the MPC's modal projections of 0.3% in 2025 Q3 and 1.1% in 2026 Q3.

External forecasters expected an unemployment rate of 4.5% in 2024 Q3, higher than the MPC's projection of 4.3% (middle panel, Chart A). The average external forecast remains at 4.5% in 2025 Q3 and 2026 Q3. By comparison, in the MPC's projection, the unemployment rate rises to 4.8% in 2025 Q3 and remains there in 2026 Q3.

CPI inflation was expected to fall, on average, to 2.6% in 2024 Q3, a slightly faster decline than the MPC's projection of 2.8% (right panel, Chart A). The average forecasts for 2025 Q3 and 2026 Q3 were broadly in line with the 2% target at 2.1% and 1.9% respectively, both a little above the MPC's modal projection, but broadly in line with the MPC's mean projection.

**Chart A: At the three-year horizon, external forecasters expected four-quarter GDP growth to be 1.6%, the unemployment rate to be 4.5%, and CPI inflation to be 1.9%**

Projections for GDP, the unemployment rate and CPI inflation

- Range of forecasters' projections
- ◆ MPC's modal projection
- ◆ Average of forecasters' projections

Percentage changes on a year earlier



Per cent



Per cent





## Annex 2: How has the economy evolved recently relative to the MPC's projections?

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The MPC regularly assesses how the economy has performed relative to its forecasts and this is detailed on an annual basis in the Monetary Policy Report. In recent years, the UK economy has been subject to a sequence of supply shocks, as set out in [Bailey \(2023\)](#). These have driven inflation outturns well above the MPC's modal projections made at the start of 2021 – as discussed in the [May 2022 Report](#) – and the forecast made at the start of 2022, which is the focus of this annex. The Court of the Bank of England has commissioned a broad review of the Bank's forecasting and related processes during times of significant uncertainty. This review will be led by Dr Ben Bernanke, supported by the Bank's [Independent Evaluation Office](#), and conclude next year with the findings to be published in the spring.

The MPC's projections are conditional forecasts. They are based on assumptions about how energy prices, asset prices (including Bank Rate) and fiscal policy will evolve. Changes in these assumptions, particularly for energy prices (Chart A), have had large effects on the MPC's projections in recent years.

The MPC's February 2022 forecast preceded Russia's invasion of Ukraine. This shock had a significant impact on energy and other prices, notably food. CPI inflation was 10.2% in 2023 Q1, 5 percentage points higher than the MPC's central projection in February 2022. Around half of this news in inflation is accounted for by the direct impact of higher energy, and non-energy import prices (Chart E). In addition, there have been more persistent second-round effects on domestic inflation as these external shocks have interacted with the state of the UK economy, including the tightness of the labour market.

### Chart A: Gas prices have been volatile, which has been reflected in changes to the MPC's conditioning assumptions

Wholesale gas spot price and forecast conditioning assumptions for futures prices (a)



Sources: Bloomberg Finance L.P. and Bank calculations.

(a) Spot price is the one-day forward price of UK natural gas. Projections made prior to November 2022 were conditioned on wholesale gas prices following the futures curve for the first six months and then remaining constant.

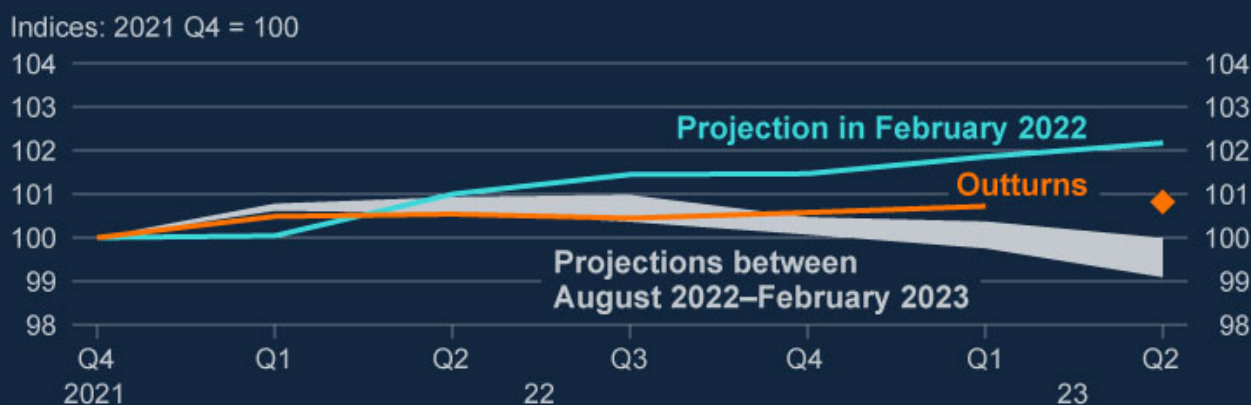
## How have outturns differed from the MPC's February 2022 central projections?

