Bank of England

Monetary Policy Report

Monetary Policy Committee

February 2023

Monetary policy at the Bank of England

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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PowerPoint™ versions of the Monetary Policy Report charts and Excel spreadsheets of the data underlying most of them are available at **www.bankofengland.co.uk/monetary-policy-report/2023/february-2023**.

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On 15 March, the Indeed Wage Tracker line in Chart 2.23 was corrected.

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Monetary Policy Summary

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 1 February 2023, the MPC voted by a majority of 7–2 to increase Bank Rate by 0.5 percentage points, to 4%. Two members preferred to maintain Bank Rate at 3.5%.

Global consumer price inflation remains high, although it is likely to have peaked across many advanced economies, including in the United Kingdom. Wholesale gas prices have fallen recently and global supply chain disruption appears to have eased amid a slowing in global demand. Many central banks have continued to tighten monetary policy, although market pricing indicates reductions in policy rates further ahead.

UK domestic inflationary pressures have been firmer than expected. Both private sector regular pay growth and services CPI inflation have been notably higher than forecast in the November Monetary Policy Report. The labour market remains tight by historical standards, although it has started to loosen and some survey indicators of wage growth have eased, alongside a gradual decline in underlying output. Given the lags in monetary policy transmission, the increases in Bank Rate since December 2021 are expected to have an increasing impact on the economy in the coming quarters.

Near-term data developments will be crucial in assessing how quickly and to what extent external and domestic inflationary pressures will abate. As set out in the accompanying February Monetary Policy Report, the MPC's updated projections show CPI inflation falling back sharply from its current very elevated level, of 10.5% in December, in large part owing to past increases in energy and other goods prices falling out of the calculation of the annual rate. Annual CPI inflation is expected to fall to around 4% towards the end of this year, alongside a much shallower projected decline in output than in the November Report forecast.

In the latest modal forecast, conditioned on a market-implied path for Bank Rate that rises to around 4½% in mid-2023 and falls back to just over 3¼% in three years' time, an increasing degree of economic slack, alongside falling external pressures, leads CPI inflation to decline to below the 2% target in the medium term. There are considerable uncertainties around this medium-term outlook, and the Committee continues to judge that the risks to inflation are skewed significantly to the upside.

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. The economy has been subject to a sequence of very large and overlapping shocks. Monetary policy will ensure that, as the adjustment to these shocks continues, CPI inflation will return to the 2% target sustainably in the medium term. Monetary policy is also acting to ensure that longer-term inflation expectations are anchored at the 2% target.

The Committee has voted to increase Bank Rate by 0.5 percentage points, to 4%, at this meeting. Headline CPI inflation has begun to edge back and is likely to fall sharply over the rest of the year as a result of past movements in energy and other goods prices. However, the labour market remains tight and domestic price and wage pressures have been stronger than expected, suggesting risks of greater persistence in underlying inflation.

The extent to which domestic inflationary pressures ease will depend on the evolution of the economy, including the impact of the significant increases in Bank Rate so far. There are considerable uncertainties around the outlook. The MPC will continue to monitor closely indications of persistent inflationary pressures, including the tightness of labour market conditions and the behaviour of wage growth and services inflation. If there were to be evidence of more persistent pressures, then further tightening in monetary policy would be required.

Looking further ahead, the MPC will adjust Bank Rate as necessary to return inflation to the 2% target sustainably in the medium term, in line with its remit.

1: The economic outlook

Since the MPC's previous forecast in November, wholesale energy prices have fallen significantly, but domestic inflationary pressures have been firmer than expected. Services CPI inflation rose to a 30-year high of 6.8% in December, while nominal annual private sector regular pay growth increased to 7.2% in the three months to November, 0.7 percentage points higher than expected in the November Report. Output is now expected to decline by less than previously expected over the coming year. Even as a margin of slack is projected to open up in the economy, the Committee judges there to be considerable uncertainties around the extent and timing of the expected reduction in domestic, and potentially more persistent, inflationary pressures. In the MPC's central projections, CPI inflation declines below target in the medium term, but there continue to be significant upside risks around these projections. Whether or not those risks crystallise will be a key determinant of the economic outlook over the rest of this year.

Following the conclusion of its recent stocktake (Section 3), the Committee judges that the level of estimated potential supply has been reduced, such that the growth of potential supply is likely to be weak by historical standards over the forecast period, averaging almost 1% per year.

In the Committee's central projection, GDP is projected to fall slightly throughout 2023 and 2024 Q1, as still-high energy prices and the path of market interest rates weigh on spending. This forecast is consistent with the technical definition of a recession, which is at least two consecutive quarters of falling output. But this is a much shallower profile for the decline in output than in the November Report, in part reflecting a reassessment of the outlook for consumption in light of the recent strength in the labour market, as well as the decline in wholesale energy prices. Four-quarter GDP growth picks up to almost 1% by the end of the projection, although growth is expected to remain well below pre-pandemic rates.

Although it has started to loosen, the labour market has remained tight and the UK economy is judged to have been in excess demand over recent quarters. While supply is expected to remain weak, continued headwinds to demand lead to an increasing degree of economic slack emerging in the Committee's central projection from 2023 Q2. The unemployment rate is projected to rise to around 5¼% in the medium term.

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

	2023 Q1	2024 Q1	2025 Q1	2026 Q1
GDP (c)	-0.3 (-0.6)	-0.7 (-2.0)	0.2 (0.1)	0.9
CPI inflation (d)	9.7 (10.1)	3.0 (4.0)	1.0 (1.2)	0.4
LFS unemployment rate	3.8 (3.8)	4.4 (5.2)	5.0 (6.0)	5.3
Excess supply/**Excess demand** (e)	0 (-¼)	-1½ (-2½)	-2 (-3)	-2
Bank Rate (f)	3.8 (4.3)	4.3 (5.1)	3.6 (4.7)	3.3

(a) Modal projections for GDP, CPI inflation, LFS unemployment and excess supply/excess demand. Figures in parentheses show the corresponding projections in the November 2022 Monetary Policy Report.
(b) Unless otherwise stated, the projections shown in this section 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 – February 2023**'.
(c) Four-quarter growth in real GDP.
(d) Four-quarter inflation rate.
(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, which have moved lower since November, as captured in the 15-day average of forward interest rates to 24 January (Chart 2.7). In the United Kingdom, the market-implied path for Bank Rate now peaks at around 4½% in 2023 Q3, down from nearly 5¼% at the time of the November Report, and ends the forecast period at just over 3¼%.
- A path for the sterling effective exchange rate index that is nearly 2% stronger on average than in the November Report, and 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. As explained in detail in Box B, the Government has, since the November Report, set out its fiscal plans in the Autumn Statement and announced further energy support for businesses in January. In the Autumn Statement, the Government confirmed that the Energy Price Guarantee (EPG) for households would be adjusted, such that a household with typical energy use will pay a maximum of £3,000 per year from April 2023 until the end of March 2024. This is an increase in the ceiling from the £2,500 per year previously announced as in place until March 2023.
- Wholesale energy prices that follow their respective futures curves over the whole forecast period, as was the case in the November Report. Although volatile, spot gas and oil prices have declined since November and the gas futures curve has also fallen markedly (Chart 2.3). Under this lower path for wholesale energy prices, it is assumed that the EPG will cease to bind on household energy prices from 2023 Q3 onwards. Instead, prices are assumed to evolve in line with Bank staff estimates of the Ofgem price cap. Significant uncertainty remains around the outlook for wholesale energy prices, and the Committee will keep its wholesale energy price conditioning assumption under review.

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

	Average 1998–2007	Average 2010–19	Average 2020–21	2022	2023	2024	2025
Bank Rate (c)	5.0	0.5	0.1	2.8 (3)	4.4 (5.2)	3.7 (4.7)	3.4 (4.4)
Sterling effective exchange rate (d)	100	82	80	78 (77)	78 (77)	78 (76)	77 (75)
Oil prices (e)	39	78	62	88 (92)	81 (81)	77 (76)	73 (73)
Gas prices (f)	29	52	169	201 (231)	189 (356)	174 (265)	136 (195)
Nominal government expenditure (g)	7½	2¼	9	3½ (3½)	3½ (2¾)	2¼ (2½)	1¾ (3½)

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 November 2022 Monetary Policy Report.
(b) Financial market data are based on averages in the 15 working days to 24 January 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, based on monthly Brent futures prices.
(f) Pence per therm, 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 November 2022 Economic and Fiscal Outlook. Historical data based on NMRP+D7QK.

1.2: Key judgements and risks

Key judgement 1: the level of potential output is being held back by a series of adverse economic shocks. Supply growth is expected to be weak by historical standards over the forecast period.

Potential supply determines the level of output the economy can sustain without generating excessive inflationary pressures. Since the previous Monetary Policy Report, the Committee has concluded its supply stocktake (Section 3), which has fed into the construction of its latest economic projections.

The economy has been hit by a series of significant economic shocks over recent years: the change in the UK's trading relationship with the European Union, the Covid pandemic and developments in global energy prices relating to Russia's invasion of Ukraine. These factors have held back both potential productivity and labour supply, and hence the overall supply capacity of the economy.

The move to a new trading relationship with the EU has been expected to weigh on potential productivity. Around the time that the UK left the EU, the MPC judged that increased barriers to trade could mean that, all else equal, the level of productivity would be around 3¼% lower in the long run given productivity's empirical relationship with openness (Box 1 of the **November 2019 Report**). At the time of the MPC's previous supply stocktake in November 2021, it was expected that a sizeable proportion of this effect would be weighing on productivity by the end of the current forecast period. Although there remains considerable uncertainty about how to interpret the latest data, Bank staff analysis suggests that EU goods trade volumes have fallen by more than previously expected (Section 3.3). As a result, in the MPC's current forecast, more of the previously estimated effect of EU withdrawal on productivity takes effect by the end of the forecast period than was the case previously.

Business investment has been very subdued for a number of years (Chart 3.7), weighing on potential labour productivity. Capital spending growth stalled after 2016. The economic uncertainty associated with the pandemic, and more recently the global energy price shock, is also likely to have weighed on business investment. More generally, the direct and indirect effects of the pandemic are judged to be weighing a little on the level of potential productivity by the end of the forecast period (Section 3.3).

The unusually large size of the energy price shock, and therefore the scale of adjustment required by businesses, could lead to broader effects on potential productivity beyond the usual indirect effects via, for example, lower investment (Section 3.3). These could occur if large increases in energy prices have led to disruption or to lower utilisation of energy-intensive capital. The MPC judges that some weakness in potential productivity from these channels is likely to be occurring, but the majority of this direct effect of high energy prices on potential supply is expected to dissipate over the remainder of the forecast period.

Labour market inactivity remains materially higher than before the pandemic, with the increase having been much sharper and larger than implied by the long-running demographic trend through an ageing population alone. Many of the people who have left the labour force since the start of the pandemic were aged 50 to 64, suggesting that early retirement could be playing a significant role. Much of the decline in aggregate participation has also been from those stating subsequently they are not active in the labour market owing to long-term sickness. More broadly, there appears to be increasing detachment among those who have left the labour market recently (Section 3.3). Reflecting these factors, the MPC has judged as part of this stocktake that the fall in measured participation has also been reflected in potential participation and hence weaker potential labour supply. The effects of the pandemic on potential participation are assumed to start to fade, but some effect persists beyond the end of the forecast period.

Overall, the Committee judges that this constellation of economic shocks has already weighed on the level of estimated potential supply materially and will continue to weigh on it over the forecast period. In the MPC's February projections, potential supply growth is expected to average almost 1% per year over 2023–25, just over half of its growth rate in the decade before the pandemic (Table 3.A). That is accounted for by very weak projected potential labour supply growth, including the adverse impact of long-running demographic trends. Average growth in estimated potential productivity over the 2023–25 period is expected to be broadly similar to 2010–19, but below the rate that the economy might otherwise have achieved in the absence of the shocks it is facing.

Relative to the projections at the time of the Committee's previous stocktake in November 2021, the level of estimated potential supply is expected to be around 4½% weaker by the end of the forecast period. This reflects a number of factors, including: the extent to which weakness in external goods trade and in business investment appear likely to be affecting potential productivity; the MPC's updated judgement on lower potential labour market participation; and the direct and indirect effects of the energy price shock on supply.

There are risks in both directions around the projection for supply growth.

As supply cannot be observed directly, the Committee's estimates of potential output and its components, and the relative weights of different economic shocks in explaining supply's recent and prospective weakness, are inherently uncertain. In particular, it remains very hard to disentangle the effects on potential productivity from the UK leaving the EU, from the pandemic and from the energy price shock. It is also difficult to distinguish the extent to which weakness in labour market activity is persistent or temporary, and the extent to which it may be having an impact on spare capacity in the economy.

There are risks in both directions around the MPC's projection for supply growth. On the upside, the Committee's latest forecast is materially weaker than prior to the pandemic and its previous stocktake, and is also notably weaker than other external forecasters including the Office for Budget Responsibility's latest projections. Although the MPC's central projection now includes some near-term weakness in potential productivity linked to the direct effect of high energy prices, it remains possible that changes to measured productivity as a result of the energy price shock are purely cyclical responses affecting output but with no underlying effect on potential supply. The outlook for potential labour market participation could also be stronger than the Committee expects. For example, cost of living pressures and reduced wealth for some households may encourage some people, including those that may have retired earlier than they would otherwise have done owing to the pandemic, to return to the labour market.

On the downside, there could be a larger or more persistent direct effect of high energy prices on potential productivity than the Committee now expects. Or it is possible that weakness in potential labour market participation related to the pandemic and long-term sickness persists for longer than the MPC has assumed in its latest central projection, even if cost of living pressures might otherwise encourage these people to re-enter the labour market.

Key judgement 2: high energy prices and the path of market interest rates continue to weigh on GDP, both at home and abroad, and output is expected to fall slightly throughout 2023 and 2024 Q1. This is nevertheless a much shallower decline than in November, in part reflecting the MPC's reassessment of the outlook for consumption in light of the recent strength of the labour market, as well as the decline in wholesale energy prices.

After falling by 0.3% in 2022 Q3, UK GDP is expected to have grown by 0.1% in Q4. Underlying output, calculated as market sector output adjusted for the estimated effects of additional bank holidays, is expected to have fallen in Q4 albeit by less than in Q3. GDP is then expected to fall by 0.1% in 2023 Q1, consistent with the steer from most business surveys.

The stagnation in GDP around the turn of the year in part reflects the squeeze on real incomes, and hence household and business spending, from past increases in global energy, tradable goods and food prices. The significant fall in wholesale, and prospective household and business, energy prices since the November Report (Section 1.1) reduces the drag on GDP from the real income squeeze. The path of energy prices is still historically high, nevertheless, and continues to put some downward pressure on growth over the first half of the MPC's forecast period relative to what it would have been in the absence of an energy price shock.

Weakness in GDP also reflects the pass-through of past increases in Bank Rate and the market-implied path underpinning the forecast (Section 1.1). Given the lags in monetary policy, the rise in Bank Rate since December 2021 is expected to have an increasing impact on the economy in coming quarters. The decline in the market path for Bank Rate over recent months nevertheless pushes up on activity relative to the November Report projections. Rates on new mortgages have declined since November but remain materially higher than in mid-2022. Since November, the FTSE All-Share index has risen and sterling corporate bond spreads have declined (Section 2.1).

The MPC's November forecast incorporated the announcements made by the Chancellor of the Exchequer up to and including 17 October. As set out in Box B, the Autumn Statement announced some additional fiscal support in the near term, including targeted cost of living support in addition to the extended Energy Price Guarantee scheme, cuts in business rates, and increased spending on health, social care and education. From fiscal year 2024–25, planned fiscal policy will tighten by progressively larger amounts, with net tax rises accounting for around half of this tightening and reductions in both departmental current and capital spending accounting for the other half. Overall, Bank staff estimate that these additional policy measures will, relative to what was assumed in the November Report, increase the level of GDP by around 0.3% on average in the first year of the forecast, but reduce the level of GDP by 0.4% on average in the final year of the forecast.

Taking account of all announced government plans, there is some near-term support to GDP growth from fiscal policy, but policy is expected to tighten over the final two years of the MPC's forecast period.

The weakness in UK demand growth over the projection also reflects a subdued outlook for the global economy, although that outlook is broadly unchanged compared to November. Rising Covid cases have been weighing on activity in China owing to voluntary social distancing, but growth is then expected to recover as disruption eases. In the MPC's central projection, annual UK-weighted world GDP growth is projected to slow from 3% in 2022, to 1% in 2023, before rising thereafter but to below pre-pandemic rates (Table 1.D).

In addition to these factors affecting GDP growth, the Committee has reassessed its outlook for spending in the economy. In light of the recent strength in the labour market, the Committee judges that the expected weakening in labour demand is more likely than usual to be reflected in a reduction in vacancies than an increase in redundancies. This effect, consistent with some hoarding of labour by companies and lower perceptions of the risk of job losses, is likely to result over time in lower precautionary saving by households than previously assumed. Together, these are projected to lead to stronger consumption and output, and a smaller increase in the unemployment rate (Key judgement 3), than would otherwise be the case.

In the Committee's central projection, GDP is projected to fall slightly throughout 2023 and 2024 Q1, as high energy prices and the path of market interest rates weigh on output. The path of demand also reflects the weakness of the potential supply projection, including the extent to which that path is accounted for by anticipated weakness in permanent incomes. This forecast is consistent with the technical definition of a recession, which is at least two consecutive quarters of falling output. But this is a much shallower profile for the decline in output than in the equivalent November Report projection and compared with previous UK recessions (Chart 1.2). Calendar-year GDP growth is expected to be –½% in 2023 and –¼% in 2024 (Table 1.D). Four-quarter GDP growth picks up to almost 1% by the end of the projection (Chart 1.1), although growth is expected to remain well below pre-pandemic rates.

As part of a periodic review, Bank staff have updated in this Report the uncertainty parameters determining the widths of the GDP growth, unemployment and CPI inflation fan charts. These parameters have been calibrated to match the historical forecast errors since 2004 for each variable at different horizons, including putting a reduced weight on errors during the pandemic, given its exceptional nature. As a result, the width of the unemployment fan chart has been reduced significantly over much of the forecast period, while the widths of the GDP growth (Chart 1.1) and CPI inflation fan charts are slightly narrower in the near term.

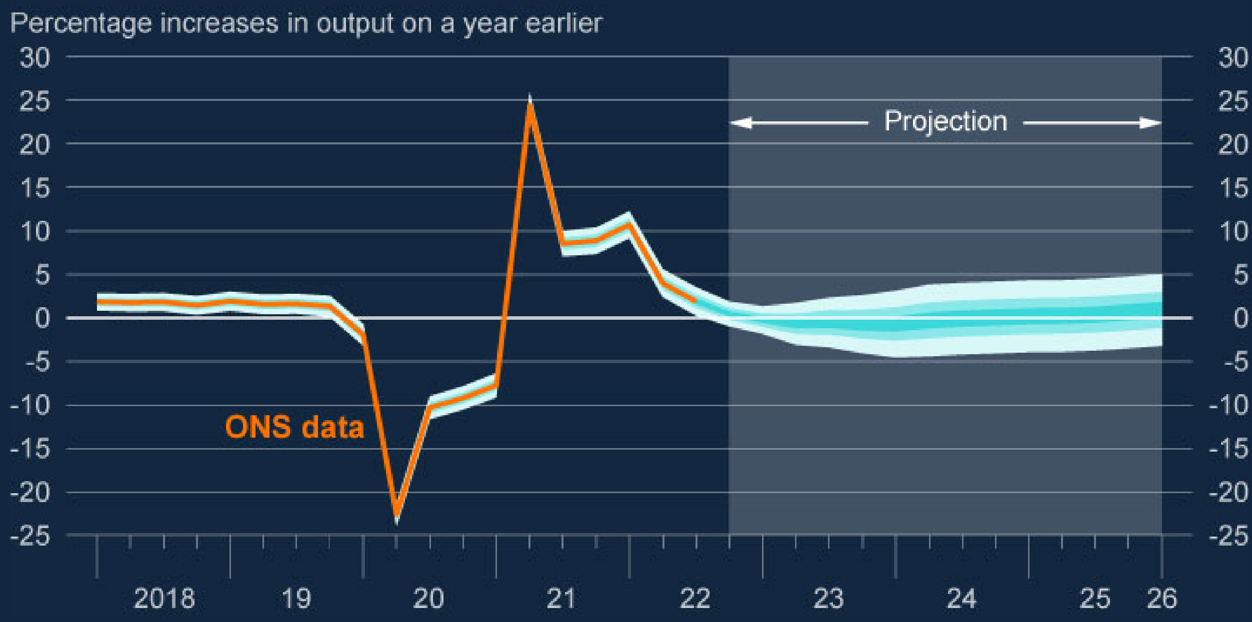
Within the components of GDP, calendar-year household spending is expected to fall by ½% in 2023 but to rise by ½% in 2024 and in 2025 (Table 1.D), a stronger profile than in the November Report owing to the Committee's reassessment of the feedback between consumption and the strong starting point of the labour market, as well as the recent decline in wholesale energy prices. Real post-tax household disposable income is projected to follow a similar but more amplified pattern, falling by ½% this calendar year despite some boost from fiscal transfers, but rising by 1½% in 2024. The household saving ratio is nevertheless expected to be broadly flat over much of the forecast period, following some volatility around the turn of this year reflecting movements in unobserved pension components of non-labour income related to the period of financial market dysfunction last autumn.

Timely indicators suggest that house prices are likely to have fallen over recent months, after several years of strength. Alongside falling prices, indicators of housing activity such as mortgage approvals have declined sharply. Weakness in the economic outlook, combined with the impact of higher mortgage rates, is also expected to weigh on housing investment. It falls by over 6% this year, having risen by 8½% in 2022. Housing investment is expected to weaken further in 2024, falling by 8½%, before stabilising in 2025 (Table 1.D).

In part reflecting the series of shocks affecting the economy (Key judgement 1) and the extent to which companies are now assumed to hoard labour over the forecast period, business investment is expected to fall by 5½% in 2023 and by a further 5¾% in 2024, before recovering slightly in 2025 (Table 1.D).