### ■ GDP growth has been weaker than the MPC's February 2022 central projection...

GDP growth since 2022 has been weaker than projected in the February 2022 Report (Chart B). After Russia's invasion of Ukraine, the outlook for world and UK activity was downgraded materially, as the sharp rise in energy prices was expected to squeeze household real incomes and weigh heavily on demand. This was reflected in the MPC's subsequent projections, though recent GDP outturns have been a little stronger than those (Chart B).

### Chart B: GDP growth has been weaker than projected in February 2022, but a little stronger than subsequent MPC projections

GDP outturns and projections (a)



Sources: ONS and Bank calculations.

(a) The aqua line is the MPC's modal projection for GDP growth based on the conditioning assumptions underlying the February 2022 projections. The grey swathe is the MPC's central projection for GDP growth using the conditioning assumptions on which the August 2022, November 2022 and February 2023 projections were based. The orange line represents ONS data outturns. The diamond represents Bank staff's latest estimate of GDP growth in 2023 Q2 based on data to May 2023.

#### ...but the unemployment rate has been a little lower.

At the time of the February 2022 Report, the LFS unemployment rate was 4.1% and expected to fall slightly in the first half of 2022, before rising to around 4.4% by the middle of 2023. The unemployment rate has been a little lower than that projection. It declined to 3.8% in 2023 Q1, before picking up to 4.0% in the latest data, which cover the three months to May 2023.

#### CPI inflation has been materially higher than the MPC's February 2022 projection, and even higher than expected by external forecasters.

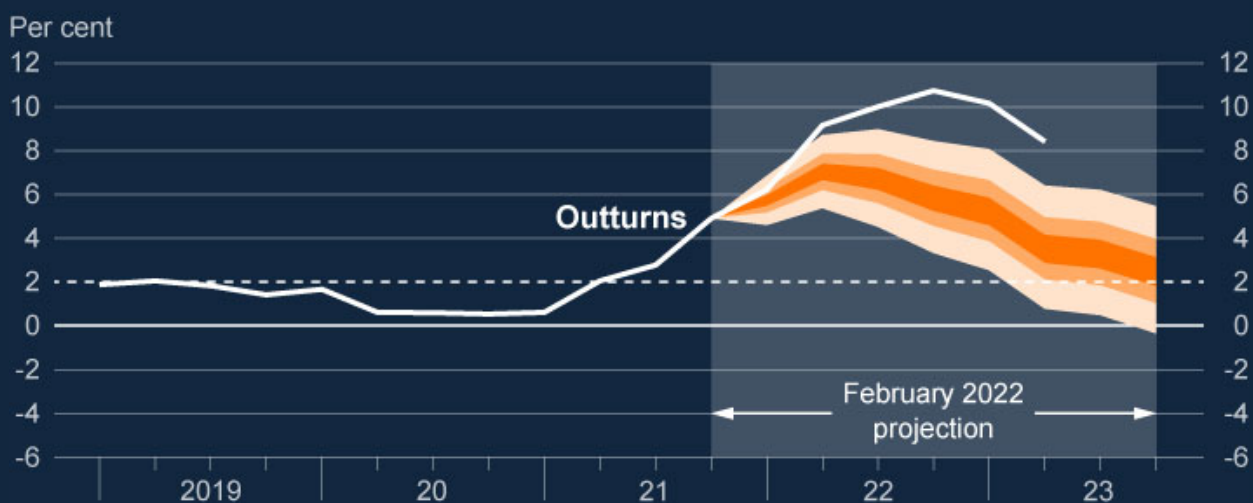
At the time of the February 2022 Report, CPI inflation had already risen markedly and stood at 5.4% in December 2021. This overshoot relative to the 2% target mainly reflected sharp increases in energy prices and global traded goods prices. Sustained disruption to supply chains, and the shift in global demand towards goods and away from services, had put significant upward pressure on tradable goods prices since the pandemic. These effects were expected to continue pushing up inflation to a peak of 7¼% in April 2022,

after which it was projected to decline. Following Russia's invasion of Ukraine, inflation rose much quicker and higher than projected, peaking at 11.1% in October 2022, before falling back to 8.4% in 2023 Q2.

Inflation outturns have been outside the MPC's February 2022 fan chart since 2022 Q2 (Chart C), something which would be expected to happen 10% of the time. The gap between inflation outturns and the projections of external forecasters contained in the February 2022 Report has been even larger than the gap with the MPC's central projection (Chart D).

### Chart C: Inflation has been materially higher than the February 2022 central projection, rising outside of the fan chart

CPI inflation outturns and projection in the February 2022 Report (a)

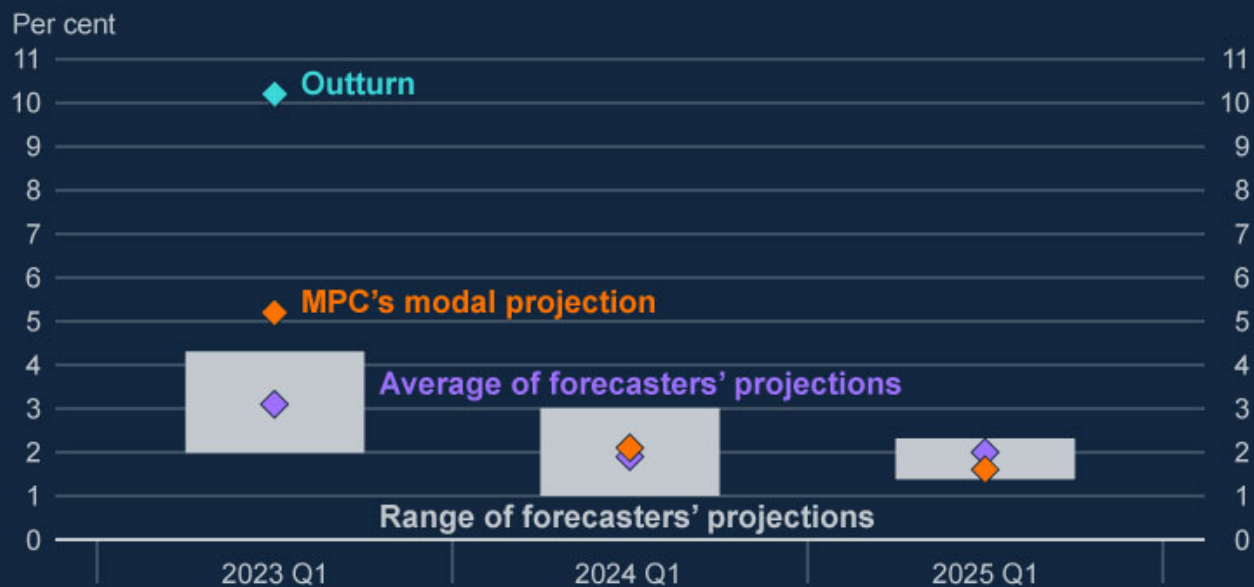


Sources: ONS and Bank calculations.

(a) For the conditioning assumptions on which the February 2022 projections were based, see the footnotes to Table 1.A of the [February 2022 Report](#). See footnotes to Chart 1.3 of this Report for information on how to interpret the fan charts. The final data point of the CPI outturn is 2023 Q2 and the fan extends to 2023 Q4.

### Chart D: Inflation in 2023 Q1 was much higher than the MPC's modal projection, and even higher than the projections of external forecasters

Projections for CPI inflation made at the time of the February 2022 Report and outturn (a)



Sources: Bank of England, ONS and Bank calculations.

(a) Results from the Bank's Survey of Economic Forecasters ahead of the February 2022 Report. These are compared to the MPC's modal projections at that time, which were conditioned on a range of assumptions which may have differed from those made by external forecasters.