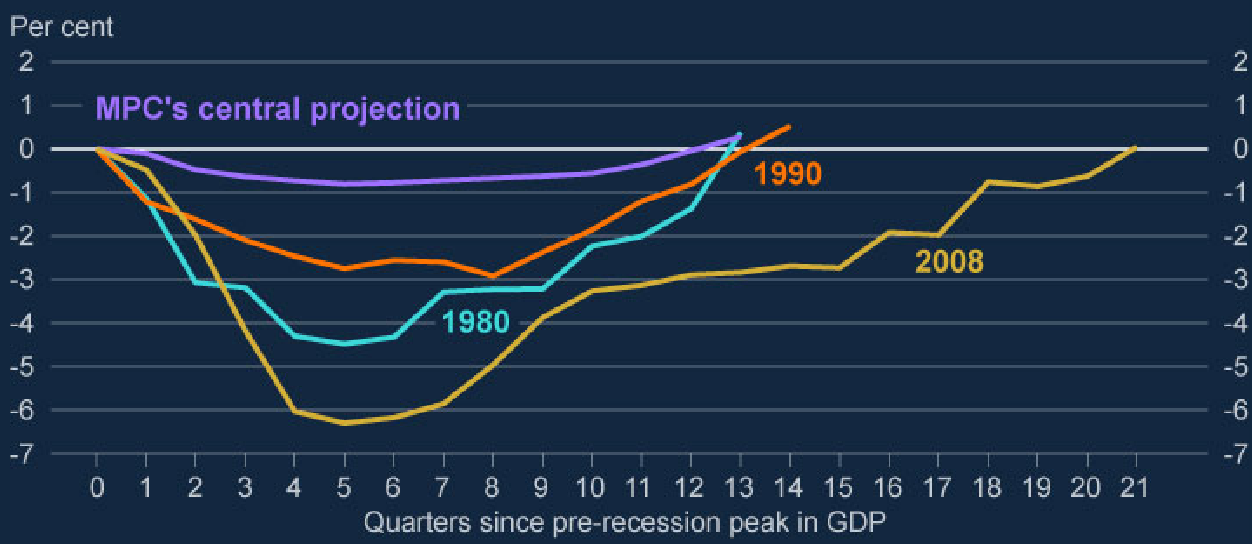
In the GDP projection conditioned on the alternative assumption of constant interest rates at 4%, growth is slightly weaker than in the MPC's forecast conditioned on market rates.

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



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.

Chart 1.2: Changes in GDP since pre-recession peak in past recessions and the MPC's February 2023 projection (a)



Sources: ONS and Bank calculations.

(a) Recessions are defined as at least two consecutive quarters of negative GDP growth. Past recessions shown began in 1980 Q1, 1990 Q3 and 2008 Q2. The MPC's projections start in 2022 Q4.

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

There are risks in both directions around the central projection for household spending and hence GDP. Spending could be stronger than expected if some households run down their savings to a greater extent than projected, although the Committee's new judgement to take account more explicitly in its GDP projection of the strong starting point of the labour market may limit the scale of this risk relative to previous projections. Nevertheless, as set out in the Annex of this Report, external forecasters' medium-term projections for activity remain materially stronger than the MPC's. Conversely, demand could weaken by more than expected if some people become more worried about their job security and build up their savings to a greater extent. The recent resilience of the labour market could also indicate a change in the standard relationship between employment and GDP, rather than implying a stronger outlook for both as the Committee is now assuming.

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

Key judgement 3: the UK economy is judged to have been in excess demand over recent quarters. Although supply is expected to remain weak, continued headwinds to demand are projected to lead to an increasing degree of economic slack emerging from 2023 Q2.

A range of indicators suggest there has been a significant margin of excess demand in the economy over recent quarters. In the Committee's latest projections, that is accounted for primarily by a higher than usual degree of capacity utilisation within companies. As a counterpart to the Committee's judgement to revise down the path of potential labour market participation (Key judgement 1), however, the level of capacity utilisation is judged to be contributing somewhat less to aggregate excess demand over recent quarters than in the November Report.

Despite signs of a stagnation in employment and an easing in recruitment difficulties, the labour market has remained tight. Although vacancies have fallen, the stock of vacancies has remained high relative to the number of unemployed people. The unemployment rate was 3.7% in the three months to November, below the MPC's assessment of the long-term equilibrium rate of unemployment, which stands at just above 4%, unchanged following the Committee's latest stocktake (Section 3.3). The medium-term equilibrium rate of unemployment, which is also affected by cyclical factors such as changes in the mix of jobs and job seekers, and is more relevant for determining wage pressures, is estimated to have been at a similar level to the long-term rate over recent quarters, having previously risen above the long-term rate during the pandemic.

Although supply is expected to remain weak, continued headwinds to demand lead to an increasing degree of economic slack emerging in the Committee's projections from 2023 Q2. 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. Many of the Agents' contacts report that they are reluctant to actively reduce headcount, and intend to accommodate weaker demand through attrition or by reducing working hours. That is consistent with capacity utilisation within companies falling, to below its usual level, and with average hours worked declining to below its equilibrium level. As a result, other labour market indicators are expected to remain relatively tight in the near term. In the MPC's central projection, the unemployment rate is projected to rise modestly, to 4.3%, by 2023 Q4.

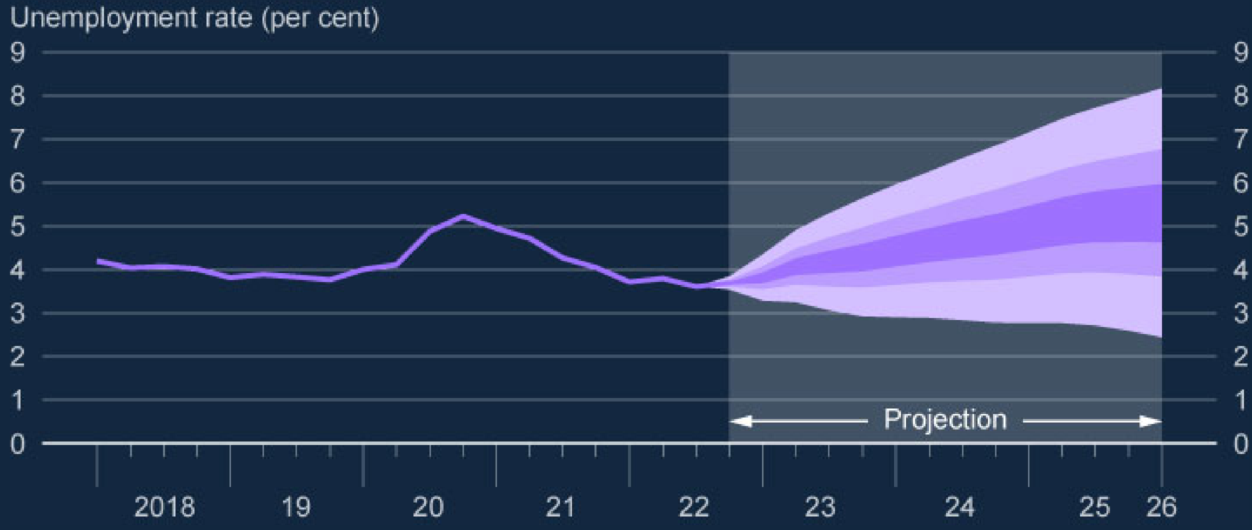
Unemployment is nevertheless expected to increase over the remainder of the forecast period, with the jobless rate rising to around 5¼% (Chart 1.3). Even though this is accompanied by a rise in the medium-term equilibrium rate of unemployment, owing to the cyclical effects of the prolonged downturn, the increase in the actual unemployment rate leads to a widening degree of spare capacity in the labour market.

Overall, the output gap is expected to widen significantly, to around 2% of potential GDP by the end of the forecast period (Table 1.A), with nearly half of that slack comprised of spare capacity within companies rather than in the labour market. Such a composition of the output gap is unusual relative to previous recessionary periods, but is consistent with the projected downturn being very shallow in comparison.

Both aggregate spare capacity and the unemployment rate increase by less in the Committee's latest projections than in the November Report. This reflects the lower conditioning paths for energy and market interest rates, but is also accounted for by the MPC's reassessment of the feedback between consumption and the strong starting point of the labour market (Key judgement 2).

In projections conditioned on the alternative assumption of constant interest rates at 4%, the unemployment rate rises by slightly more in the medium term than in the MPC's forecast conditional on market rates.

Chart 1.3: 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 2022 Q4, a quarter earlier than for CPI inflation. That is because Q4 is a staff projection for the unemployment rate, based in part on data for October and November. The unemployment rate was 3.7% in the three months to November, and is also projected to be 3.7% in Q4 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.

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

Although the Committee judges that the medium-term equilibrium rate of unemployment is currently higher than the measured jobless rate, it is possible that there has been more persistence in labour market frictions and mismatch than assumed in the MPC's central projection, pushing up on the equilibrium rate further. This would suggest that the labour market has been even tighter than the Committee has assumed and would be consistent with greater upward pressure on wage growth (Key judgement 4).

The labour market could remain tight for longer than assumed for a number of other reasons, including the upside risks around the outlook for demand themselves (Key judgement 2). Conversely, the labour market could loosen more rapidly than assumed, again including because of the downside risks to demand themselves.

Key judgement 4: headline inflation will continue to fall as pressures from energy and other external costs ease. But domestic, and potentially more persistent, inflationary pressures are likely to remain strong over the next few quarters and it is uncertain how quickly and to what extent they will abate. In the central projection, the increasing degree of economic slack, alongside falling external pressures, leads CPI inflation to decline to below the 2% target in the medium term, but the Committee continues to judge that the risks to inflation are skewed significantly to the upside.

Twelve-month CPI inflation fell to 10.5% in December, while core CPI inflation, excluding energy, food, beverages and tobacco, remained at 6.3%. Recent outturns for headline CPI have been slightly below the near-term projections in the November Report. CPI inflation is projected to continue to decline gradually during the first half of this year as base effects take hold (Section 2.4).

Although the introduction of the EPG has put a ceiling on household energy prices since October, the direct contribution of energy has remained the largest component of the overshoot in CPI inflation relative to the 2% target (Chart 2.19). As outlined in Section 1.1, the MPC's latest projections assume that the adjusted EPG continues to bind until 2023 Q2. Thereafter, average household energy bills evolve in line with Bank staff estimates of the Ofgem price cap, and below the EPG ceiling, given the significant fall in wholesale futures curves since the November Report. The direct contribution of energy prices to CPI inflation is expected to fall steadily towards zero throughout 2023 and to turn negative in the medium term (Chart 1.5), reflecting the downward slopes of futures curves.

Since the November Report and consistent with near-term developments in UK core goods CPI inflation (Chart 2.20), there have continued to be signs that other global price pressures are falling back. Indicators of supply chain disruption outside China and global shipping costs have eased further. Bank staff expect the disruption stemming from the latest Covid outbreak in China to temporarily slow the easing of world export price inflation a little in the near term. However, further ahead, the removal of many restrictions by the Chinese authorities reduces the likelihood of repeated lockdowns and associated supply chain disruption. In this forecast, four-quarter world export price inflation is also projected to decline sharply over the next year and to turn negative in mid-2023, albeit from an elevated starting level. The recent appreciation of the sterling exchange rate (Section 1.1) puts downward pressure on UK import price inflation throughout the projection relative to the November Report.

In contrast to the easing in external cost pressures, services CPI inflation rose to a 30-year high of 6.8% in December, while nominal annual private sector regular pay growth increased to 7.2% in the three months to November, 0.7 percentage points higher than expected in the November Report. On a three month on three month annualised basis, pay growth has fallen back from its recent peak of 8.9% in July to 7.2% in November.

Bank staff project that core services inflation will rise somewhat further in the near term (Chart 2.20), consistent with the strength in wages and other costs facing service-sector companies. Private sector regular pay growth is expected to flatten out in coming months, as CPI inflation falls back a little and the tightness in the labour market begins to ease. That projection is broadly consistent with the results of the latest Agents' pay survey, which shows that companies expect pay settlements in 2023 to be just under 6% on average, broadly similar to the average pay settlement made in 2022, and that settlements in the first half of 2023 are expected to be lower than those made in the second half of 2022 (Box C).

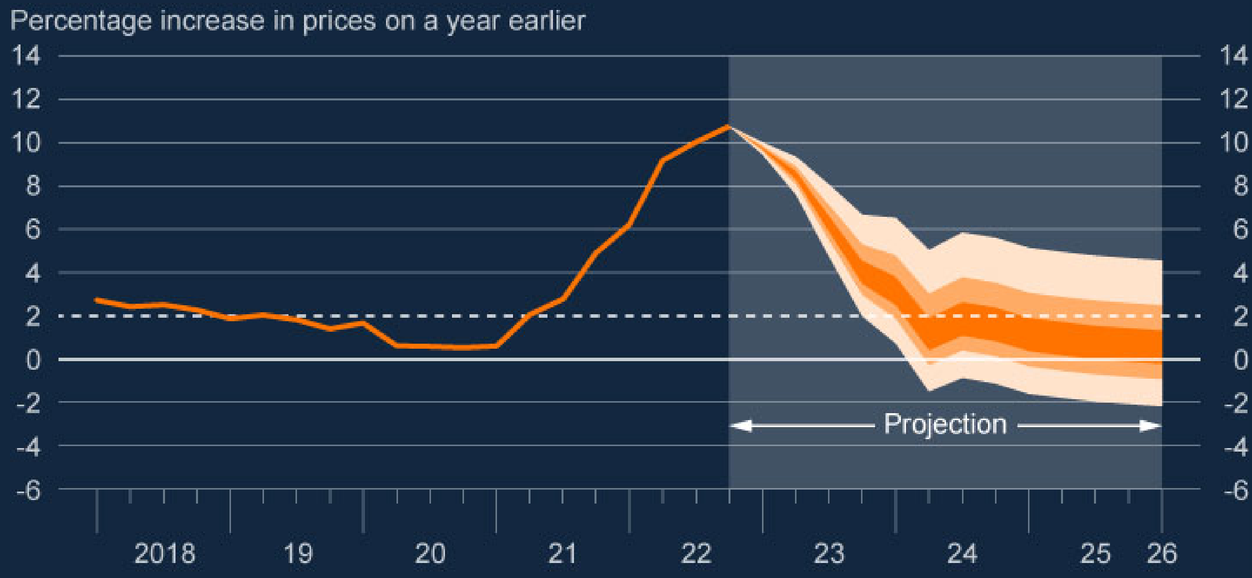
The Committee has retained its judgement from the August and November 2022 Reports that, owing to the pressures from pay growth, CPI inflation is a little higher throughout the projection than would otherwise be the case. For example at the two-year horizon, this judgement adds just over a quarter of a percentage point to the inflation central projection. The less negative output gap profile in the latest forecast also pushes up on CPI inflation over much of the forecast period, relative to the November Report.

CPI inflation is projected to fall sharply, to just under 4% by the end of 2023 (Chart 1.4 and Table 1.C), reflecting the rapid decline in global price pressures and the greater than previously expected fall in the contribution of household energy prices to CPI inflation. Domestic inflationary pressures are likely to remain strong over the next few quarters. Annual private-sector regular pay growth is expected to decline from the spring, to around 5% by the end of this year. There are, however, considerable uncertainties around the extent and timing of the reduction in domestic inflationary pressures.

In the MPC's central projection conditioned on the path of market interest rates, 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 continuing weakness in the assumed path of energy price inflation (Chart 1.5). At the two-year horizon, CPI inflation falls to 1.0% and, at the three-year horizon, inflation is projected to be 0.4% (Table 1.C).

CPI inflation is expected to be broadly similar in the medium term to the equivalent November Report projection. This reflects the impact of the more downward sloping path of wholesale gas futures prices and the appreciation of the sterling exchange rate, which is offset by a somewhat less negative path of the output gap.

Chart 1.4: CPI inflation projection based on market interest rate expectations, other policy measures as announced



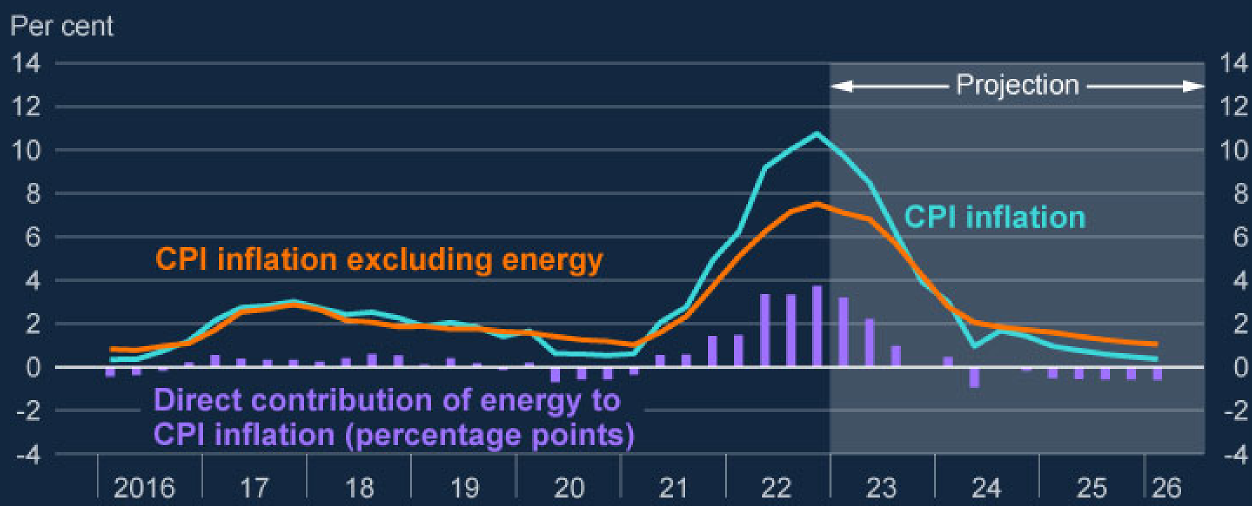
The fan chart depicts the probability of various outcomes for CPI inflation in the future. It has been conditioned on Bank Rate following a path implied by market yields, but allows the Committee's judgement on the risks around the other conditioning assumptions set out in Section 1.1, including wholesale 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 central projection for CPI inflation (a)

	2023 Q1	2023 Q2	2023 Q3	2023 Q4	2024 Q1
CPI inflation	9.7	8.5	6.2	3.9	3.0
	2024 Q2	**2024 Q3**	**2024 Q4**	**2025 Q1**	
CPI inflation	1.0	1.7	1.4	1.0	
	2025 Q2	**2025 Q3**	**2025 Q4**	**2026 Q1**	
CPI inflation	0.8	0.6	0.5	0.4	

(a) Four-quarter inflation rate.

Chart 1.5: CPI inflation and CPI inflation excluding energy (a)



Sources: ONS and Bank calculations.

(a) Energy prices include fuels and lubricants, electricity, gas and other fuels.

In projections conditioned on the alternative assumption of constant interest rates at 4%, CPI inflation is projected to be 0.8% and 0.2% in two years' and three years' time respectively, slightly lower than the Committee's forecasts at the same horizons conditioned on market rates.

The path for inflation beyond the near term is uncertain, and risks around the central projection are judged to be skewed significantly to the upside.

There remain a number of significant risks to the outlook for CPI inflation from more persistent strength in domestic wage and price setting (Box A of the August 2022 Report).

More persistence in wage and price setting could reflect feedback between high past outturns for CPI inflation, greater confidence by businesses that they can pass on cost increases, and a desire by some employees to try to offset the downward pressure on their real incomes via higher nominal pay. The MPC's central projections continue to incorporate some attempted catch-up of nominal wage growth to the sharp rise in CPI inflation, which in turn pushes up the inflation projection somewhat. But there remains a risk that firms grant larger pay awards in coming quarters given the tight labour market and the elevated level of CPI inflation. That said, some high-frequency indicators of wages have fallen quite sharply recently, including the KPMG/REC permanent staff salaries index that tracks new hires, whose pay offers tend to fall before those for existing employees.

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. Respondents to the latest Agents' pay survey highlighted expected consumer price inflation as one of the main drivers of pay settlements this year, and so far there is only a small sample of settlements available that take effect in the second half of this year. Since the November Report, some indicators of household inflation expectations have declined (Section 2.4), albeit longer-term expectations remain somewhat elevated, as do measures of business expectations. Medium-term inflation compensation measures in financial markets have fallen since their peak last March but remain above their long-term average. 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.

There remain risks around the central projection for UK CPI inflation from global factors. Near-term disruption in Chinese supply chains related to recent Covid developments could prove larger and more persistent than assumed, pushing up on world export prices. There is also the possibility of greater 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.

In addition, there remain upside risks to world prices from any disruption to the supply of gas from Russia to Europe, or other developments that reduce gas storage capacity ahead of next winter, that are greater than embodied in the current lower and downward sloping paths of wholesale energy price futures curves. The implications of that scenario for UK inflation would be mitigated to some extent by the extension of the EPG until 2024 Q1. But the MPC's projections remain sensitive to alternative assumptions for energy prices. For example, should wholesale energy prices follow their respective futures curves for the first six months of the projection and then remain constant, as the Committee had assumed for its wholesale energy price conditioning paths prior to the November Report, then CPI inflation would be 0.6 and 0.8 percentage points higher at the two and three-year horizons than in the February central projection. GDP growth would also be expected to be somewhat weaker in that case.

Overall, the Committee continues to judge that the risks around the central projection for CPI inflation are skewed significantly to the upside, primarily reflecting the possibility of greater persistence in domestic wage and price setting, and also the upside risks to the wholesale energy price conditioning assumption. This pushes up on the mean, relative to the modal, inflation projections in the forecast. It is difficult to quantify precisely the nature of the upside risks to inflation from greater persistence in domestic inflationary pressures. Qualitatively, an inflation forecast that takes into account these upside risks is judged to be much closer to the 2% target at the policy horizon than the modal central projection.

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

	Average			Projection			
	1998–2007	2010–19	2020–21	2022	2023	2024	2025
World GDP (UK-weighted) (c)	**3**	**2½**	**¾**	**3 (2¾)**	**1 (1)**	**1¾ (1½)**	**2 (2)**
World GDP (PPP-weighted) (d)	4	3¾	1½	3¼ (3)	2¼ (2¼)	3¼ (3)	3¼ (3¼)
Euro-area GDP (e)	2¼	1½	-½	3½ (3¼)	0 (0)	½ (0)	1½ (1¼)
US GDP (f)	3	2¼	1½	2 (1¾)	¾ (¼)	1¼ (1¼)	1¾ (2)
Emerging market GDP (PPP-weighted) (g)	5½	5	2¼	3½ (3½)	3¼ (3½)	4¾ (4½)	4¼ (4½)
of which, China GDP (h)	10	7¾	5¼	3 (3¼)	3¾ (4½)	6 (5)	4¾ (5)
UK GDP (i)	**2¾**	**2**	**-1¾**	**4 (4¼)**	**-½ (-1½)**	**-¼ (-1)**	**¼ (½)**
Household consumption (j)	3¼	2	-3½	5 (4¾)	-½ (-1)	½ (-½)	½ (½)
Business investment (k)	3	3¾	-5½	4¼ (5¼)	-5½ (-3½)	-5¾ (-6½)	¾ (-1¾)
Housing investment (l)	3	4¼	¾	8½ (6¾)	-6¼ (-8¼)	-8½ (-8¾)	0 (¼)
Exports (m)	4¼	3½	-5	10¾ (5¼)	-2¼ (-1½)	-1¾ (¾)	¼ (¾)
Imports (n)	6¼	4	-5	12 (13¼)	-1 (-1)	-¾ (0)	¾ (1¼)

Contribution of net trade to GDP (o)	-½	-¼	¼	-½ (-2½)	-¼ (0)	-¼ (¼)	-¼ (-¼)
Real post-tax labour income (p)	3¼	1½	¾	-2½ (-2¾)	-1½ (-3)	2¼ (1)	¾ (¾)
Real post-tax household income (q)	3	1½	0	0 (-¼)	-½ (-1½)	1½ (¾)	¾ (1)
Household saving ratio (r)	7¼	7¾	14¼	8¼ (8)	8 (7½)	9 (8¾)	9¼ (9)
Credit spreads (s)	¾	2½	1¾	1 (¾)	1¼ (¾)	1¼ (1)	1¼ (1)
Excess supply/**Excess demand** (t)	0	-1¾	-¾	**1 (1¼)**	-¾ (-1¾)	-1¾ (-2¾)	-2¼ (-3)
Hourly labour productivity (u)	2	¾	¼	½ (¼)	¼ (0)	0 (¼)	½ (½)
Employment (v)	1	1¼	-½	¾ (¾)	-½ (-1½)	-¼ (-½)	0 (0)
Average weekly hours worked (w)	32¼	32	30¾	31½ (31¾)	31½ (31½)	31½ (31½)	31½ (31½)
Unemployment rate (x)	5¼	6	4¾	3¾ (3¾)	4¼ (5)	4¾ (5¾)	5¼ (6½)
Participation rate (y)	63	63½	63¼	63 (63¼)	63 (62¾)	62¾ (62½)	62½ (62¾)
CPI inflation (z)	**1½**	**2¼**	**2¾**	**10¾ (10¾)**	**4 (5¼)**	**1½ (1½)**	**½ (0)**
UK import prices (aa)	-½	1¼	2½	9¼ (12)	-5 (-3¾)	-2¼ (-2¼)	-1½ (-1¾)
Energy prices	¼	¼	½	3¾ (3¾)	0 (1)	-¼ (0)	-½ (-¾)

– direct contribution to CPI inflation (ab)							
Average weekly earnings (ac)	4¼	2¼	4½	6 (5¾)	4 (4¼)	2¼ (2¾)	1½ (2)
Unit labour costs (ad)	3	1¼	5¼	5¾ (6)	4 (4¾)	2 (2¼)	¾ (1¼)
Private sector regular pay based unit wage costs (ae)	1¾	1½	3¾	7¾ (7¼)	7¾ (6¾)	2¼ (2¾)	1¼ (1¾)

Sources: Bank of England, Bloomberg Finance L.P., Department for Business, Energy and Industrial Strategy, 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 November 2022 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 Q4, so that has not been incorporated.
(f) Chained-volume measure. Forecast was finalised before the release of the advance estimate of US GDP for Q4, 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 ABJR+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 the chart slides and data – February 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. GDP data based on the mode of the MPC's GDP backcast. 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.
(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 Average Weekly Earnings, 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: Monetary policy since the November 2022 Report

At its meeting ending on 14 December 2022, the MPC voted by a majority of 6–3 to increase Bank Rate by 0.5 percentage points, to 3.5%.

Domestic wage and price pressures were elevated. There had been limited news in other domestic and global economic data relative to the November Report projections.

Although labour demand had begun to ease, the labour market remained tight. The unemployment rate rose slightly to 3.7% in the three months to October. Vacancies had fallen back, but the vacancies-to-unemployment ratio remained at a very elevated level. Annual growth of private sector regular pay picked up further in the three months to October, to 6.9%, 0.5 percentage points stronger than the expectation at the time of the November Report.

Twelve-month CPI inflation fell from 11.1% in October to 10.7% in November. The November figure was slightly below expectations at the time of the November Report. The exchange of open letters between the Governor and the Chancellor of the Exchequer was published alongside the December monetary policy announcement. Although the introduction of the Energy Price Guarantee (EPG) in October had limited the rise in CPI inflation, the contribution of household energy bills to inflation had risen further. Since the MPC's previous meeting, core goods price inflation had fallen back, while annual food and services price inflation had strengthened. CPI inflation was expected to continue to fall gradually over the first quarter of 2023, as earlier increases in energy and other goods prices dropped out of the annual comparison.

The Committee voted to increase Bank Rate by 0.5 percentage points, to 3.5%, at its December meeting. The labour market remained tight and there had been evidence of inflationary pressures in domestic prices and wages that could indicate greater persistence and thus justified a further forceful monetary policy response.

The majority of the Committee judged that, should the economy evolve broadly in line with the November Monetary Policy Report projections, further increases in Bank Rate might be required for a sustainable return of inflation to target.

2: Current economic conditions

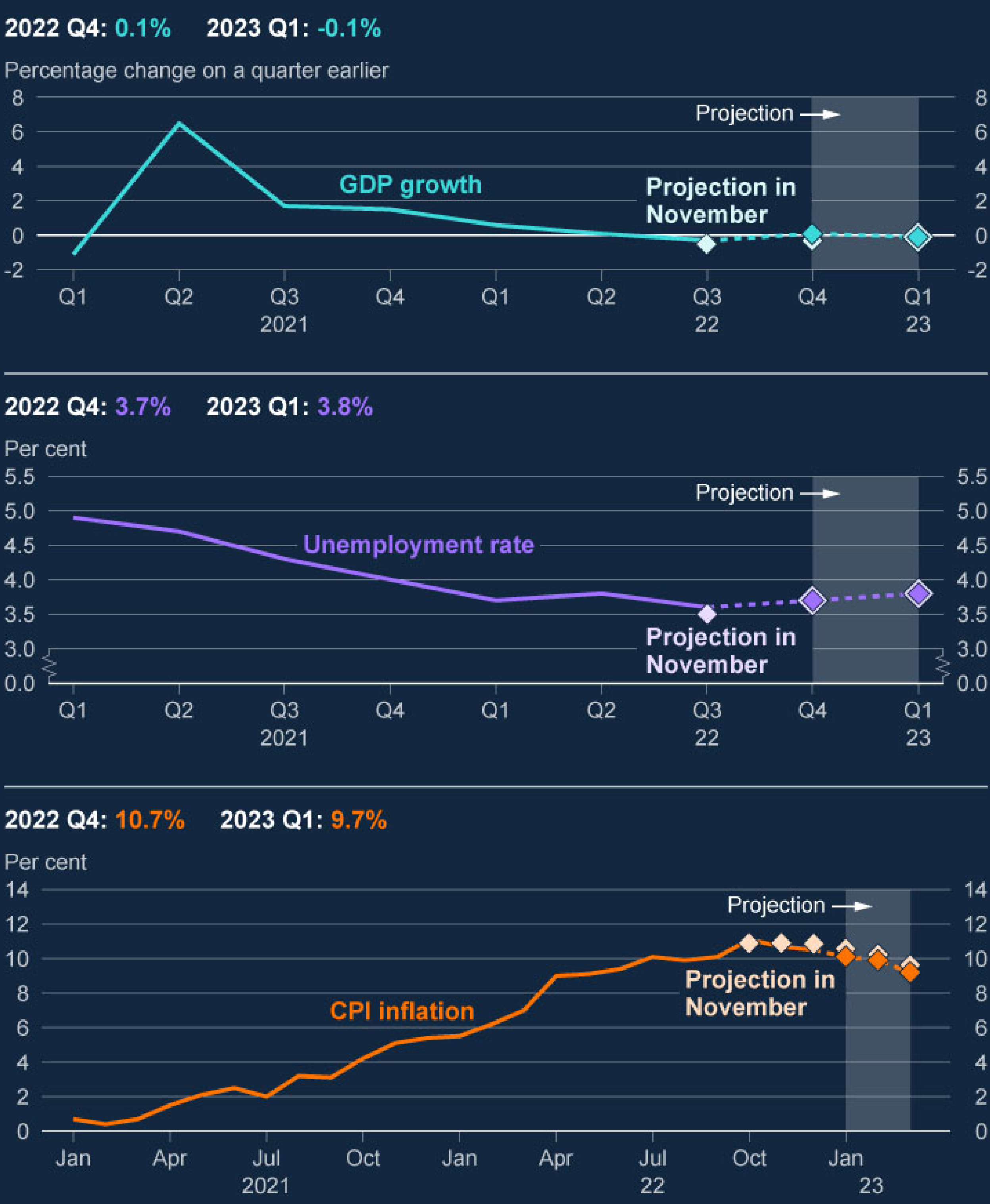
UK-weighted world GDP growth has continued to slow and is expected to be subdued in the near term. Global inflation remains elevated, although it is projected to fall swiftly over the course of 2023 as lower energy prices take effect, global demand weakens and supply-chain pressures ease. Many central banks have continued to raise policy rates, although falls in the paths for policy rates expected by markets and rising equity prices mean that global financial conditions have loosened since the November Report.

UK GDP is expected to be broadly flat over 2022 Q4 and 2023 Q1. That partly reflects the squeeze on real incomes, and hence consumer spending, from high global energy, tradable goods and food prices. The outlook for consumption is subdued as household energy bills are expected to rise further in April and mortgage rates remain, despite a recent fall, materially higher than in mid-2022. That weakness is, however, less pronounced than in the November Report reflecting a judgement that unemployment stays lower, giving households the confidence to cut their spending by less. Although the slowdown in output growth is starting to lead to a softening in labour demand, the labour market remains tight overall.

While CPI inflation has fallen from 11.1% in October to 10.5% in December, it remains well above the MPC’s 2% target. Inflation is projected to fall to just over 8% by June, as previous large increases in energy and other goods prices drop out of the annual comparison. The recent fall in wholesale gas futures prices leads to a lower inflation projection later in the year. Core inflation is expected to fall by less, from 6.3% in December to 5.7% in June. While goods inflation is expected to fall, in part as supply bottlenecks ease across most regions, services inflation is expected to remain strong, partly reflecting the strength in pay growth.

Chart 2.1: GDP growth is expected be close to zero in Q4 and Q1, unemployment is projected to remain very low and inflation is expected to fall a little

Near-term projections (a)



Sources: ONS and Bank calculations.

(a) The lighter diamonds show Bank staff's projections at the time of the November 2022 Monetary Policy Report. The darker diamonds show Bank staff's current projections. Projections for GDP growth and the unemployment rate are quarterly and show 2022 Q4 and 2023 Q1 (November projections show Q3 to Q1). Projections for CPI inflation are monthly and show January to March 2023 (November projections show October 2022 to March 2023). GDP growth and unemployment rate 2022 Q4 projections are based on official data to November, the CPI inflation figure is an outturn.

2.1: Global developments

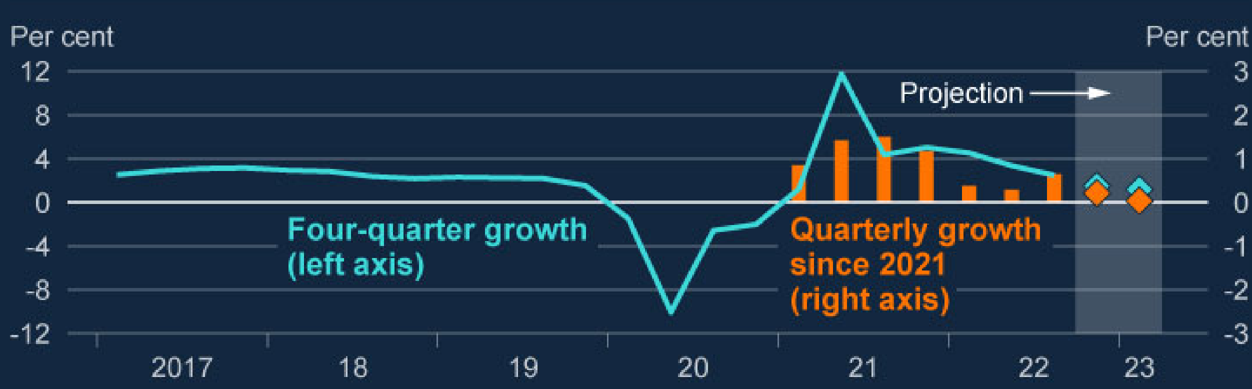
> **Global GDP growth continues to slow, and is expected to remain weak in the near term.**

Global GDP growth continued to slow over the course of 2022 (Chart 2.2). UK-weighted world GDP growth weakened from 0.6% in 2022 Q3, to an estimated 0.2% in Q4, broadly in line with the projection in the November Report. Bank staff expect slightly stronger growth in the US and the euro area to be broadly offset by weaker growth in China.

In the euro area, GDP growth has slowed in recent quarters as real incomes have been squeezed by higher energy and food prices. Following growth of 0.3% in 2022 Q3, quarterly growth slowed to 0.1% in Q4 according to the Preliminary Flash Estimate. The S&P Global euro-area flash composite output PMI rose a little above the 50 no-change mark in January, although the forward-looking new orders index remained in contractionary territory.

Chart 2.2: Global GDP growth continues to slow, and is expected to remain weak in 2023 Q1

UK-weighted world GDP growth (a)



Sources: Refinitiv Eikon from LSEG and Bank calculations.

(a) See footnote (c) of Table 1.D for definition. Figures for 2022 Q4 and 2023 Q1 are Bank staff projections. These projections do not include the Advance Estimate of US 2022 Q4 GDP and the Preliminary Flash Estimate of euro-area 2022 Q4 GDP that were released after the data cut-off.

In the United States, GDP increased by 0.7% in 2022 Q4, little changed from Q3. Although financial conditions have loosened since the November Report, they are much tighter than a year ago and, as a result, growth is expected to be subdued in coming quarters. Forward-looking indicators such as the ISM PMI new orders balance point towards weak growth in the coming months.

In China, rising Covid cases weighed on activity in the final quarter of 2022. GDP was flat in Q4, much weaker than the 1.4% rate of growth expected at the time of the November Report. The Covid outbreak is likely to continue to reduce consumption and output in the near term. Bank staff expect the Chinese economy to contract in 2023 Q1. Growth is then expected to recover as disruption eases.

Consumer price inflation in the US and euro area has declined in recent months, but remains high relative to central banks' targets.

Headline inflation has been declining in the US, and shows signs of slowing in the euro area. CPI inflation in the US fell by 0.6 percentage points to 6.5% in December. This was the sixth consecutive decline as upward pressure from energy and core goods prices continues to fade. Annual PCE inflation, which the Federal Reserve targets, also declined in December from 5.5% to 5.0%. In the euro area, annual HICP inflation decreased for the second consecutive month in December, falling by 0.9 percentage points to 9.2%. This was mainly driven by a fall in energy prices, aided by one-off subsidies in Germany. Despite this, the energy component continues to make the largest single contribution to headline inflation in the euro area, similar to the UK (Chart 2.6).

Wholesale gas and oil prices have fallen materially since November, while agricultural commodity prices are little changed.

Since the November Report, spot gas and oil prices have fallen markedly. European wholesale gas prices, as indicated by the Dutch Title Transfer Facility spot price, have fallen by around 50% to €65 per MWh (Chart 2.3). The gas futures curve has also fallen, particularly over the coming year. Reduced gas consumption in Europe has helped allay market concerns about gas shortages later this year. Since UK and continental European gas markets are integrated, prices in these markets tend to move together. The factors driving falls in European wholesale gas prices have pushed down UK gas prices since the November Report (Chart 2.3), which has lowered the UK CPI inflation projection in 2023 (Section 2.4).

Chart 2.3: Gas spot and futures prices have fallen since November

International wholesale gas spot and futures prices (a)

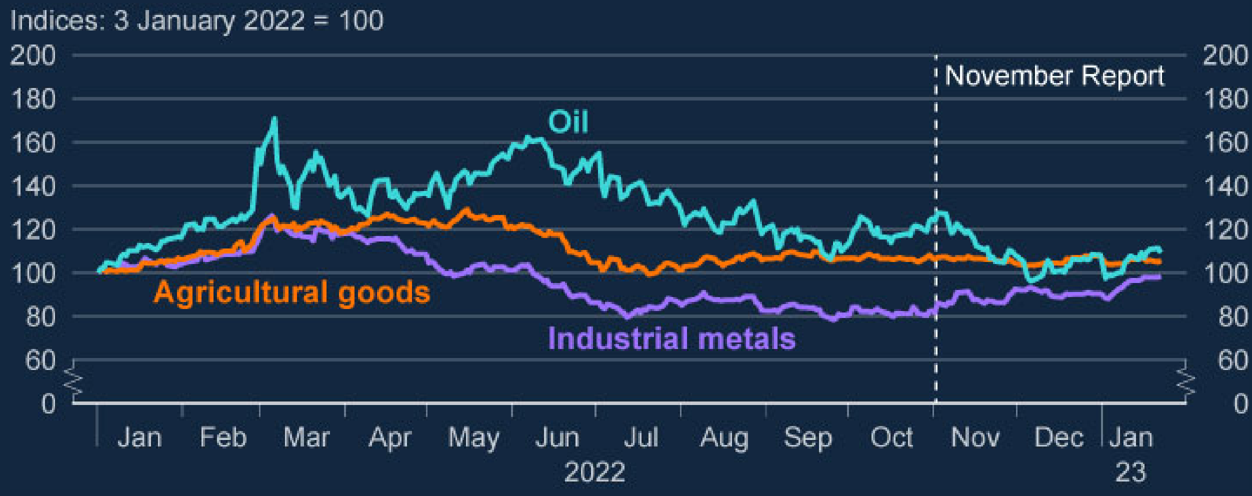
Sources: Bloomberg Finance L.P. and Bank calculations.

(a) The Dutch Title Transfer Facility pricing point is used for the European price. UK prices have been converted to euros. Dotted lines refer to the 15-day average to 24 January 2023. Dashed lines refer to respective futures curves using one-month forward prices based on the seven-day average to 25 October 2022 for the UK and the 15-day average to 25 October 2022 for Europe.

The Brent crude oil spot price has also fallen by 11½% since November, to US$85 per barrel, (Chart 2.4). Meanwhile, the prices of agricultural goods have been little changed since November, and industrial metals prices have increased.

Chart 2.4: Oil prices have fallen since November

US dollar commodity prices (a)



Sources: Bloomberg Finance L.P., Refinitiv Eikon from LSEG, S&P indices and Bank calculations.

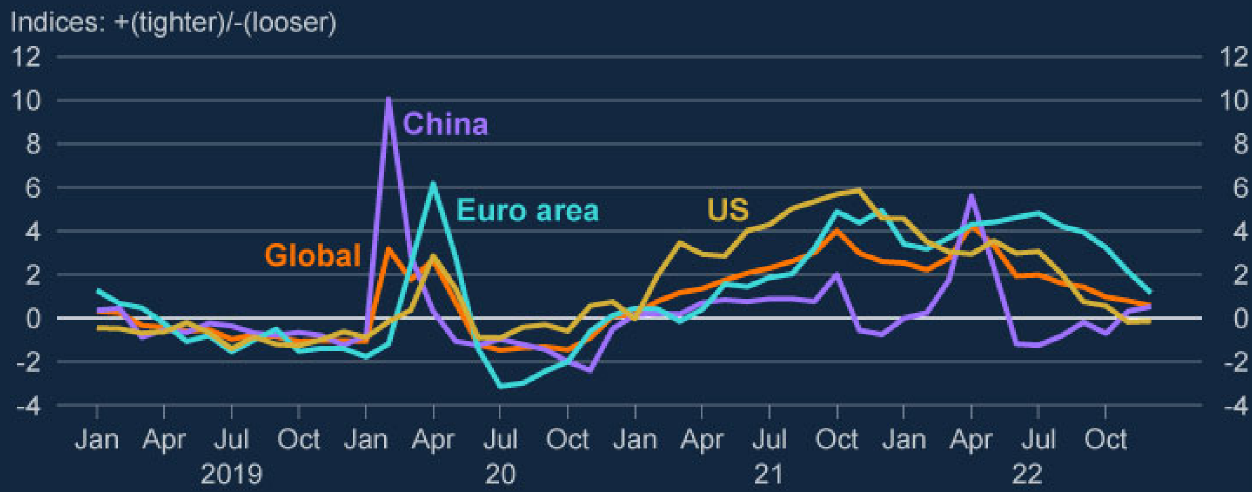
(a) Daily data to 24 January 2023. Calculated using S&P GSCI US dollar commodity price indices, the 'Agricultural goods' series is based on the total agricultural and livestock S&P Commodity Index. The 'Oil' series is based on US dollar Brent forward prices for delivery in 10–25 days' time.

Supply-chain disruption has eased in most areas, but not in China.

Pressure on global supply-chains appears to have eased in recent months, broadly as expected at the time of the November Report. Indicators of supply-chain constraints in most countries fell in 2022 Q4 (Chart 2.5), particularly in the euro area, and global shipping costs have fallen over the same period. By contrast, an indicator of supply-chain constraints in China has picked up in recent months, linked to rising Covid cases, albeit to a level not far above its historical average. Bank staff expect the latest Covid outbreak in China, and the supply-chain disruption stemming from it, to temporarily slow the easing of world export price inflation in the near term. However, looking further ahead, the removal of many restrictions associated with its zero-Covid policy by the Chinese authorities reduces the likelihood of repeated lockdowns and associated supply-chain disruption.

Chart 2.5: Supply-chain pressures have eased across most regions since November

Indicators of supply constraints (a)



Sources: Refinitiv Eikon from LSEG, S&P Global/CIPS and Bank calculations.

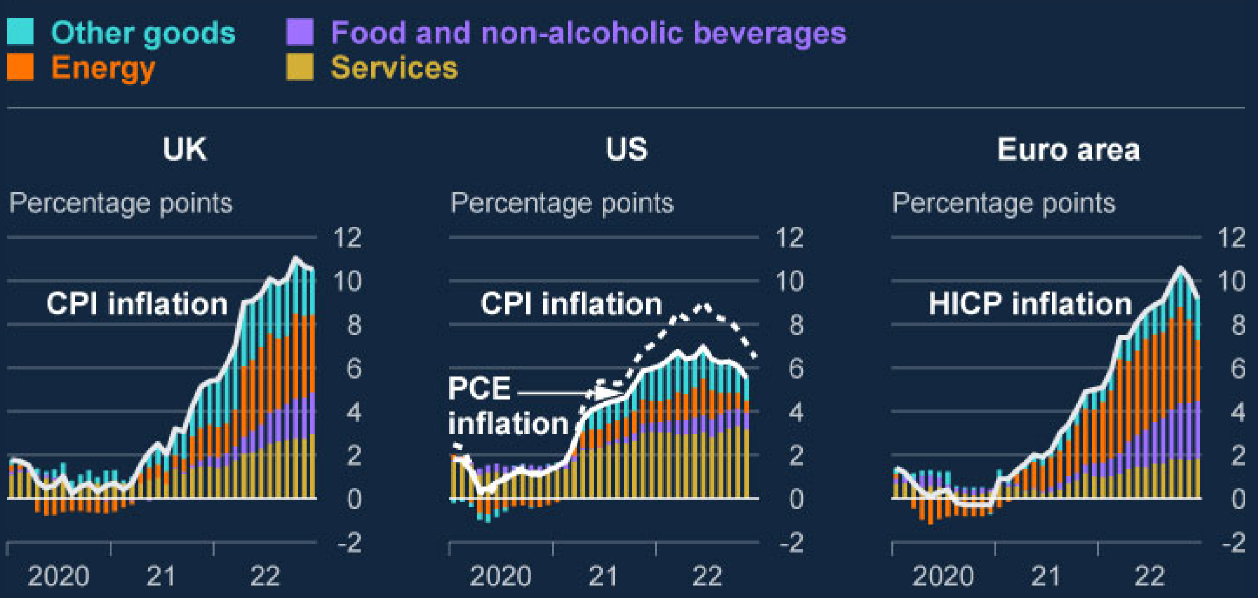
(a) Indicators are estimated by Bank staff using principal component analysis on a range of PMIs for supply constraints in the manufacturing sector (supplier delivery times, stocks of purchases, stocks of finished goods, input prices and backlogs of work). Before principal components are estimated, these indicators are regressed on the new orders PMI to control for movements in demand. Latest data are for December 2022.