## Why have outturns differed from the MPC's February 2022 central projections?

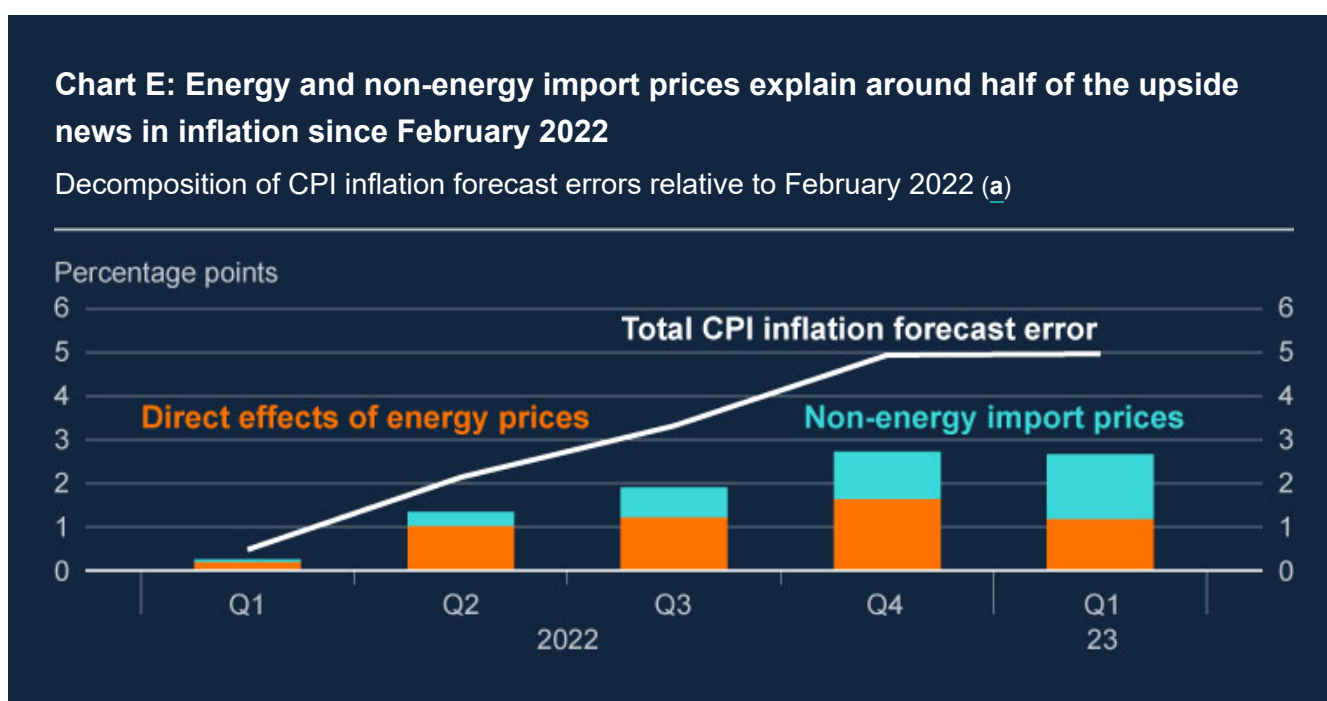
**The direct effects of higher energy prices, combined with higher non-energy import prices, account for around half of the difference between inflation outturns and the February 2022 central projection.**

The February 2022 CPI inflation projection was conditioned on oil prices remaining at around US\$80 per barrel over the forecast period, while gas prices (the purple line in Chart A) were assumed to fall from around 200 pence per therm to around 150 pence over six months and then stay at that level. In the months after Russia's invasion of Ukraine, oil prices rose to over US\$100 a barrel, and by the time of the August 2022 forecast the MPC's conditioning assumption for wholesale gas prices had more than doubled (the orange line in Chart A).

The direct contribution of energy prices, which largely comprise household energy bills and motor fuel prices, to CPI inflation across most of 2022 and 2023 Q1 was over 1 percentage point higher than projected in February 2022 (orange bars in Chart E).

Non-energy import prices have also contributed to CPI inflation being higher than projected in February 2022. That reflects higher-than-expected world export prices combined with a weaker-than-expected sterling exchange rate. Bank staff estimate that non-energy import prices account for around 1½ percentage points of the upside news by 2023 Q1 (aqua bars in Chart E).

In total, these two channels account for around half of the difference between inflation outturns and the February 2022 central projection.



Sources: ONS and Bank calculations.

(a) The total inflation error and direct effects of energy price contributions are based on the difference between the headline CPI inflation data, the contribution of the energy component (ONS code DK9T) and the respective projections consistent with the February 2022 Report. The contributions from non-energy import prices are based on Bank staff estimates.