Tradable goods inflation is expected to ease in 2023.

Further easing in supply-chain disruption, combined with weakening global demand, is expected to push tradable goods inflation lower. Since the pandemic began, supply-chain bottlenecks have also been exacerbated by the large shift in consumer spending towards goods, particularly in the US where fiscal support to households was substantial. So far, there is little evidence of a material unwinding of this rotation as the services share of consumption in the US remains far below its pre-Covid trend.

Chart 2.6: Inflation remains elevated 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) 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 December 2022 outturns for UK, euro area, and US CPI, and November for US PCE.

Labour markets are still tight and wage growth is elevated…

Labour markets in many major advanced economies remain tight. This is particularly true in the US, where labour market participation is still well below pre-Covid levels and the vacancy to unemployment ratio remains close to record highs. Wage growth in the US remains elevated at around 4.6% in December, although this has moderated from recent highs. In the euro area, the rate of unemployment remained at its joint lowest point on record in November at 6.5% and annual wage growth has picked up to around 3.0% in 2022 Q3.

Rising wage costs are one reason for the broadening of price pressures in both the euro area and US, which is evident in core services inflation. In the euro area, services inflation was 4.4% in December, up from around 2.5% at the start of 2022. In the US, PCE services inflation has been more stable over the course of 2022, but it remains over 2 percentage points above its pre-pandemic average. As well as rising wage costs, the indirect effects of higher energy prices are also likely to be a factor.

…but global inflation is expected to fall sharply in 2023.

Overall, the latest data suggest that UK-weighted world export price inflation peaked at 14% in 2022 Q2, with UK-weighted world consumer price inflation expected to peak at 8.4% in 2022 Q4. These rates of inflation are expected to fall swiftly over the course of 2023 as global demand weakens, the impact of lower energy prices is felt, and supply-chain pressures ease.

With regard to medium-term inflation expectations, measures derived from financial markets remain around their 2010–19 average level in the US. In the euro area, they remain above their 2010–19 average and a little above the ECB’s price stability objective.

Central bank policy tightening has continued, and market pricing implies that policy rates are likely to pick up further in 2023…

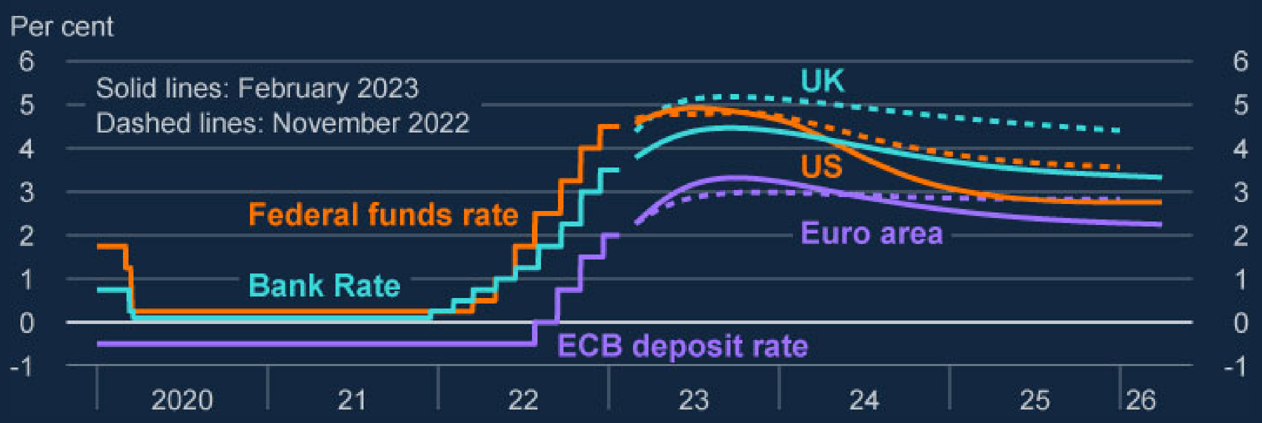
With inflation still well above target in many countries, several central banks have continued to tighten policy. In the US, the FOMC increased the target range for the federal funds rate by 50 basis points to 4.25%–4.50% in December, following a 75 basis point increase in November. The Committee restated its guidance that further rate rises will be appropriate to return inflation to the 2% target over time. At its December meeting, the ECB Governing Council increased its three key interest rates by 50 basis points, and stated that it expects to raise rates significantly further. The interest rate on the deposit facility now stands at 2.0%, up from -0.5% in mid-2022. In December, the MPC voted to increase Bank Rate by 50 basis points, to 3.5%, the ninth consecutive rate rise.

…but, further out, expectations for policy rates are lower than in November in the US, euro area and the UK.

Rates are expected to rise further from current levels, but the market-implied level of policy rates is now lower at the three-year horizon than in November. In the US and the euro area, markets expect rates to peak just below 5% and around 3¼% this year respectively. In the UK, the market-implied path for rates now peaks at around 4½%, down from nearly 5¼% at the time of the November Report. The path for Bank Rate implied by the latest Market Participants Survey remains lower than the market curve, but the gap has narrowed markedly since November. At the three-year point, market-implied policy rates have moved lower, which likely reflects signs of softening price pressures. Since the run-up to the November Report, rate expectations at this horizon are 80–110 basis points lower in the US and UK, and 55 basis points lower in the euro area (Chart 2.7).

Chart 2.7: Financial markets expect further increases in policy rates across the UK, US and euro area, although rate expectations beyond this year have fallen

International forward interest rates (a)



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

(a) All data as of 24 January 2023. The November curve for the UK is estimated using instantaneous forward overnight swap rates in the seven working days to 25 October 2022. The November curves for the euro area and US are estimated based on the 15 working days to 25 October 2022. The February curves for all countries are estimated using the 15 working days to 24 January 2023. Federal funds rate is the upper bound of the target range.

Overall, global financial conditions have loosened since the November Report.

Declines in interest rate expectations over the next three years have been mirrored in government bond yields extending out to longer maturities. Since the November Report, UK and US 10-year government bond yields have fallen by around 50 basis points, although German yields have only fallen by around 10 basis points.

Many equity indices have risen since the November Report, in part reflecting expectations of lower policy rates and easing inflation concerns. The S&P 500 has risen by around 7%, while the Euro Stoxx and the MSCI Emerging Market indices have risen by 17%. The US dollar exchange rate index has also fallen by around 6% since November as investors have turned to higher-yielding, riskier, assets.

Stronger risk appetite has also been evident in movements in global corporate borrowing spreads. Since the November Report, spreads on high-yield corporate debt in the US have fallen by around 70 basis points while those in the euro area have fallen by over 150 basis points. Meanwhile spreads on investment-grade debt have also fallen by around 30 and 60 basis points in the euro area and US respectively.

There have been similar movements in UK asset prices. Since November, the FTSE All-Share index has risen by 12%, and spreads on UK investment-grade and high-yield corporate debt have declined by around 60 and 120 basis points respectively. Over the same period, the sterling effective exchange rate index has appreciated by around 1%.

Overall, stronger equity prices, narrowing corporate borrowing spreads and lower expectations for policy rates mean global financial conditions have loosened since the November Report.

2.2: Domestic credit conditions

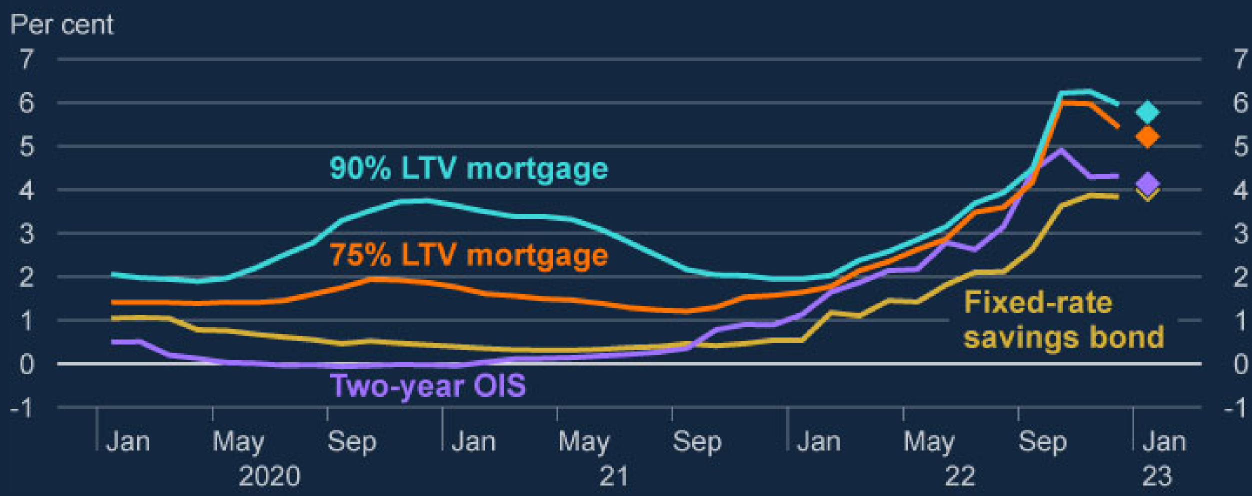
Despite a recent fall, mortgage rates remain materially higher than this time last year…

Rates on new mortgages have declined since the November Report, but they remain materially higher than a year ago. Average quoted rates on two-year fixed-rate 90% and 75% LTV mortgages stood at 6.0% and 5.4% in December. These are around 30 basis points and 60 basis points lower than recent highs. Preliminary data for January suggest rates have fallen by a further 20 basis points from these levels. Spreads on these mortgage products above their relevant reference rate, the two-year overnight index swap (OIS) rate, have fallen since November. This leaves spreads around their 2016–19 average levels.

Developments in household secured credit availability have been mixed. The number of mortgage products available has continued to recover from October lows, although it remains below the levels seen in the summer. However, the latest **Credit Conditions Survey (CCS)** suggested the availability of secured lending to households declined in Q4, with lenders expecting a further fall in Q1. This partly reflected perceptions of a deterioration in the economic outlook and reduced risk appetite.

Chart 2.8: Average quoted rates on new mortgages have risen in 2022

Average quoted rates on two-year fixed-rate mortgages, a two-year fixed-rate savings bond and the two-year OIS rate (a)



Sources: Moneyfacts.co.uk 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 24 January and are provisional until publication on 7 February. OIS rates are averages of daily rates to 24 January.

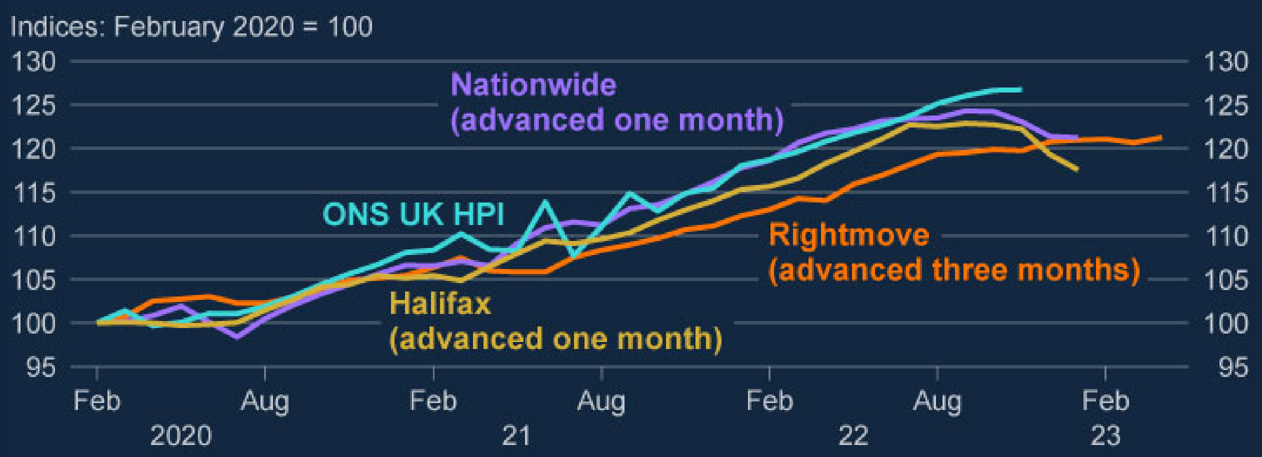
…which, alongside other factors, is putting downward pressure on house prices.

UK house prices have risen substantially since the start of the pandemic, driven by a number of factors including changes in household preferences, accumulated savings and policy support in the form of stamp duty holidays. But higher mortgage rates and the broader real income squeeze have reduced affordability and are weighing on prices. UK house prices, as measured by the ONS House Price Index, grew by 0.1% in November, having averaged 1% monthly inflation in the year to October (Chart 2.9). Timelier indicators of house prices such as the Halifax and Nationwide measures indicate that UK house prices are likely to have declined since then. Contacts of the Bank's Agents also expect house prices to fall in coming months.

Housing market activity has also fallen. Mortgage approvals declined sharply in November and December to levels not seen since the onset of the pandemic. Similarly, housing activity balances in the RICS survey are firmly negative.

Chart 2.9: Indicators of UK house prices have begun to fall after sharp rises during the pandemic

House price indices (a)



Sources: Halifax, Nationwide, ONS, Refinitiv Eikon from LSEG, Rightmove.co.uk and Bank calculations.

(a) The latest data point for the ONS House Price Index is November 2022. Halifax, Nationwide and Rightmove data are advanced to reflect the respective timing of each data source in the house-buying process.

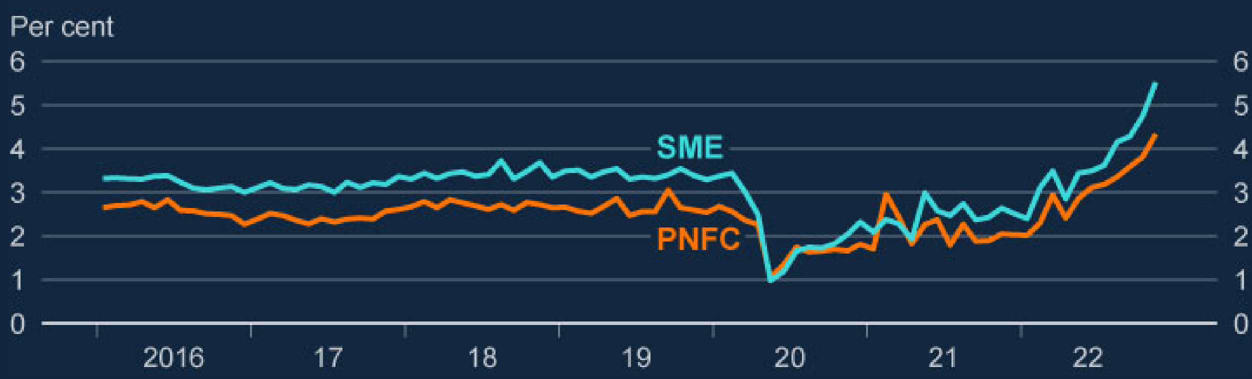
Unsecured borrowing rates, such as those on credit cards and personal loans, have increased since the November Report. The CCS suggests that lenders reduced unsecured credit availability in 2022 Q4, and expected to do so further in 2023 Q1.

Interest rates on bank lending to UK firms have risen, while developments in corporate credit availability appear mixed.

The average cost of new borrowing from banks by UK private non-financial corporations (PNFCs) has continued to rise. The average effective interest rate on new PNFC loans reached 4.3% in November (Chart 2.10). Effective interest rates on new loans to small and medium-sized enterprises (SMEs) rose to 5.5%.

Chart 2.10: The interest rates on new bank loans to UK companies have increased over the course of 2022

Average effective interest rate on new loans (a)



(a) Data show average effective interest rates on new business lending at fixed rates. The latest data are November 2022 outturns. Data are not seasonally adjusted.

Surveys suggest developments in the availability of bank credit to the corporate sector have been mixed. Lenders responding to the Bank's latest CCS did not report a material decline in corporate credit availability in Q4 and expect only a modest tightening in the coming quarter. However, this contrasts with responses to the Q4 Deloitte CFO survey where the net balance for the availability of credit declined to its lowest level in over 10 years. Contacts in the Bank's Agency network also report a tightening in credit availability since mid-2022.

2.3: Domestic activity

UK GDP is expected to be broadly flat in Q4…

After falling by 0.3% in Q3, UK GDP is expected to have grown by 0.1% in 2022 Q4, based on official data to November (Chart 2.11). The small rise in headline GDP in Q4 in part reflects some temporary factors such as the recovery in activity following the Queen's state funeral in September (purple bars in Chart 2.11). Bank staff estimate that underlying output (orange bars in Chart 2.11), calculated as market sector output adjusted for the estimated effects of additional bank holidays, fell in Q4 albeit by less than in Q3.

The Q3 GDP outturn and the projection for Q4 are a little stronger than had been expected in the November Report. And the Q4 growth rate is much stronger than expectations from earlier in 2022, when output had been projected to fall by almost 1%. That difference largely reflects the Government's Energy Price Guarantee (EPG) that was initially announced in September. The EPG has limited the squeeze on household real incomes owing to higher energy prices by capping the typical household dual-fuel bill (Box B).

Chart 2.11: GDP is expected to be broadly flat in 2022 Q4 and 2023 Q1

Contributions to quarterly GDP growth (a)

Sources: ONS and Bank calculations.

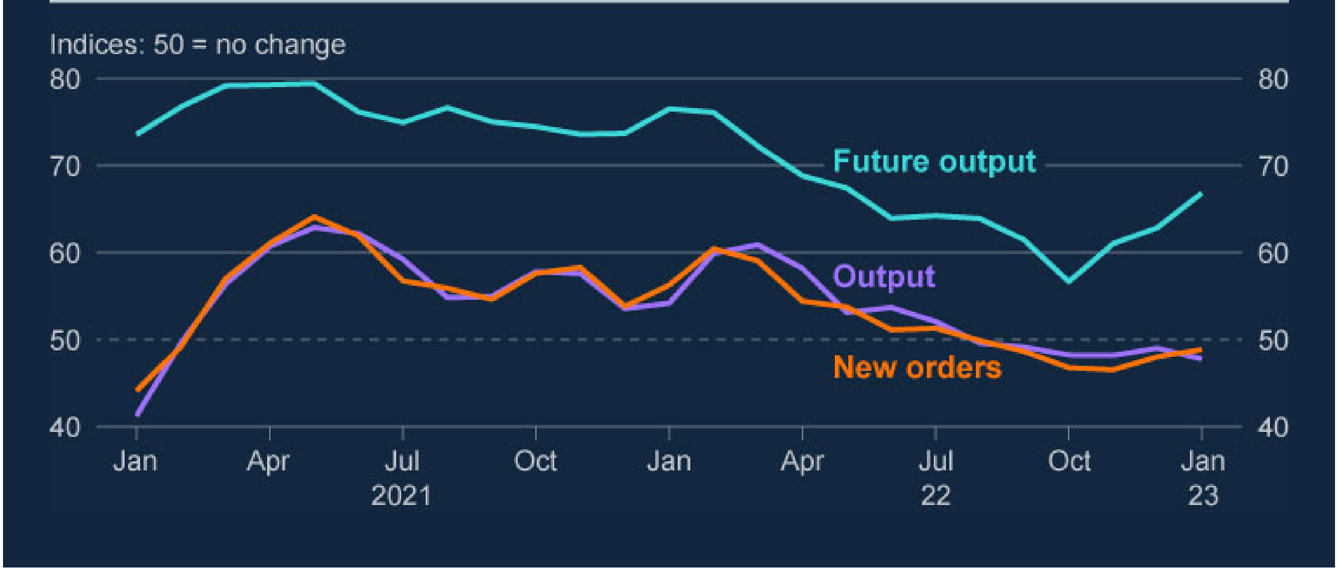
(a) Diamonds show quarterly headline GDP growth. Gold and purple bars are Bank staff estimates for the contribution of the extra bank holidays in June and September respectively. Orange bars show adjusted market sector output, as a proxy for 'underlying output'. Aqua bars are contributions of government services output to quarterly GDP growth, including the vaccination and Test and Trace programmes. Data for 2022 Q4 and 2023 Q1 are Bank staff projections.

…and in Q1, consistent with the steer from most business surveys.

GDP is then expected to fall by 0.1% in 2023 Q1. Business surveys such as the S&P Global/CIPS UK composite PMI, where the output and new orders indices remained below the 50 no-change mark in January, are consistent with small falls in GDP (Chart 2.12). Other business surveys paint a similar picture of output growth close to zero. The future output index – which asks firms about changes in output over the next year – has increased in recent months but remains below its historical average.

Chart 2.12: Survey indicators are consistent with a small fall in GDP

Survey indicators of UK output growth (a)



Source: S&P Global/CIPS.

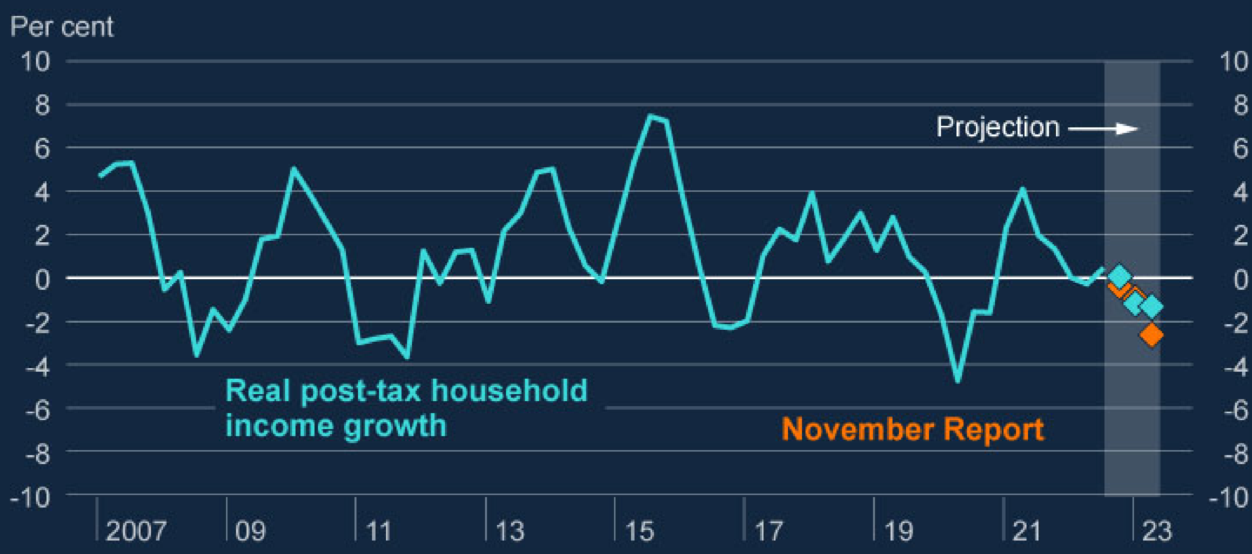
(a) A reading of above 50 indicates an increase on the previous month while a reading below 50 indicates a fall. Measures of current monthly UK composite (services and manufacturing) output, new orders and future output. Latest data are flash estimates for January 2022.

The slowdown in GDP growth largely reflects the past sharp rise in energy prices weighing on real incomes and household spending.

The adverse impact of past sharp rises in global energy, tradable goods and food prices on household real incomes is weighing on consumer spending and hence GDP. Real post-tax household income growth has slowed from over 4% in the year to 2021 Q2 to 0.5% in 2022 Q3 (Chart 2.13). Consumption fell sharply in Q3 and spending on goods, as indicated by retail sales volumes, has been on a downward trend since April 2021. Contacts of the Bank's Agents noted customers trading down to lower-priced products and a drop in demand for household goods (Box C). Both real incomes and consumer spending are expected to continue to fall on the quarter in Q4 and Q1.

Chart 2.13: Real household income growth has slowed since the beginning of 2021 and is expected to fall further in the near term reflecting high energy prices

Four-quarter real household income growth (a)



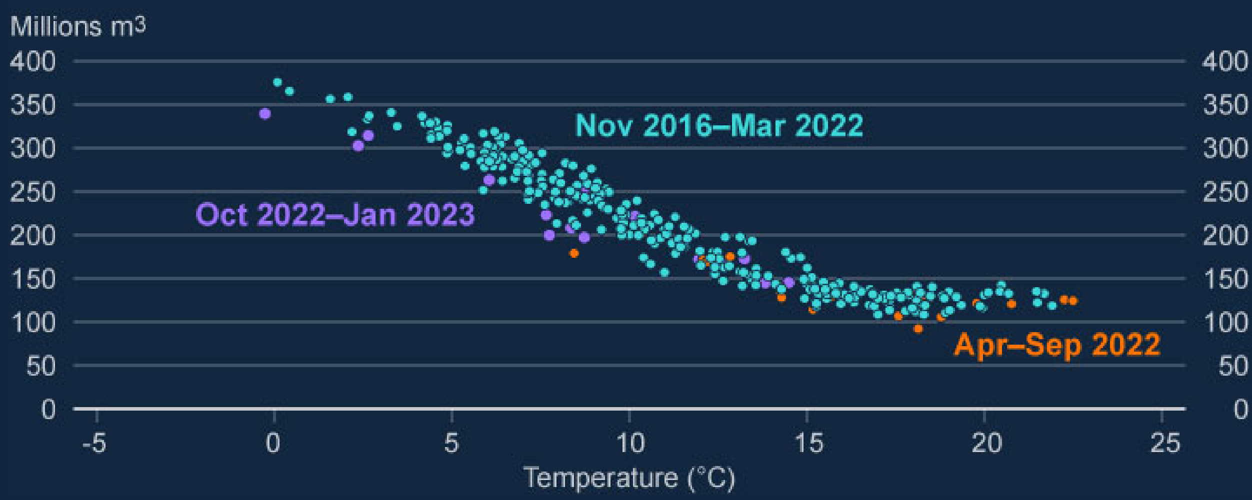
Sources: ONS and Bank calculations.

(a) Diamonds show Bank staff projections for 2022 Q4, 2023 Q1 and Q2. Income includes non-profit institutions serving households. See footnote (q) in Table 1.D for the definition of real post-tax household income.

In response to higher energy costs, there is some tentative evidence that households and firms are reducing their demand for energy. Since October 2022, gas demand for a given temperature has been a little lower, on average, than it has been in recent years (purple dots in Chart 2.14). The MPC's projections incorporate some substitution between the demand for energy and the demand for other goods, which may be easier for firms than households (Box B of the **November Report**).

Chart 2.14: Since October 2022, the demand for gas for a given temperature has been lower than in previous years, probably reflecting higher energy costs

Weekly domestic demand for gas (a)



Sources: Elexon/BMRS, National Grid and Bank calculations.

(a) Dots represent weekly average gas demand. Gas demand data do not account for population growth over this period. Temperature data are an average across six weather stations around the UK.

Survey evidence points to a weak outlook for consumption, reflecting a further expected increase in energy bills and higher mortgage rates.

The GfK Consumer Confidence Index remained around historically low levels in January. In particular, the forward-looking balance for households' confidence in their own financial situation over the next 12 months has dropped sharply over 2022. Although there has been some recent recovery, it remains over three standard deviations below its historical average.

The continued weakness in these forward-looking indicators of consumer sentiment probably reflects concerns about increasing energy bills and higher borrowing rates. Retail gas and electricity prices are subject to the lower of the Government's Energy Price Guarantee (EPG) or Ofgem's energy price caps until April 2024. The EPG for a typical annual dual-fuel bill is due to increase from £2,500 to £3,000 per year in April (Box B). Retail energy prices are also expected to rise by 20% at that point, because even though wholesale gas futures prices have fallen recently (Chart 2.2), that decline does not push Ofgem's energy price cap below the EPG in April.

As a result, household real incomes are expected to fall by 1.3% in the year to 2023 Q2 (Chart 2.13). This fall is less than expected in November when real incomes had been expected to fall by 2.6% (orange diamonds in Chart 2.13), largely due to the fact that the announced EPG is slightly lower than the MPC's working assumption at that time (Box B).

However, the recent falls in gas futures prices, if sustained, will push the Ofgem price cap below the EPG level in July. This will pull household energy prices down from that point onwards such that the EPG no longer binds beyond the near term (Section 1).

For a relatively small proportion of households, the increase in mortgage repayments will be larger than the rise in energy bills. An estimated 1.7 million mortgages will reach the end of their fixed-rate term over 2023. For the average mortgagor within that group, annual interest payments will increase by just under £3,000 if their mortgage rate rises by 350 basis points – the increase implied by quoted mortgage rates. The overall cash-flow impact of higher mortgage rates on spending will, however, be offset to some extent by the increase in deposit rates which provides savers with additional income. For example, interest rates on two-year fixed-rate bonds have increased by around 350 basis points since the start of 2022 (Chart 2.8).

But the outlook for spending is less weak than in November, reflecting a judgement that households save less as unemployment remains low.

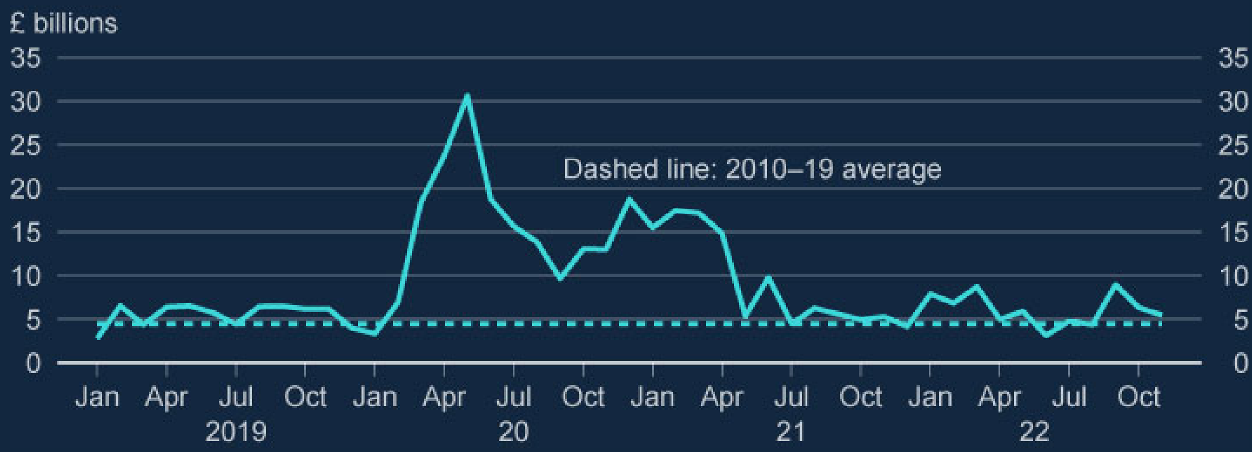
Some households may be able to support their spending in the near term by saving less. Households tend to save less for precautionary purposes when unemployment is low or falling, as the perceived risk of job losses is reduced. In the MPC's central projection, the saving rate falls from 9.0% in 2022 Q3 to 7.0% by mid-2023, although it rises thereafter.

Households may also be able to draw down on their accumulated savings. During the pandemic, aggregate household savings increased materially: the net flow into household deposits was well above its 2010–19 average until early 2021 (Chart 2.15). However, the value of these savings has been eroded by elevated rates of inflation. And households' overall net financial wealth relative to incomes is lower than the pre-pandemic period (**Broadbent (2022)**). The distribution of those accumulated savings was also skewed towards higher-income households, while it is lower-income households that have been hit hardest by the energy price shock (In focus, **May 2022 Report**). In addition, the NMG survey suggests that some households with mortgages have low levels of savings to draw on, and so may be forced to reduce their consumption when their mortgage rates rise. They may also reduce their spending in anticipation.

Overall, household consumption is projected to fall by 0.4% in 2023 as a whole, a smaller decline than the -1% projected in November (Section 1). After falling in the first half of 2023, consumption is projected to rise from Q3 onwards.

Chart 2.15: The flow into household deposits has been close to historical averages recently, having been well above this during the pandemic

Net flow of household deposits (a)



Sources: Bank of England and Bank calculations.

(a) Sum of monthly changes of monetary financial institutions' sterling M4 liabilities to the household sector and private sector holdings of National Savings and Investment (NS&I) accounts. Household M4 flows are seasonally adjusted and NS&I flows are not seasonally adjusted. Latest data point is November 2022.

Business investment is likely to remain subdued in the face of weaker demand and tighter financial conditions.

Business investment fell by 2.5% in 2022 Q3. This outturn was 3.5 percentage points below that expected in the November Report, leaving business investment around 8% below its pre-pandemic level. Intelligence from the Bank's Agents suggests that weak demand, tighter financial conditions and uncertainty about the outlook were holding back investment (Box C).

Bank staff expect business investment to continue to fall in Q4 and Q1. Surveys of investment intentions are consistent with further weakness in business investment (Chart 2.16). That, in part, is likely to reflect higher interest rates: around one third of firms responding to the January DMP Survey said that higher rates would lead them to cut back on capital expenditure over the next 12 months. It might also reflect continuing uncertainty. In the latest DMP Survey, uncertainty remained elevated, although it had fallen from its recent peak. Overall, business investment is expected to fall by 5.6% in 2023.

Chart 2.16: Investment intentions have weakened further

Survey indicators of investment intentions (a)

Sources: Bank of England, BCC, CBI, ONS and Bank calculations.

(a) Differences from averages between 2000 and 2019. CBI series shows planned investment in plant and machinery over the following year relative to the previous year. Sectors within CBI (manufacturing, distribution, financial services and business/consumer/professional services) are weighted together using shares in business investment. BCC series is based on reported changes to planned investment in plant and machinery over the past three months. Weighted average of the manufacturing and services sectors based on shares in business investment. Agents series shows planned expenditure on tangible non-financial assets over the following 12 months. Latest data points are 2022 Q3 for the BCC and CBI surveys and 2022 Q4 for the Agents.

The impact of higher mortgage rates is weighing on the outlook for housing investment.

Housing investment has grown since the pandemic, with the level rising by over 10% between 2019 Q4 and 2022 Q2, in part driven by the strength in house prices over this period. In the latest data, however, growth has slowed, with housing investment broadly flat in 2022 Q3. The weakness in the economic outlook, combined with the impact of higher mortgage rates on the housing market (Section 2.2), is expected to weigh on housing investment this year. Although housing investment accounts for only around 5%

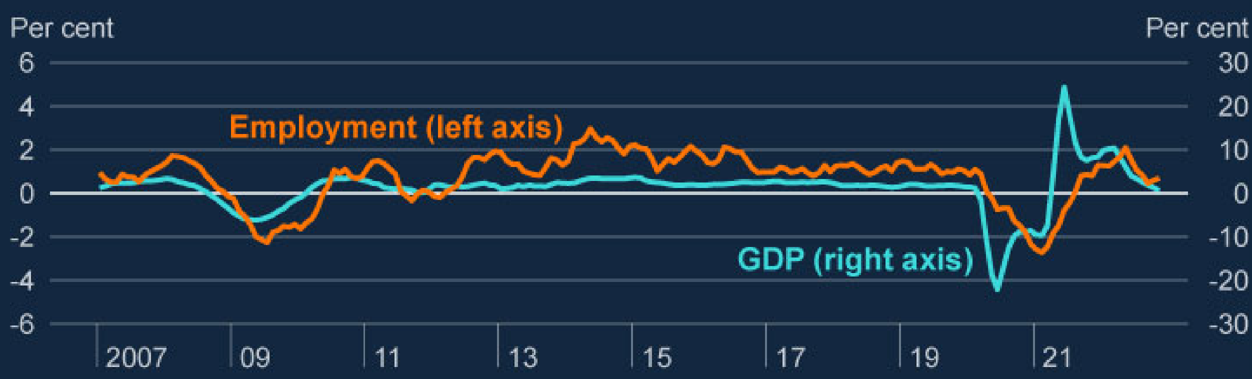
of GDP, it is volatile and has contributed significantly to economic cycles in the past (Box 4 of the **May 2019 Report**). In the MPC's central projection, housing investment falls by just over 6% in 2023.

There is some evidence that the slowdown in output growth is leading to a softening in labour demand…

LFS employment growth has slowed over the second half of 2022, reflecting the past slowdown in GDP growth (Chart 2.17), and surveys suggest that employment growth is likely to be subdued in the near term. Indicators of labour demand have eased as firms adjust their hiring plans in response to weak activity. In particular, job vacancies have fallen after peaking in the middle of last year.

Chart 2.17: Employment growth has slowed reflecting the past slowdown in GDP growth

Annual LFS employment and GDP growth (a)



Sources: ONS and Bank calculations.

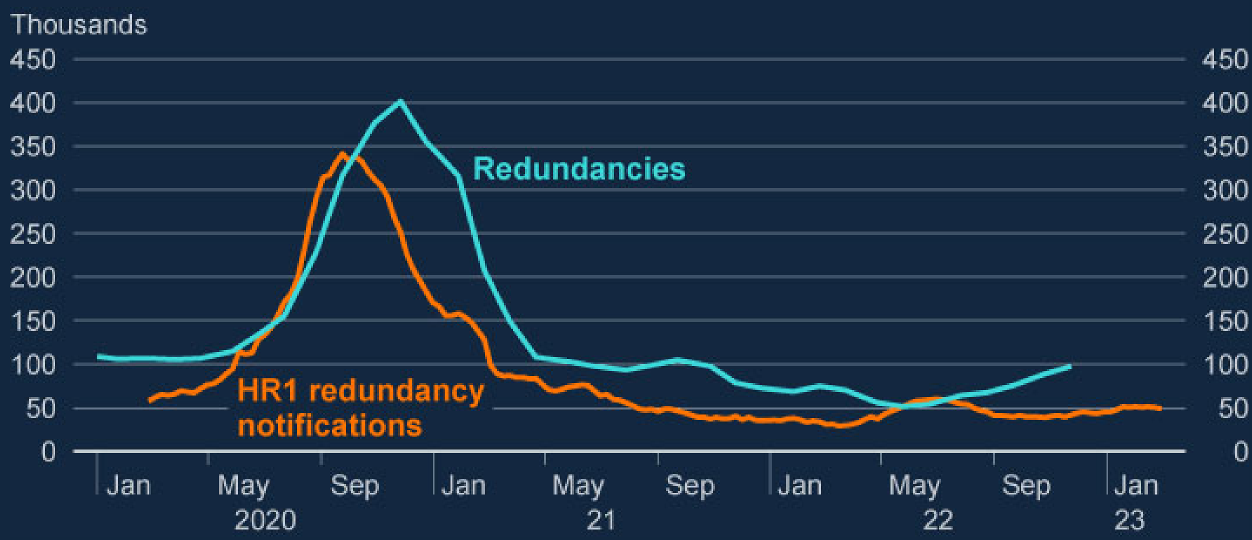
(a) Data are three months to November 2022. Data show the growth rate on the same three months in the previous year.

…although redundancies remain low...

Despite signs of slowing demand for labour, redundancies remain low. Advance notifications of redundancies, which are a leading indicator of the official ONS data, have remained broadly flat (Chart 2.18). Taken together, the evidence suggests that the very high level of churn in the labour market that began in 2021 may now be dissipating. Agency intelligence suggests that many firms have paused hiring plans and that if demand weakens further, they would reduce staff hours or shifts, before actively reducing headcount (Box C). This reflects concerns that rehiring would be difficult if needed.

Chart 2.18: Redundancies remain low

Indicators of redundancies (a)



Sources: Insolvency Service, ONS and Bank calculations.

(a) Three-month rolling sums. HR1 advance notices of redundancy are only required when employers propose to dismiss 20 or more employees at a single establishment. Not all employees given such notice will go on to be made redundant. The figures may also include some submissions relating to company restructures or changes in employee terms of contract. Great Britain only. This series is advanced by two months. Latest redundancies data point is for the three months to November 2022; latest HR1 notifications data point is for the week ending 8 January 2023.

…and overall, the labour market remains tight.

Despite the slowing in labour demand and employment growth, which suggest some loosening in the labour market, it remains tight overall. The unemployment rate remained at 3.7% in the three months to November, a very low level by historical standards. Although vacancies have fallen, they remain elevated. The weakness in labour participation, in part reflecting early retirement and ill health, may have exacerbated the tightness of the labour market (Section 3).

In the MPC's central projection, unemployment is projected to rise modestly to 4.3% by 2023 Q4. That rise is less than had been expected in the November Report. That reflects a judgement that the weakness in labour demand is more likely than usual to be met by a reduction in job vacancies rather than by an increase in redundancies, consistent with some hoarding of labour by companies (Section 1). In the latest DMP Survey, employment growth in 2023 was still expected to be positive. Overall, these labour market developments are expected to result in lower precautionary saving by households than previously assumed over the forecast period.

2.4: Inflation and wages

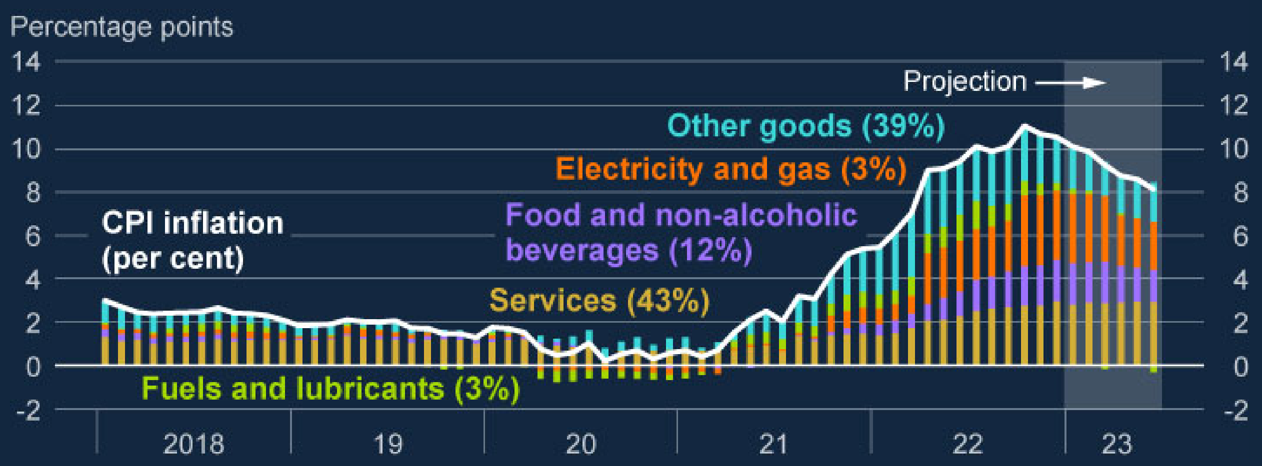
CPI inflation has begun to fall but it remains very high.

CPI inflation rose to 11.1% in October and, although it has fallen a little to 10.5% in December, it remains well above the MPC's 2% target. Recent outturns have been a little lower than the projection in the November Report. While the introduction of the Government's EPG in October has capped average gas and electricity bills, the direct contribution of energy prices to CPI inflation (orange and green bars in Chart 2.19) remains the largest component of the overshoot in CPI inflation relative to the 2% target.

Food prices are making an increasingly large contribution to CPI inflation (purple bars in Chart 2.19). Food price inflation has been rising steadily since July 2021 and reached a 45-year high of 16.8% in December. This has in large part reflected global factors including supply constraints and rising energy and fertiliser costs in food production, largely caused by the war in Ukraine, as well as poor weather conditions. Higher input costs appear to have been passed through to food prices faster than is usually the case, perhaps because of the scale of the shock and its global nature. Agricultural commodity prices have, however, been broadly flat since mid-2022 (Chart 2.4), which may moderate price pressures later this year.

Chart 2.19: CPI inflation rose to around 11% in 2022 Q4, but is expected to fall back to around 8% by 2023 Q2

Contributions to CPI inflation (a)



Sources: Bloomberg Finance L.P., Department for Business, Energy and Industrial Strategy, ONS and Bank calculations.

(a) Figures in parentheses are CPI basket weights in 2022. Data to December 2022. Bank staff projections from January to June 2023. Fuels and lubricants estimates use Department for Business, Energy and Industrial Strategy petrol price data for January 2023 and then are based on the sterling oil futures curve. Other goods is the difference between CPI inflation and the other contributions identified in the chart.

Inflationary pressures have been shifting away from core goods towards services.