### Some of the remaining difference between forecasts and outturns reflects the indirect effects of energy prices...

In addition to their direct effects on utilities and fuel prices, higher energy prices have produced additional inflationary pressure via indirect supply chain effects on firms' input costs. As energy is an input to production for nearly all goods and services in the

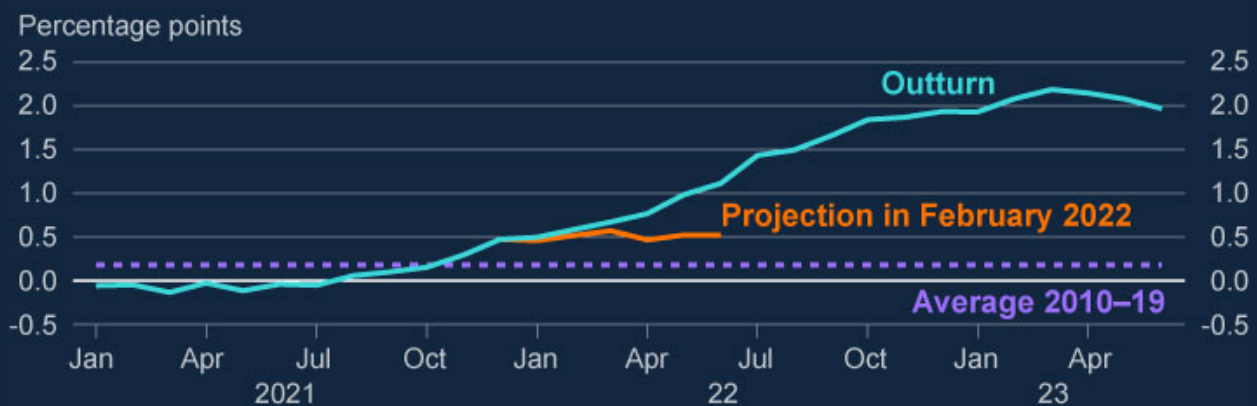
economy, higher energy prices are likely to have increased costs for many firms (see Box B in the [November 2022 Report](#)).

**...which partly explains why food prices are so high, although disruptions to the supply of agricultural products have also played a key role.**

Such indirect effects of higher energy prices are one of the reasons why there has been a substantial increase in food prices, as they have added to the cost of producing, storing and transporting food. Food and non-alcoholic beverage price inflation climbed to a record high of 19.1% in March 2023 and most recently contributed 2 percentage points to headline inflation in June 2023 (Chart F). Upward pressure on food prices has also come from a reduction in the supply of food commodities due to Russia's invasion of Ukraine, and adverse weather conditions.

**Chart F: Food prices have contributed much more to inflation than had been expected in February 2022**

Contribution of food and non-alcoholic beverages to CPI inflation (a)



Sources: ONS and Bank calculations.

(a) This chart shows the contribution of the food and non-alcoholic beverages component (ONS code D7BU) to annual CPI inflation. The final outturn data point is June 2023.

**Inflation has picked up against the backdrop of a tight labour market...**

Over the past 18 months, the labour market has remained tight, with the unemployment rate lower than projected in February 2022. Other indicators of labour market tightness, such as the ratio of vacancies to unemployment, have also been elevated (Chart 2.15).

Part of the tightness observed in the labour market is likely to have been accounted for by weakness in labour supply. As discussed in the [February 2023 Report](#), there had been a notable drop in participation (or ‘higher inactivity’) in the labour market over the past three years.

In addition to weakness in labour supply, labour demand has been resilient despite the slowdown in output growth. Employment growth has generally remained positive across most measures over the past 18 months (Chart 2.12). This could reflect some hoarding of labour by companies to avoid the costs associated with rehiring workers.

The resilience of the labour market may partly help to explain why recent GDP outturns, while weaker than the February 2022 projections, have been stronger than the MPC’s central projections between August 2022 and February 2023 (Chart B). Part of that latter news also reflects the recent fall in energy prices which has reduced the drag on real incomes and consumer spending.

In February 2022, the MPC’s central projection was that a margin of excess supply would open up by the end of the year. But, in part reflecting the labour market remaining tight, the economy is estimated to have been operating with a significant degree of excess demand since then, despite the slowdown in output growth.

**...which is likely to have contributed to more persistent second-round effects in domestic wage and price developments.**

The tightness of the labour market and the presence of excess demand helps to explain why the response of inflation to the series of adverse external inflationary shocks has persisted, even as the direct effects of higher energy prices have started to fade. The second-round effects generated by changes in domestic prices and wages as a result of these external cost shocks are likely to have led to some ‘intrinsic’ inflation persistence in the UK ([Pill \(2023\)](#)).