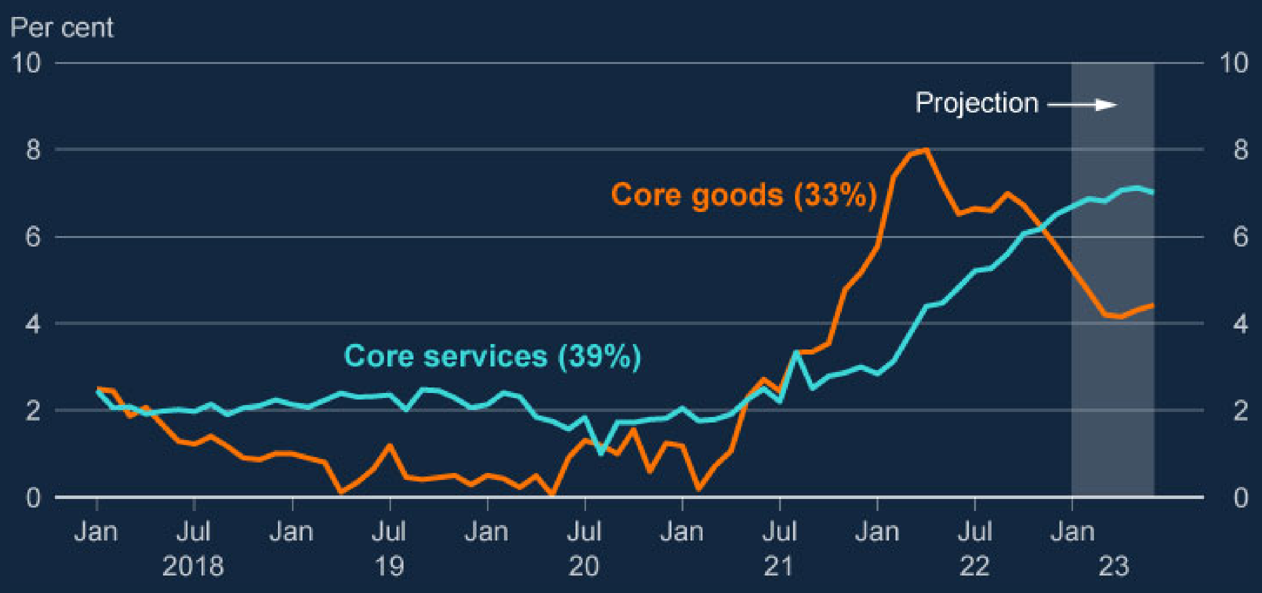
After peaking at 8.0% in April 2022, core goods inflation fell below 6.0% in December (Chart 2.20). Some of this decline is due to weaker used car price inflation, which in part reflects an easing of supply bottlenecks in this sector. Broader easing in supply chains across most regions (Section 2.1) has also contributed to some softening in goods prices.

In contrast, services inflation has been picking up. Core services inflation was 6.5% in December, up from below 2% in early 2021 (Chart 2.20). Analysis by Bank staff suggests that rising pay growth has been a significant contributor to the pickup in services inflation, reflecting the fact that wages tend to make up a large proportion of costs for these firms. Other costs, proxied by producer prices, also appear to have made an important contribution to the rise. Those other costs will partly reflect the indirect effects of higher energy prices (Box B of the **November 2022 Report**). Broadly consistent with these results, an analysis of firms' responses to DMP Surveys between August and October

2022 found that, when asked about the factors affecting their own price expectations, labour costs were the factor cited by most firms, followed by energy, other costs and demand.

Chart 2.20: While core goods inflation has eased, core services inflation has strengthened

Core goods and core services inflation (a)



Sources: ONS and Bank calculations.

(a) Figures in parentheses are CPI basket weights in 2022. Core goods CPI excludes energy, food, non-alcoholic beverages, alcoholic beverages and tobacco. Core services CPI excludes airfares, package holidays and education. Bank staff have adjusted for the estimated direct impact of changes in VAT and there is uncertainty around the precise impact of that adjustment. Core goods and core services do not sum to core inflation. Data to December 2022 and Bank staff projections are shown from January to June 2023.

Pay growth has strengthened further, and by significantly more than expected in November…

Annual growth in whole-economy average weekly earnings rose to 6.4% in the three months to November. Annual private sector regular pay growth – which excludes bonuses – picked up to 7.2% (Chart 2.21). That outturn was 0.7 percentage points stronger than had been expected in the November Report. On a three-month on three-month annualised basis, private sector regular pay growth has fallen back from its recent peak of 8.9% in July to 7.2% in November (Chart 2.21). This will slow the upward momentum in the annual rate.

Chart 2.21: Annual private sector regular pay growth has risen above 7%

Private sector regular pay growth (a)

Sources: ONS and Bank calculations.

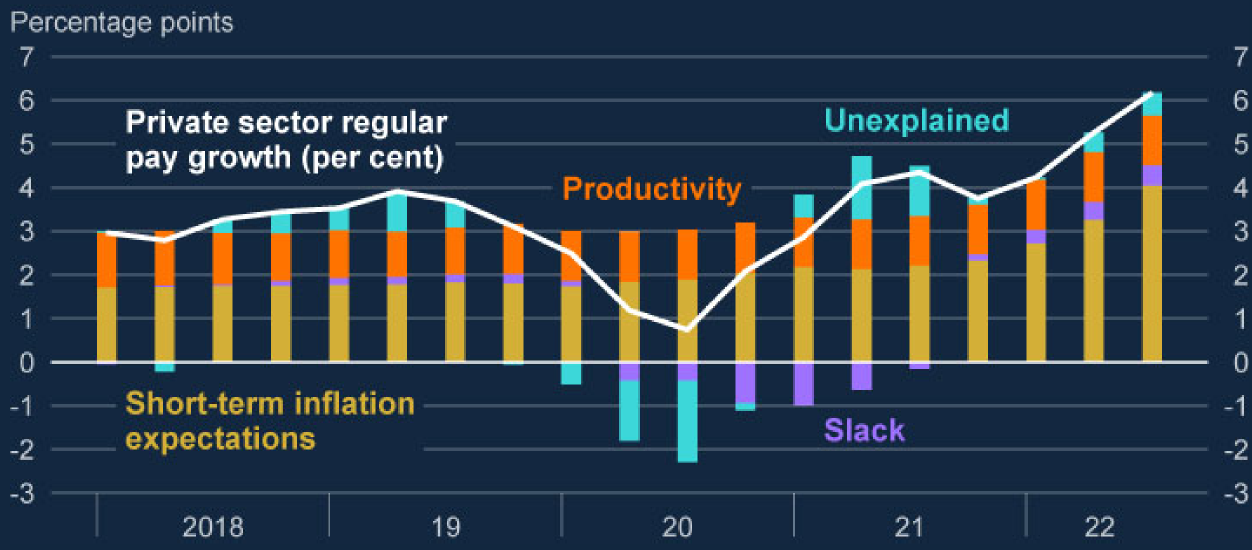
(a) Data are three-month averages. Latest data are the three months to November 2022.

…with the rise in inflation now the most important factor driving pay growth.

Models estimated by Bank staff indicate that the pickup in pay growth over 2022 has been driven by a rise in short-term inflation expectations (Chart 2.22). That in part reflects higher headline inflation itself – short-term measures of inflation expectations tend to move with actual inflation (**Rowe (2016)**). Respondents to the Agents' pay survey expected inflation to be the top factor driving pay settlements this year, compared with recruitment and retention difficulties last year (Box C).

Chart 2.22: Models suggest that the high inflation environment has been the most important factor driving the recent strength in nominal pay growth

Contributions to annual private sector regular pay growth (a)



Sources: ONS and Bank calculations.

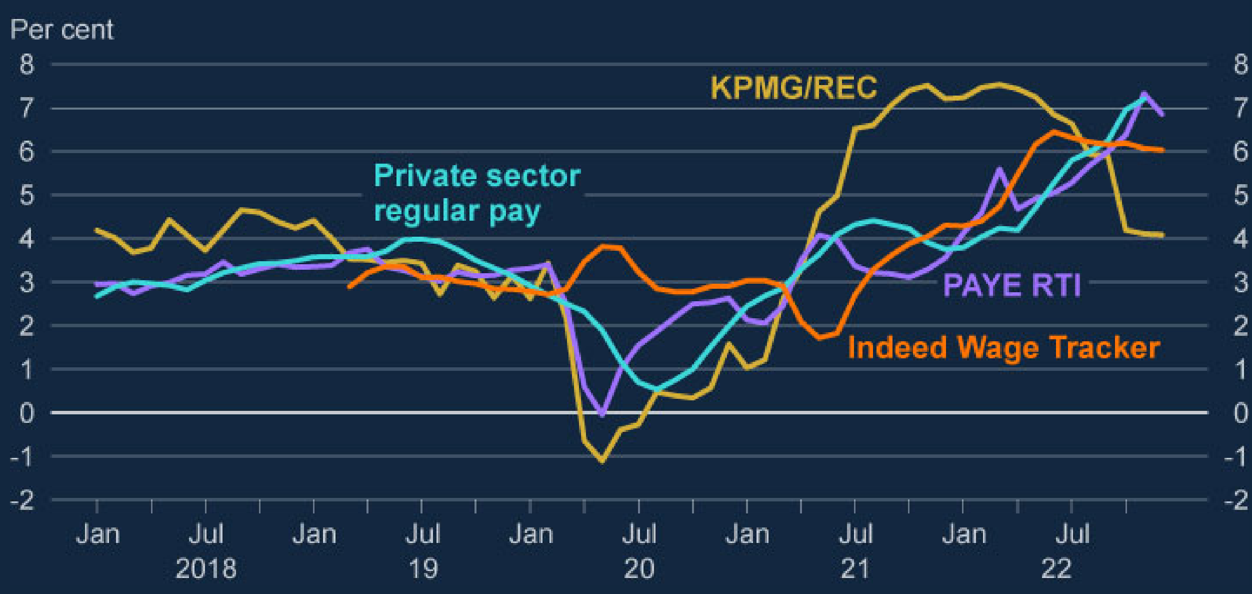
(a) Wage equation based on **Yellen (2017)**. Private sector regular pay growth is Bank staff's estimate of underlying pay growth between January 2020 and September 2022 and ONS private sector regular pay growth otherwise. Short-term inflation expectations are based on the Barclays Basix Index and the YouGov/Citigroup one year ahead measure of household inflation expectations. Since Q3, the YouGov/Citigroup survey has been based on updated response buckets. Slack is based on the MPC's estimate of the unemployment gap. Productivity growth is based on long-run market sector productivity growth per head. The unexplained component is the residual. Data are to 2022 Q3.

Annual pay growth is expected to flatten out at just over 7% in the near term.

Annual growth in private sector regular pay is expected to flatten out at just over 7% in coming months as inflationary pressures moderate. That projection is broadly consistent with the results of the latest Agents' pay survey, which suggests that average pay settlements in the first half of 2023 are expected to be lower than those made in the second half of 2022 (Box C). Some other indicators are also consistent with wage growth flattening off. For example, the Indeed Wage Tracker – which measures wages advertised in online job postings – has been broadly flat since the second half of last year, and HMRC PAYE RTI pay growth appears to have stabilised (Chart 2.23). The KPMG/REC permanent staff salaries index has fallen particularly sharply. This survey tracks new hires, whose pay offers tend to fall before existing employees, and so suggests that pay growth might ease later this year.

Chart 2.23: Some indicators of pay growth have levelled off or fallen

Indicators of annual pay growth (a) (b)



Sources: HMRC, Indeed, KPMG/REC UK Report on Jobs, ONS and Bank calculations.

(a) Private sector regular pay growth is Bank staff's estimate of underlying pay growth between January 2020 and September 2022 and ONS private sector regular pay growth otherwise. KPMG/REC shows permanent staff salaries. Pay as You Earn (PAYE) Real Time Information (RTI) shows median of pay growth. KPMG/REC is mean-variance adjusted to ONS private sector regular pay growth over March 2001–19. Latest data points are December 2022 for PAYE RTI, the Indeed Wage Tracker and the KPMG/REC index and the three months to November 2022 for private sector regular pay.

(b) On 15 March, the Indeed Wage Tracker line in Chart 2.23 was corrected.

Agency intelligence suggests that while many firms continue to pass through higher costs into consumer prices, some firms are finding this harder.

The extent to which rising labour and other costs affect consumer prices will depend on how firms respond. Agency intelligence suggests that while many firms are passing through higher costs to prices in order to limit the erosion of margins, it has become more difficult for some firms (Box C). For example, in the consumer-facing services sector, where demand is particularly sensitive to price rises, some of the rise in costs has not been passed through.

CPI inflation is expected to ease in 2023 H1 as base effects take hold. Inflation falls faster in 2023 than expected in November, primarily reflecting news on energy prices.

CPI inflation is expected to remain elevated in the near term, but to fall gradually to just over 8% in June (Chart 2.19).

The fall in CPI inflation over the next six months largely reflects earlier increases in energy and other goods prices (purple box in Chart 2.24) dropping out of the annual comparison. These are expected to be replaced by less sharp increases in prices than a year ago (gold box in Chart 2.24), which pushes down the annual growth rate. For example, the 20% increase in the EPG due to come into effect from April 2023 is smaller than the 54% increase in the Ofgem price cap in April 2022. So although household energy bills are due to rise further in April, the direct contribution of energy to CPI inflation is expected to fall. Survey indicators of costs, such as the S&P Global/CIPS UK composite input price PMI, also suggest that these cost pressures have moderated compared to a year ago.

Core CPI inflation – which excludes more volatile items such as energy and food – is projected to ease a little from 6.3% in December to 5.7% in June.

The near-term projection for CPI inflation is lower than in November, particularly in Q2, with lower inflation in that quarter primarily reflecting the level of the EPG being lower than the MPC's working assumption in the November Report (Box B). In the second half of this year, CPI inflation is projected to continue to fall faster than expected in the November Report. That largely reflects the substantial fall in wholesale gas prices (Chart 2.3) and oil prices (Chart 2.4) since then.

Chart 2.24: Previous sharp increases in prices are dropping out of the annual comparison and are expected to be replaced by less sharp increases

CPI inflation (a)

Sources: ONS and Bank calculations.

(a) Monthly CPI inflation rates show the rate of change in the level of the CPI index, which has been seasonally adjusted by Bank staff, relative to the previous month. The annual rate shows the rate of change in CPI inflation, which has not been seasonally adjusted, relative to the same month a year earlier. The annual rate of inflation is the compounded sum of the monthly rates. Data to December 2022 and Bank staff projections shown from January to June 2023.

Household inflation expectations have eased from their recent peaks, but they remain higher than their historical averages…

Both short and longer-term measures of household inflation expectations remain elevated, although they have fallen back from recent highs. After peaking at over 10% in August, one year ahead expectations in the YouGov/Citigroup survey have fallen to 5.4% in January. Expectations five to ten years ahead fell back to 3.5%, 1.3 percentage points lower than the August peak, although they remain above their 2010–19 average (Chart 2.25). At this horizon, fewer households expected inflation to be in the highest tails of the distribution compared to recent surveys. The share of respondents expecting inflation to rise by 6% or more fell from over 30% in August to around 20% in January, but remained higher than in previous years.

…and inflation expectations of firms and financial market participants paint a broadly similar picture.

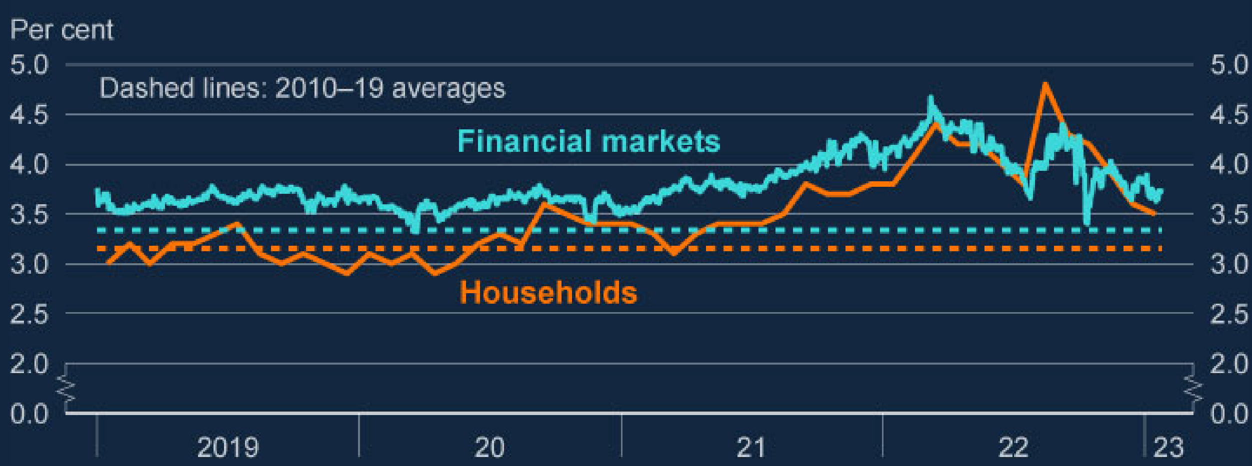
Firms' inflation expectations had also fallen back from recent peaks, but remain somewhat elevated. For example, two year ahead expectations reported in the CBI Distributive Trades survey have fallen from a recent peak of 2.5% in 2022 Q1 to 2.3% in Q4, but they remain above their historical average. And in the DMP Survey, expectations for CPI inflation three years ahead fell from a peak of 4.8% in September to 3.7% in January.

Financial market measures of medium-term inflation expectations have exhibited similar trends. Two-year inflation expectations, five years ahead have fallen relative to levels seen through most of last year, but they continue to be above their 2010–19 average (Chart 2.25). In the latest Market Participants Survey, the median expectation for CPI inflation was 2.0% in three years' time, 1 percentage point lower than in November.

In the Bank's survey of professional forecasters, the average two year ahead expectation for CPI is lower than in November, with CPI inflation now expected to be at 2.2% in 2025 Q1 (Annex).

Chart 2.25: Medium-term measures of inflation expectations have fallen but remain above historical averages

Household and financial market-based measures of medium-term inflation expectations (a)



Sources: Bloomberg Finance L.P., Citigroup, YouGov and Bank calculations.

(a) Data are not seasonally adjusted. The latest data point for the YouGov/Citigroup survey is January 2023. Since August, the YouGov/Citigroup survey has been based on updated response buckets. The financial market measure is the two-year inflation swap, five years ahead, which is linked to the RPI measure of inflation. The latest data point is 24 January 2023.

Box B: Fiscal policy since the November 2022 Report

Since the November Report, the Government updated its fiscal plans in the Autumn Statement, published on 17 November. This set out the Government's medium-term fiscal plan, and was accompanied by a forecast and assessment of the public finances by the Office for Budget Responsibility (OBR).

This box describes the main measures announced by the Government, including its updated energy support package, and the effects of these on the MPC's latest forecast.

The updated energy support package

At the time of the November MPR, the Government had announced that the Energy Price Guarantee (EPG) would be maintained until March 2023, limiting typical household energy bills to £2,500 per year. A Treasury-led review was ongoing to determine the level of support beyond that point.

As details of this policy, including the level of the cap, were not finalised at the time of the November Report, the MPC assumed that policy support beyond March 2023 would be halfway between the previous £2,500 cap and the level implied by futures prices under the prevailing Ofgem price cap method. The MPC assumed this support would be implemented as a price cap such that its effects would be reflected in CPI inflation, and that it would last for 18 months, ending in September 2024.

In the Autumn Statement, the Government confirmed that the EPG would be altered, limiting typical annual household energy bills to £3,000 between April 2023 and March 2024. This was slightly different to the assumptions used in the November Report projections. First, the £3,000 level of the cap was a little lower than in the November projection. Second, this level of support ends two quarters earlier than assumed in November. However, if recent falls in wholesale gas and electricity prices are sustained (Chart 2.3, Section 2.1), household energy bills under the prevailing Ofgem method are likely to be lower than the cap defined by the EPG from 2023 Q3 onwards (Section 2).

Since the Autumn Statement, the Government has announced further energy support for businesses. Previously, business energy unit rates for gas and electricity were capped and this form of support is due to expire at the end of March 2023. On

9 January, the Government announced its new Energy Bills Discount Scheme (EBDS), which will run from April 2023 until the end of March 2024. During this time, eligible firms will receive a unit discount on gas and electricity when wholesale prices exceed a defined threshold, subject to a maximum discount. There is also additional support for energy and trade-intensive industries.

Other fiscal measures announced in the Autumn Statement

The Government also announced a broader set of fiscal measures in the Autumn Statement. In the near term, the Government will provide an additional £12 billion of targeted cost of living support for households, and cuts in business rates worth £5 billion in 2023/24. There will also be additional spending on health and social care (between £5–£6 billion) and education (around £3 billion) in both 2023/24 and 2024/25. This support is partly financed by an increase in taxes on the energy sector.

Relative to the November Report, decisions taken at the Autumn Statement tighten fiscal policy by progressively larger amounts from 2024/25 onwards. The majority of that tightening occurs in the 2026/27 and 2027/28 fiscal years, which are beyond the MPC's three-year forecast period. Tax rises account for around half of the total fiscal tightening, with the rest stemming from cuts to current and capital departmental spending.

The effects of fiscal policy on the MPC's central projections

The differences between the EPG policy announced in the Autumn Statement and the assumptions used in the November Report have a direct impact on the CPI forecast in certain quarters. Relative to the November projection, typical household energy bills in 2023 Q2 are expected to be lower. The EPG, which is expected to bind 2023 Q2, is lower than the conditioning assumption in the November projection. This reduces CPI inflation by around 0.8 percentage points in 2023 Q2 and then acts as a weaker comparator a year later. Aside from these quarters, the differences in the contribution of energy to the CPI profile largely reflect changes in wholesale prices since November.

Relative to the November Report, the combined effect of the policies announced at the Autumn Statement boost the level of GDP by around 0.3% on average in the first year of the forecast. As fiscal consolidation begins in 2024/25, fiscal policy begins to weigh on GDP such that it is 0.4% lower on average in the final year of the forecast.

The effects on annual inflation at the end of each year of the forecast are relatively small. The Autumn Statement package increases inflation by 0.1 percentage point by the end of the first year of the forecast. It has little impact on inflation by the end of the second year and then as fiscal tightening begins to weaken demand, inflation is reduced by 0.1 percentage point by the end of the forecast.

The Government has since announced that it will deliver a Spring Budget on 15 March 2023. This will be accompanied by updated forecasts from the OBR. The MPC's forecast does not incorporate any further measures that may be announced then.

Box C: Agents' update on business conditions

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

Economic activity remained weak as the squeeze on real incomes stemming from higher energy prices weighed on demand, especially in consumer-facing sectors. Manufacturing and construction output volumes continued to fall and growth in business services turnover softened. Employment intentions were broadly flat.

Input cost inflation eased, reflecting sharp falls in the cost of freight and some raw materials in recent months. However, these effects were largely offset by upward pressure on energy prices and pay. Pay settlements in 2023 were expected to be broadly similar to those made in 2022 at just below 6%. Companies continued to pass costs through to prices, though contacts expected fewer and lower price increases in the coming year.

Consumer-facing contacts reported weaker sales volumes in December compared with a year ago, as pressure on household incomes weighed on demand.

Food retailers said that consumers remained keenly focused on price, with discounters continuing to gain market share. Sales of clothing and footwear were supported by the cold weather in December and seasonal demand for occasionwear. But sales of furniture and household goods continued to ease, with home improvement demand also impacted as consumers cut back on discretionary spending.

Consumer services firms also reported subdued demand. Contacts in the hospitality sector reported that revenue growth had been driven by price increases, while volumes were weak. Firms in leisure and entertainment reported increased cancellations – especially for subscription-based services. By contrast, demand for holidays abroad continued to recover modestly, though it remained below pre-pandemic levels.

Growth in business services activity softened; and manufacturing and construction output volumes continued to fall, reflecting lower consumer demand.

Business services contacts said that turnover growth weakened and was mostly driven by fee increases, while volumes growth was similar to a year ago in aggregate. While companies in audit, IT, insurance and consulting reported robust growth in prices and volumes, contacts providing services in corporate transactions, logistics and wholesale, construction, advertising and recruitment reported weaker demand. However, the value of exports of services continued to grow at a moderate pace, reflecting growth in demand from the US, the Middle East and Asia.

Manufacturing contacts reported a modest contraction in output volumes compared with a year ago. This mostly reflected a drop in demand for consumer goods and construction products. By contrast, defence and aerospace firms reported strong growth. Export demand for manufactured goods was flat on the year.

Construction output volumes also declined compared with a year ago. Contacts said this reflected weaker sales of new homes, which led small and medium-sized housebuilders to reduce output. A drop in demand for home improvement work also weighed on construction output. Uncertainty about the economic outlook depressed commercial building activity. According to some contacts, tighter credit availability also weighed on construction.

Credit availability remained tighter than normal for firms of all sizes and demand for credit fell as higher borrowing costs encouraged firms to reduce debt.

Contacts said that credit availability was tight for small and medium-sized enterprises (SMEs), with banks reported to require more security and taking longer to reach decisions on lending. By contrast, large firms were generally able to refinance bank debt, though it continued to be challenging to raise finance on financial markets, especially for non-investment grade firms. Credit was reported to be particularly tight for firms in property investment and construction.

Demand for credit weakened as rising borrowing costs and concerns about breaching loan covenants encouraged companies to pay down debts and preserve cash. Nonetheless, demand for debt-refinancing and working capital from SMEs increased. Insolvencies continued to rise, mainly among small firms, and were expected to increase further this year.

Contacts reported that uncertainty, weakening demand and tighter financial conditions had weighed on investment intentions. Many companies reported deferring investment decisions or delaying phases of investment projects. However, some larger firms with bigger cash buffers or ready access to finance planned to proceed with investment in order to gain market share.

Demand in the housing market and for commercial property continued to weaken owing to economic uncertainty.

Contacts said housing sales and new buyer enquiries fell sharply in late 2022, and there were concerns about demand in 2023. First-time buyers, in particular, were reported to have reduced budgets for home purchase, in part owing to affordability constraints.

Demand for rental properties continued to outstrip supply as the number of landlords choosing to exit the market increased. Contacts attributed this to a combination of factors including tax and regulation, higher maintenance and borrowing costs, and an inability to recoup increased costs in rents.

Contacts reported a broad-based fall in commercial property values, with developers and investors reluctant to commit to new projects and transactions due to a combination of high construction and financing costs. This was particularly the case among foreign private and institutional investors, for whom exchange rate uncertainty was also a factor.

The labour market showed early signs of loosening: companies paused hiring plans and recruitment difficulties eased. Pay settlements in 2023 are expected to be similar to last year.

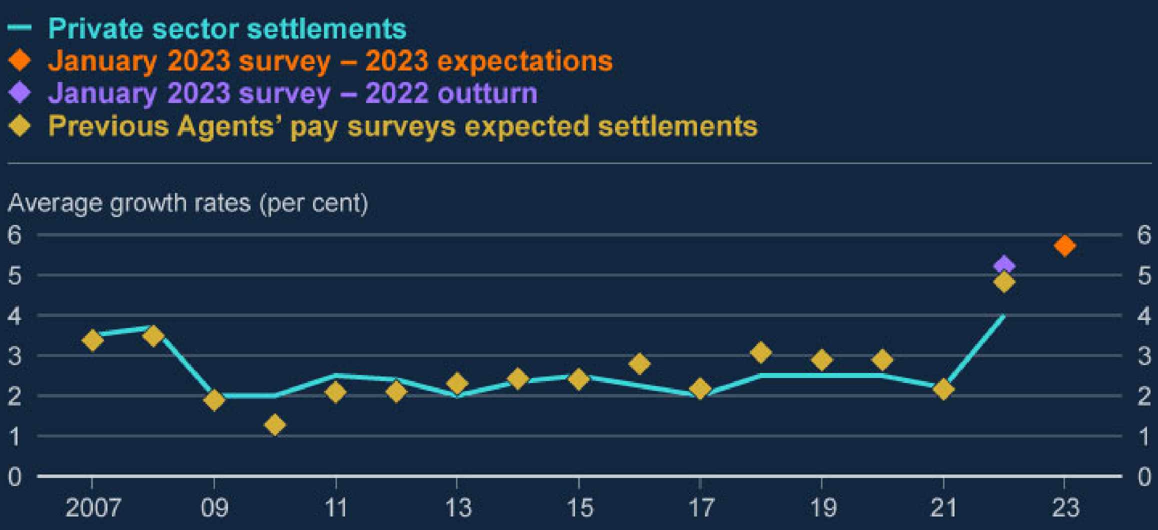
Many contacts said that despite increased economic uncertainty, they were reluctant actively to reduce headcount due to concerns they would struggle to rehire if needed. Most contacts said they would accommodate weaker demand through attrition or by reducing working hours. Only a small number of firms planned to make redundancies.

Companies reported a further easing in recruitment difficulties as well as lower turnover rates for staff. Nonetheless, hiring and retention difficulties remained above normal for many contacts in a range of sectors.

A survey conducted by the Agents showed that companies expected pay settlements in 2023 to be just under 6% on average, broadly similar to the average pay settlement made in 2022 (Chart A). However, there were tentative indications that pay pressure would moderate over the year: expected pay settlements in 2023 H2 were a little lower than in 2023 H1, although the sample size for settlements in the second half of this year was small. And one-off payments to employees were expected to be less common in 2023 than in 2022.

Chart A: Respondents to the Agents' pay survey expect pay settlements in 2023 to be broadly similar to 2022

Pay settlements (a)



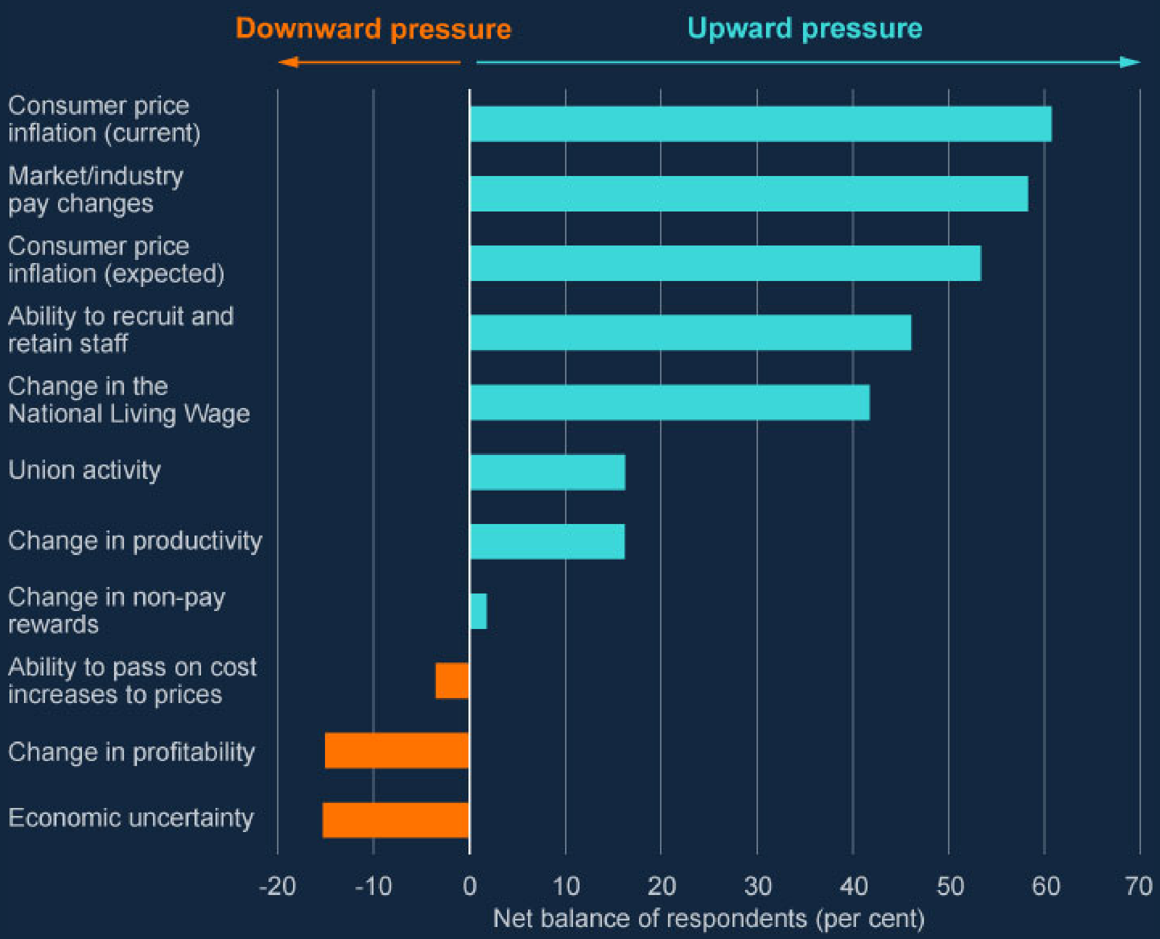
Sources: Bank of England, including the wage settlements database (which draws on information from the Bank's Agents, Incomes Data Research, Incomes Data Services, Industrial Relations Services, and the Labour Research Department).

(a) Companies were asked to state their average UK pay settlement for 2022 and their expected average UK pay settlement for 2023. Private sector pay settlements are a 12-month average based on monthly data.

Survey respondents expected consumer price inflation to be the main driver of pay settlements this year (Chart B), so pay pressures may subside if inflation eases. Companies also expected weak profitability and economic uncertainty to weigh on settlements.

Chart B: Current inflation expected to be the main driver of pay settlements in 2023

Factors affecting pay settlements in 2023 (a)



(a) 'What impact do you expect the following factors to have on your 2023 pay settlement?' When calculating these balances, reports of 'slight' pressure were given a 50% weight and reports of 'significant' pressure were given 100% weight.

Input cost inflation continued to ease for some goods, but was mostly offset by upward pressure from energy prices and pay. Firms continued to pass through costs to prices, but expect fewer and lower price increases in 2023.

Input cost inflation continued to ease, for example for steel, chemicals and timber and in particular freight rates. Contacts said upward price pressures were mostly driven by energy prices and pay.

As a result, many manufacturers reported making above-normal price increases, but said the size and frequency of those increases were starting to diminish. For business services firms, fee inflation continued to be driven by pay, though increases linked to fuel prices were starting to come down from their peak in mid-2022.

Retailers said food price inflation remained at around 15% but was expected to ease over the course of this year. Clothing and footwear price inflation was between 5% and 10%, but was also expected to moderate in 2023 as consumer demand weakens.

Consumer services contacts reported inflation stabilising at between 6% and 7%. Companies said they had not been able to fully recoup rising pay and input costs by raising prices. And many firms, in particular in hospitality, felt they had little scope to increase prices any further without having an adverse effect on demand.

3: In focus – How have the recent shocks to the economy affected potential supply?

Potential supply determines the level of output the economy can sustain without overheating and generating excess inflationary pressure, so it is an important concept for monetary policy. As it cannot be observed directly, the MPC regularly conducts in-depth assessments of the economy’s potential supply capacity. This In focus sets out the conclusions of the MPC’s latest assessment.

The economy has been hit by a series of significant shocks over recent years: the change in the trading relationship with the EU; the Covid pandemic; and the global energy price shock and the associated real income squeeze. Among other effects, these shocks were already weighing on the level of potential supply by the end of 2022 (Chart 3.1). Indeed the estimated margin of excess demand – the difference between measured GDP and estimated potential supply – is judged to be around ½% in 2022 Q4, despite the fact that GDP remains below its pre-pandemic level. These forces continue to weigh on potential supply growth throughout the forecast: it averages almost 1% a year, just over half of its growth rate in the decade before the pandemic. Supply growth is only expected to return towards its longer-term trend after the end of the forecast period, once the effects of these shocks have faded. GDP growth is projected to be even weaker, however, such that a degree of excess supply emerges during the forecast period.

Chart 3.1: The level of supply remains weaker than its pre-pandemic level and is only expected to recover gradually

GDP and estimated potential supply (a)

Sources: ONS and Bank calculations.

(a) Diamonds are projections for 2023 Q1, 2024 Q1, 2025 Q1 and 2026 Q1. Diamonds for GDP show MPC projections. GDP in 2022 Q4 is a Bank staff projection incorporating official data to November 2022. Data include the backcast for GDP. Estimated potential supply is derived using the MPC's projection for the level of GDP and the level of excess demand/supply as published in Table 1.A. Both GDP and estimated potential supply are indexed to GDP in 2019 Q4. For further information on MPC projections, see Table 1.A.

3.1: What is potential supply?

Potential supply depends on the amount of labour and capital available in the economy, as well as the efficiency with which businesses can combine them. Most simply, it can be thought of as the amount of labour available to work in the economy – potential labour supply – and the sustainable productivity of that labour – potential productivity. Potential supply cannot be observed directly. Estimates are inherently uncertain as it is difficult in practice to precisely identify which moves in labour supply and productivity also affect their potential levels, and therefore potential supply.

In the long term, potential supply growth represents where GDP growth is expected to settle after the economy has fully adjusted to business cycle shocks. These long-run trends are determined by slow-moving structural factors such as technological progress, capital accumulation and the size and skills of the labour force.

Over the shorter term, potential supply growth determines the pace at which output can rise without generating inflationary pressure. If GDP exceeds potential supply, there is excess demand in the economy and that puts upward pressure on inflation relative to the 2% target. If GDP is below potential supply, there is excess supply and firms might want to boost demand for their goods and services by slowing the pace of price rises. Because of the influence of shorter-run moves in potential supply on inflation, these form an important part of the MPC's assessment.

In the shorter term, potential supply can be affected by temporary factors, as well as slow-moving structural trends. For example, some firms were required to close in the early stages of the Covid pandemic. Closures were only enforced temporarily, so these had no effect on long-run trends in potential supply. But this change in supply needed to be taken into account when assessing spare capacity, as firms which were closed were unlikely to be putting downward pressure on prices. In the labour market, in periods where there are few job opportunities, some people may search for work less intensively or even leave the labour force entirely. If they then take up another opportunity, such as full-time study, that will mean they are unlikely to re-enter the labour market for a period of time. This would temporarily weigh on potential labour supply, but would not affect long-running trends if these people eventually returned.

Some changes in productivity and labour supply only affect actual GDP and not potential supply. Firms can temporarily work their existing resources harder to produce higher output, for example by increasing operating hours. But unless this is accompanied by workers wishing to work longer hours, this increase will not be sustainable and will feed through into rising inflationary pressure.

3.2: How has potential supply evolved over the past?

There was a slowdown in potential supply growth following the financial crisis…

Potential supply growth is estimated to have slowed to around 1.7% over 2010–19, from around 2.7% in the decade leading up to the financial crisis (Table 3.A).

Table 3.A: Decomposition of estimated potential supply growth (a)

	Average			Projection			
	1997–2007	2010–19	2020–21	2022	2023	2024	2025
Potential supply growth (per cent)	**2.7**	**1.7**	**-2.1**	**3.1**	**1.3**	**0.7**	**0.7**
of which, potential labour supply growth	0.7	1.1	-1.6	2.5	0.3	0.2	0.1
of which, potential productivity growth	2.0	0.5	-0.5	0.6	1.0	0.5	0.6

Sources: ONS and Bank calculations.

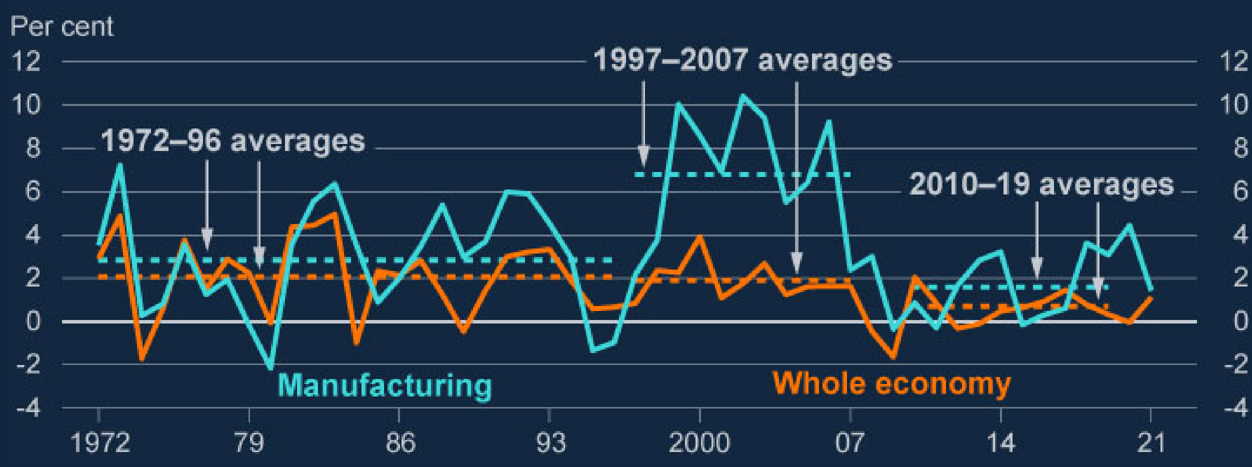
(a) Annual average growth rates. Percentage point contributions unless otherwise stated. Contributions may not sum to the total due to rounding. Data for 2022 onwards are projections consistent with the MPC's forecast.

…driven by marked and sustained falls in productivity growth as manufacturing productivity fell from elevated levels in the decade leading up to the financial crisis.

This was driven by a very marked and sustained fall in productivity growth, much of which the MPC has judged to be structural and therefore reflected in potential productivity (Table 3.A). Sectoral analysis reveals that productivity was being significantly boosted by very high growth in manufacturing sector productivity in the decade before the financial crisis, much faster than in the preceding 25 years (Chart 3.2). Following the financial crisis, manufacturing productivity growth fell back sharply.

Chart 3.2: Productivity growth was driven by exceptionally high growth in the manufacturing sector in the decade prior to the financial crisis and has slowed since

Annual growth in output per hour for the whole economy and the manufacturing sector



Sources: ONS and Bank calculations.

The slowdown in productivity is likely to reflect structural factors.

While the sources of the productivity slowdown are still debated, many hypotheses suggest that the slowdown after the financial crisis represented a structural change. Much of the slowdown was in intangible-intensive sectors (**Goodridge and Haskel (2022)**) and in manufacturing sectors that were research and development intensive. One candidate explanation is that, after a period of intense productivity growth, new ideas became harder to find and so a given amount of research yields relatively fewer improvements (**Bloom et al (2020a)**). Another explanation could be that, as the economy has become more intangible-intensive, there has been less innovation from firms at the technological frontier (**de Ridder (2019)**). Finally, globalisation and offshoring may have increased innovation before the financial crisis and fuelled a reallocation of employment towards technologically advanced firms (**Bloom et al (2016)**), which has faded as globalisation has slowed. None of these explanations would be consistent with potential productivity growth returning to the rates seen before the financial crisis.

Labour supply growth was strong in the decade following the financial crisis but had started to slow towards the end of this period.

Potential labour supply growth strengthened a little in the decade following the financial crisis (Table 3.A). This primarily reflected the end of the pre-crisis trend towards shorter average working hours, alongside continued strength in other components of labour supply, particularly population growth, much of which was driven by migration.

Labour supply growth had started to weaken in the years leading up to the pandemic. According to the ONS's 2020-based principal population projections, UK population growth has fallen since 2016, as migration has slowed. Lower net migration from the EU has only partially been offset by higher migration from outside the EU. In addition, over time, there has been a rising share of older people, who are less likely to participate in the labour market, in the population. That effect was being offset by factors boosting participation such as higher educational attainment and the rising state pension age for women (**Saunders (2022)**), but these were levelling off as the pandemic began.

A key question for the outlook is how persistent the effects of the recent series of shocks will be on potential supply.

The economy has been hit by a series of significant shocks: the change in the trading relationship with the EU; the Covid pandemic; and the global energy price shock and the associated real income squeeze. These shocks are all affecting potential supply. While the particularly sharp moves in potential supply brought about by Covid restrictions have faded (Chart 3.1), all of these shocks are continuing to affect potential supply. It is difficult to estimate the precise impact of each of these shocks individually given the quick succession in which they have hit the economy, alongside the inherent uncertainty in assessing supply capacity. Despite this, understanding how these shocks have affected supply capacity as well as demand, and how lasting these effects will be, is important for assessing inflationary pressure. The next section discusses the questions that the MPC focused on in its recent assessment.

3.3: What are the effects of the recent supply shocks and how persistent will they be?

Labour supply

Aggregate potential labour supply is determined by: the size of the population; how many of those people are likely to participate in the labour force; the equilibrium unemployment rate, and therefore how many of those in the labour force are actually in work; and the average hours that people tend to work. In the MPC's most recent assessment of potential labour supply, it focused on two important questions about the impact of the recent shocks. First, how quickly will the direct and indirect effects of the pandemic on potential labour participation unwind? Second, are there frictions in the labour market now and how will these frictions, and therefore the equilibrium rate of unemployment, evolve over the forecast?

Alongside the effects of the recent shocks, long-running demographic trends are also expected to weigh on potential labour supply growth in the medium term. The aggregate labour force participation rate is expected to trend downwards over the forecast period as the population ages, even though there is still some boost from rising participation rates within age categories. Average hours are also expected to fall gradually, as older workers tend to work shorter hours. The MPC's assessments of supply capacity are based on the ONS's current principal population projections, which do not include the results from the latest census or recent migration data. These principal projections are based on 2020 data and incorporate a slowing in population growth, similar to the MPC's previous assessments of labour supply. The ONS released a 'variant' of its 2020-based population projections on 27 January, after the conclusion of the MPC's assessment of supply, which incorporates estimates of international migration to June 2022. This variant points to stronger net migration over the past year. If the population were to instead evolve in line with the variant projection, labour supply growth would be stronger than assumed in the MPC's projections.

How quickly will the effects of Covid on labour participation unwind?