Against the backdrop of a tight labour market, annual growth in private sector pay has been significantly higher than expected in the Bank’s forecasts in February 2022. In a tight labour market, firms are more likely to agree to higher pay settlements for their employees. So when those employees observe higher prices for the goods and services they buy, as well as a fall in their real incomes, they may feel that attempts to offset these losses through higher nominal pay are more likely to be successful ([Bruno and Sachs \(1985\)](#) and [Layard et al \(2005\)](#)). That may be particularly true if they think higher inflation is likely to persist. Models of wage growth indicate that inflation expectations have been a key factor driving nominal pay growth higher over the past year.



Pay growth has also been higher than the MPC's recent projections (Section 2.5). This persistence in wage growth may be consistent with the existence of potential non-linearities in the relationship between wages and labour market slack. In other words, there is greater wage growth when spare capacity is limited, which may in turn be affecting the degree of inflation persistence. Indeed, Bank staff analysis, which allows for these types of non-linear relationships, suggests that pay growth had played an important role in pushing up services prices recently (Chart 3.9 of the [May 2023 Report](#)).

There is also some evidence to indicate that recent inflationary pressures have influenced firms' price-setting behaviour, which may be contributing to the persistence of higher inflation. If companies sense that their customers will bear higher prices, they may be more willing to pass higher labour and other input costs on to them. As discussed in Section 3 of the May Report, around 60% of firms in DMP Surveys conducted earlier this year reported that in the high-inflation environment, they were changing prices in response to events or thresholds, rather than at fixed time intervals (see Chart 3.3 of the [May 2023 Report](#)).

**The MPC has judged that there have been significant upside risks to the inflation outlook for some time.**

In recent Reports, the MPC has judged that there have been significant upside risks to the inflation outlook, which has pushed up the mean projection relative to the modal projection. These risks reflect the possibility that the second-round effects of external cost shocks on inflation may take longer to unwind than they did to emerge. The MPC's latest projections and the balance of risks around these are set out in Section 1.

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## Glossary and other information

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### Glossary of selected data and instruments

AWE – average weekly earnings.

CPI – consumer prices index.

CPI inflation – inflation measured by the consumer prices index.

CPIH – consumer prices index including owner-occupiers' housing costs.

DMP – Decision Maker Panel.

ERI – exchange rate index.

GDP – gross domestic product.

HICP – harmonised index of consumer prices.

LFS – Labour Force Survey.

M4 – UK non-bank, non-building society private sector's holdings of sterling notes and coin, and their sterling deposits (including certificates of deposit, holdings of commercial paper and other short-term instruments and claims arising from repos) held at UK banks and building societies.

OIS – overnight index swap.

PCE – personal consumption expenditure.

PMI – purchasing managers' index.

RPI – retail prices index.

### Abbreviations

APF – Asset Purchase Facility.

BTL – buy-to-let.

CCS – Credit Conditions Survey.

CIPS – Chartered Institute of Purchasing and Supply.

CMA – Competition and Markets Authority.

ECB – European Central Bank.

FCA – Financial Conduct Authority.

FOMC – Federal Open Market Committee.

GfK – Gesellschaft für Konsumforschung, Great Britain Ltd.

IMF – International Monetary Fund.

ISA – individual savings account.

LTV – loan to value.

MPC – Monetary Policy Committee.

MTIC – missing trader intra-community.

NLW – National Living Wage.

OBR – Office for Budget Responsibility.

Ofgem – Office of Gas and Electricity Markets.

ONS – Office for National Statistics.

PAYE – Pay As You Earn.

PPI – payment protection insurance.

PPP – purchasing power parity.

QE – quantitative easing.

QT – quantitative tightening.

REC – Recruitment and Employment Confederation.

RICS – Royal Institution of Chartered Surveyors.

RTI – Real Time Information.

S&P – Standard & Poor's.

SME – small and medium-sized enterprise.

WEO – IMF World Economic Outlook.

## **Symbols and conventions**

Except where otherwise stated, the source of the data used in charts and tables is the Bank of England or the Office for National Statistics (ONS) and all data, apart from financial markets data and results from the Decision Maker Panel (DMP) Survey, are seasonally adjusted.

n.a. = not available.

Because of rounding, the sum of the separate items may sometimes differ from the total shown.

On the horizontal axes of graphs, larger ticks denote the first observation within the relevant period, eg data for the first quarter of the year.