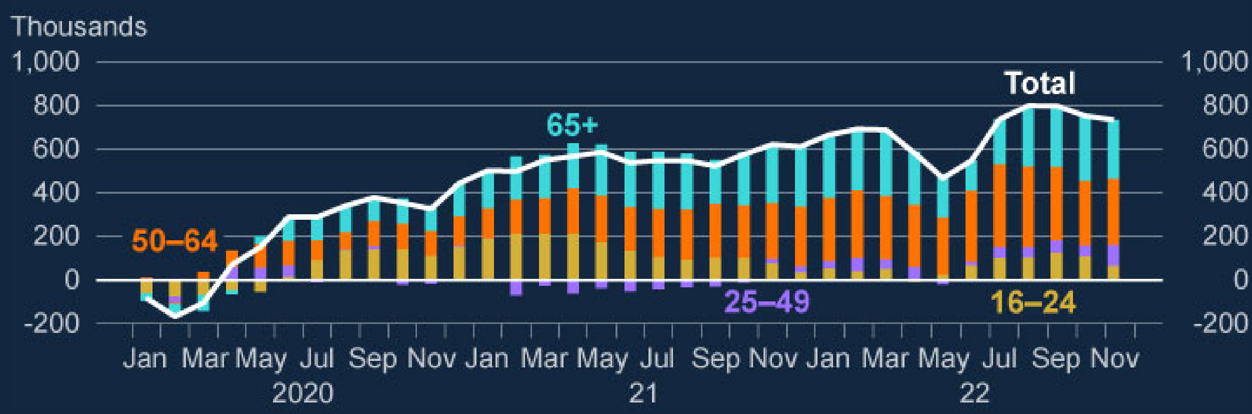
Labour market inactivity remains materially higher than before Covid…

Many people became inactive in the labour market during the pandemic, meaning they did not have a job and they were not actively searching for one. Unlike moves in employment and unemployment, the increase in labour market inactivity has not unwound as the economy has recovered (Section 3.1 of the **August 2022 Report**). Indeed inactivity has risen further over the second half of 2022 (Chart 3.3) and the inactivity rate is around a percentage point higher than in 2019 Q4. In other words, the proportion of people aged 16 and over that are participating – not inactive – in the labour market has fallen, which has weighed on labour supply.

Some of this had been expected as the population ages (Section 3.2): the rise in inactivity from those aged 65 and over reflects the growing number of people in that age bracket in the population. But the decline has been larger than could be explained by the ageing population alone. Indeed, those aged 65 and over can explain only around a third of the pickup in inactivity since 2019 Q4 (Chart 3.3).

Chart 3.3: Older people have driven the rise in labour market inactivity, reflecting both the ageing population but also declining participation rates below retirement age

Change in inactivity since 2019 Q4 by age (a)



Sources: ONS and Bank calculations.

(a) Changes from the three months to December 2019, based on those aged 16+.

…much of which appears to be driven by the effects of the pandemic.

An important judgement for determining potential supply capacity is how persistent this decline in participation will be and therefore how it will affect the underlying trend in the participation rate over the forecast.

Much of the decline in aggregate participation has been from those stating they are not active in the labour market due to long-term sickness. Covid and associated delays in treatment for other conditions are likely to have played a significant role. While this effect might be expected to fade over time, as those with long Covid recover and those shielding return to the labour force, there is little evidence of that since August when the MPC last examined these trends in detail (Section 3.2 of the **August 2022 Report**). This may point to the decline in participation persisting for longer than previously estimated.

Many of the people who left the labour force since the start of the pandemic were aged 50–64 (Chart 3.3). This suggests that early retirement could be playing a significant role. The retirement channel looks fairly small relative to other factors in the headline Labour Force Survey data, which measure the total number of people inactive in the labour market. But data on labour market flows, which measure the number of people moving from employment or unemployment into inactivity, suggest that there is a larger role for early retirement, with more of those already inactive reporting long-term sickness (**IFS**

(2022) and **House of Lords Economics Affairs Committee (2022)**). Those who have taken early retirement might not be expected to return to the labour market, unless there is a significant change in their preferences or circumstances.

Many of the people who have left the labour force appear unlikely to return soon…

There appears to be increasing detachment among those who have left the labour market. Over 80% of working age people who are inactive state that they do not want a job, almost 3 percentage points higher than before the pandemic. This increase has more than accounted for the rise in inactivity overall (**Haskel and Martin (2022)**). This suggests that these people are unlikely to re-enter that labour force any time soon.

…and this is judged to be weighing on potential labour supply currently, and could be contributing to excess demand in the economy.

Based on this evidence, the MPC judges that the fall in participation is also reflected in a decline in potential participation (Chart 3.4). As well as reducing potential labour supply, this fall will also affect demand. The balance of these effects is what matters for inflationary pressure. A gradual trend of more people reaching retirement age and leaving the labour market is unlikely to have a notable impact on inflationary pressure. But some of the pandemic-related effects may be more material. These effects have led to sharper falls in participation, which might not feed through to reduced aggregate spending, at least initially, and so may be contributing to excess demand. For example, some people who expect to be out of the labour force only temporarily may continue to spend while inactive.

Population ageing is the most important force weighing on participation by the end of the MPC’s forecast horizon.

Over time, these Covid effects are expected to fade somewhat. Long-term sickness is assumed to return gradually towards previous trends and those who have retired early reach official retirement age, when they would have left the labour market anyway. But a portion of the effects are still assumed to be weighing on potential labour supply by the end of the forecast period.

Even without the effects of Covid, the potential participation rate would have been expected to trend down over the forecast. As was the case in previous assessments of supply, the potential participation rate is expected to fall over time as the population ages, and the factors offsetting that trend come to an end (Section 3.2). By the end of the forecast, this long-running trend can explain most of the fall in the potential participation rate relative to 2019 Q4.

There are risks around the projection for the potential participation rate. On the one hand, the hit to real incomes from higher prices may constitute a marked change in circumstances for some households, causing some to return to the labour market. This could lead to potential participation recovering more quickly than assumed. On the other hand, if those who have left the labour market have changed their preferences for working or subsequently developed long-term sickness, they are less likely to be able to re-enter the labour market even if their financial circumstances changed. So far, the Bank's Agents have identified little sign of people returning to the labour market due to cost of living concerns.

Chart 3.4: The MPC judges that the fall in participation since the start of the pandemic will take some time to unwind and is therefore weighing on potential participation

Labour force participation and estimated potential participation (a)

Sources: ONS and Bank calculations.

(a) Quarterly data to 2022 Q3 based on those aged 16+. Estimated potential participation consistent with the MPC's projections for November 2021 and February 2023.

Are there frictions in the labour market now and how might these evolve?

The pandemic initially led to a deterioration in matching jobs to workers but estimates suggest this has since recovered.

Cyclical factors, such as changes in the mix of jobs and job seekers, can affect the unemployment rate consistent with stable wage pressures – the medium-term equilibrium rate of unemployment (Box 4 of the **February 2018 Report**). During the earlier stages of the pandemic, this rate was judged to have risen, weighing on potential labour supply. For example, the uneven impact of the pandemic led to job losses and reduced hiring being concentrated in contact-intensive sectors, such as hospitality. This led to an increase in mismatch across sectors between those seeking work and available vacancies. However, as hiring picked up in the worst-affected sectors, models that estimate sectoral mismatch suggest it fell back and was no longer elevated.

Nevertheless, there is some evidence of continuing frictions, which point to continued labour market tightness.

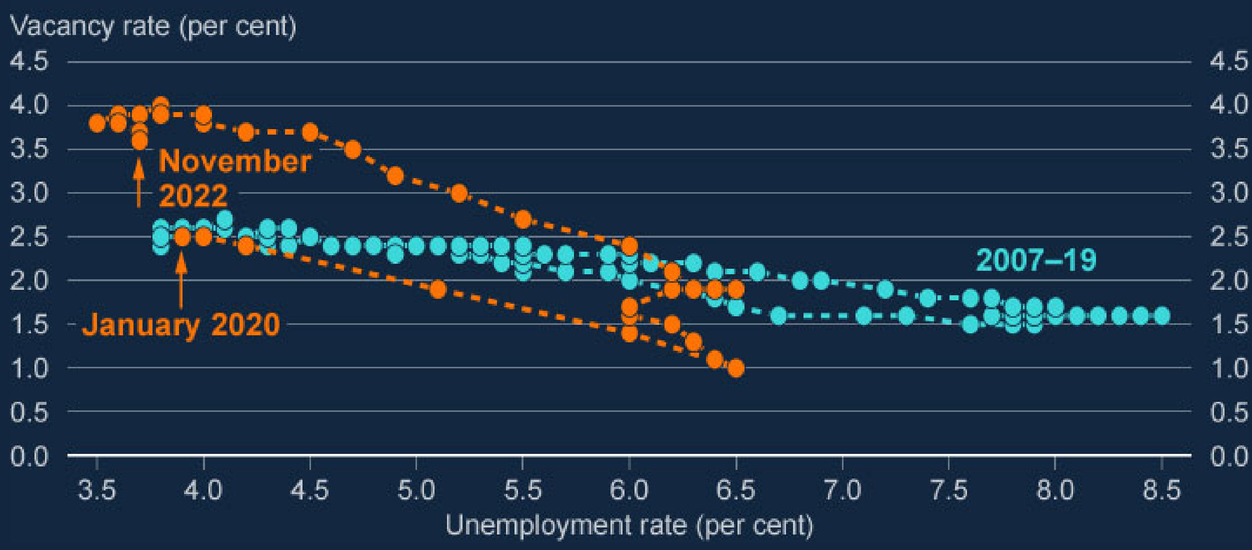
The Beveridge curve (Chart 3.5) shows the long-run level of unemployment consistent with different vacancy rates, holding everything else fixed. The current unemployment rate is only a little lower than in January 2020, just before the pandemic. But the vacancy rate is around 40% higher, and significantly above what the 2007–19 Beveridge curve would have implied. This might suggest that there has been a deterioration in the efficiency of matching jobs to job seekers. Indeed, the vacancies to unemployment ratio and the hiring rate of those unemployed, which usually move closely together, have become detached.

The reduction in matching efficiency could be driven by mismatch on different or more granular dimensions than those captured by measures of sectoral mismatch. It may also reflect a shortage of workers with particular skills. For example, some workers with certain skills, particularly those from the EU, who had left the UK during the pandemic are not expected to return.

This evidence suggests that the labour market is tight, and that it has been contributing to excess demand in 2022. The MPC judges that the medium-term equilibrium rate of unemployment is currently higher than the actual unemployment rate. But it is possible that there has been more persistence in labour market frictions and mismatch than assumed, which would push up on the equilibrium rate further.

Chart 3.5: The unemployment rate is higher than the previous relationship between vacancies and unemployment would suggest

Vacancy rate and unemployment rate (a)



Sources: HMRC, ONS and Bank calculations.

(a) Three-month moving averages. Latest data are for the three months to November 2022. Vacancy rate is the number of vacancies divided by total employment. The unemployment figures have been increased to reflect an MPC judgement that 10% of those furloughed between March 2020 and September 2021 were actively searching for work.

The equilibrium rate of unemployment is expected to rise as the economy weakens…

Unemployment is expected to increase alongside weakening GDP and once unemployment rises, it tends to remain elevated for a period. During periods of high unemployment, the number of unemployed people who have been out of work for a prolonged period typically increases. As workers experience longer spells of unemployment, the likelihood they will find a job falls (**Krueger et al (2014)**). This could be because the skills of unemployed workers deteriorate as they are not used. They may also reduce the intensity of their job search over time. Together these factors mean that the equilibrium rate of unemployment is expected to rise over the forecast due to the cyclical effects of the economic downturn.

…but these effects are expected to unwind over time.

In the long term, the equilibrium rate of unemployment is determined by slow-moving structural factors (Box 4 of the **February 2018 Report**). The MPC judges that the equilibrium rate of unemployment remains just above 4% in the long term. There is not sufficient evidence to interpret the current deterioration in matching efficiency as a structural, longer-term deterioration in the Beveridge curve, as recent data have been volatile and there has already been some recovery in the flows data.

Productivity

Potential productivity is determined by trends in capital deepening – the amount of capital available per worker – and total factor productivity – the efficiency with which capital and labour are combined to produce output. The MPC's recent assessment of supply capacity focused on how each of the series of shocks has affected these underlying variables. First, whether new evidence has affected its previous estimates of the effect of the changing trading relationship with the EU. Second, understanding the impact of Covid. And third, examining whether the scale of the recent energy price shock might have broader implications for potential productivity than previously expected. Typically, changes in the level of potential productivity are expected to be reflected in the level of output over time. But the MPC judges that a degree of excess demand has emerged in the economy since the middle of 2021, so firms are likely to have been working their existing resources harder than normal. This will have boosted measured productivity relative to its sustainable potential. As demand weakens over the course of 2023, this divergence is likely to unwind.

Does the evidence so far support the MPC's previous estimates of the effect on productivity of the changing trading relationship between the UK and the EU?

> **The MPC has previously expected the change in trading relationship with the EU to weigh on the level of productivity, with that effect building gradually over time.**

As set out in previous Reports, the move to a new trading relationship with the EU has been expected to weigh on potential productivity. Barriers to trade between the UK and EU have increased, and that is likely to result in lower trade between the UK and EU than there would have otherwise been. Around the time that the UK left the EU, these effects were expected to leave the level of productivity 3¼% lower in the long run, given productivity's well-established relationship with openness (Box 1 of the **November 2019 Report**). At the time of the MPC's previous assessment of supply in November 2021, it was expected that a sizeable proportion of this effect would be evident by the end of the forecast period.

Bank staff analysis suggests that these effects might have occurred more quickly than previously assumed.

Tracking the impact of EU withdrawal since the start of 2020 has been difficult, given the large impact that Covid has also had on the economy and changes in the way that UK goods trade data are collected. The source of the UK's goods trade data has moved from Intrastat, a survey of companies, to customs declarations. This change happened in January 2021 for goods exports and a year later for goods imports, resulting in structural breaks in both data series. The ONS have **recently revised** 2021 goods imports data, meaning the discontinuity in coverage now occurs at the same time as goods exports. In addition, data on goods imports from the EU have been inflated in the first half of 2022 by delayed customs declarations from the second half of 2021.

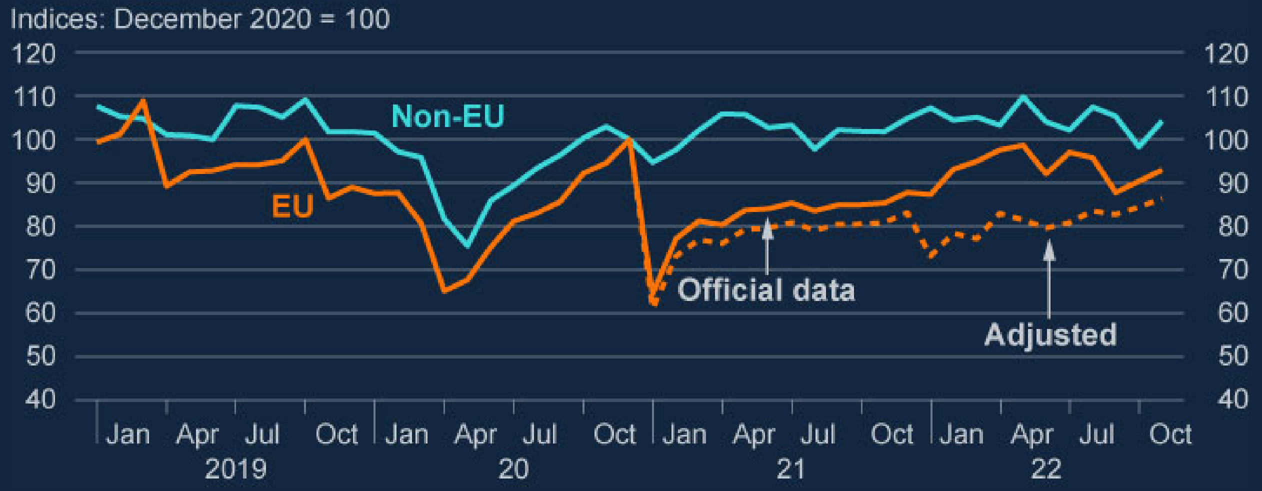
Bank analysis of trade in goods data suggests that, once the data have been adjusted for these issues, trade volumes have been weaker than implied by the official data since January 2021 (Chart 3.6). These adjusted trade figures are also weaker than previously expected, suggesting that the impact on trade has occurred somewhat more quickly than previously estimated.

In terms of services, trade with the EU – excluding the travel and transportation sectors that have continued to be affected by the weakness in the tourism industry following the pandemic – has been somewhat weaker than trade with the non-EU following the change in the UK's trading relationship with the EU. Recent trade in services have reduced the extent of this divergence however.

Overall, while there remain significant uncertainties, in the MPC's current forecast more of the previously estimated effect of EU withdrawal on productivity takes effect by the end of the forecast period than was the case previously. The MPC will continue to monitor evidence on the overall size of the impact.

Chart 3.6: Goods trade with the EU has been weak

Trade in goods (a)



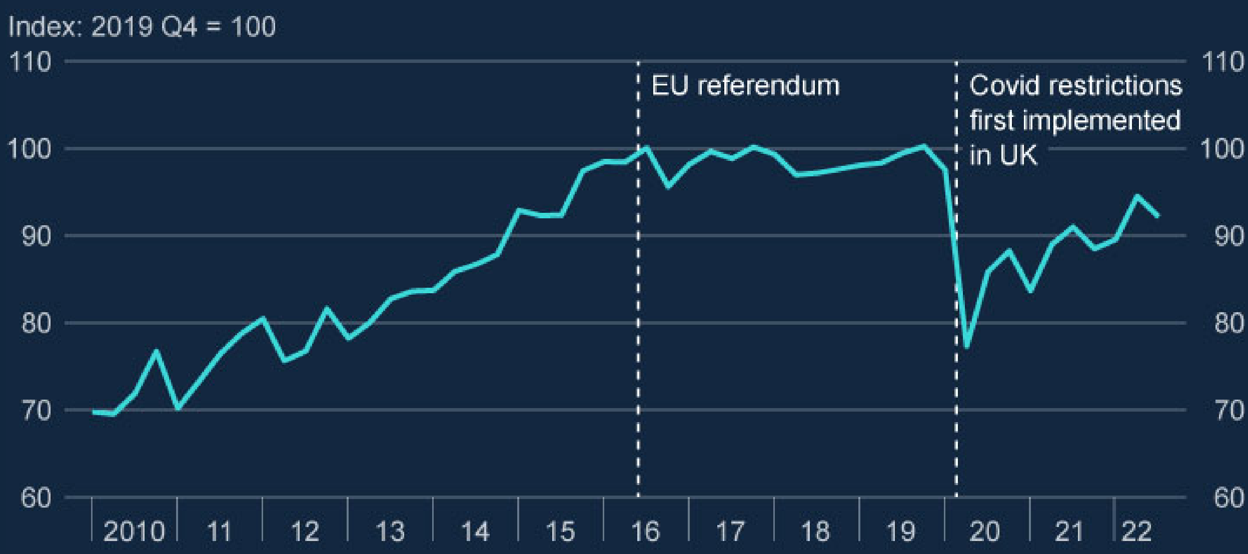
Sources: ONS and Bank calculations.

(a) All data exclude unspecified goods. Latest data points are for November 2022. Adjusted EU data account for late custom declarations and differences in coverage of the Intrastat survey and custom declarations. These adjustments would be expected to have minimal or no impact on measured GDP. Consistent with estimates from **HMRC** and as recommended by the ONS, an uplift of 6% for UK goods imports and 5% for UK goods exports has been applied to the pre-2021 data, to adjust for the wider coverage of custom declarations data relative to the Intrastat survey. Customs declarations on UK imports of goods from the EU over 2022 have been adjusted using mirror statistics from Eurostat to remove the effects of delayed declarations from 2021.

In addition, it is likely that Brexit has been affecting investment for some time. Business investment has been very subdued (Chart 3.7). This reflects a variety of factors (see Section 2.3), but some of the stalling after 2016 probably reflects the effects of Brexit, as resources were diverted to Brexit preparations and uncertainty around future trading relationships reduced capital spending. Lower investment affects potential labour productivity through reducing the amount of capital available per worker.

Chart 3.7: The level of business investment, which affects productivity, is very subdued

Business investment (a)



Sources: ONS and Bank calculations.

(a) Quarterly chained-volume measure to 2022 Q3.

What effects has the pandemic had on potential productivity and how long will they last?

Covid has affected potential productivity through business investment…

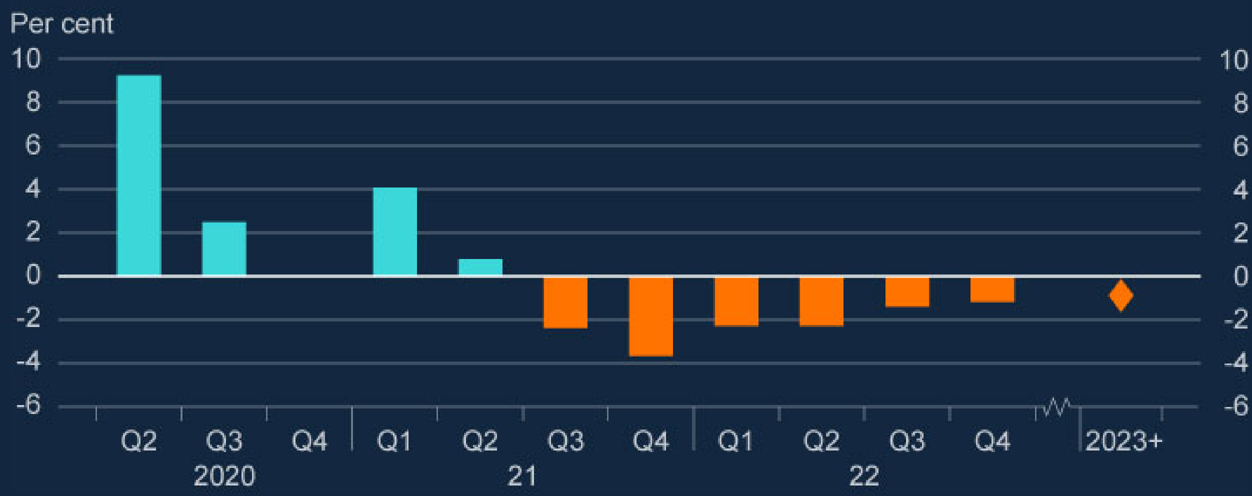
The economic uncertainty associated with the pandemic has probably weighed on business investment too. The level of investment fell considerably in the early stages of the pandemic and remains well below its pre-Covid peak. It is possible that some of this weakness may be due to measurement difficulties: business investment data are often revised. Indeed, recent research indicates that some investment, for example own-account software and research and development investment, has been much higher than previously estimated (**Martin (2022)** and **ONS (2022)**).

…and may also be weighing on total factor productivity.

Covid is judged still to be weighing a little on the level of potential productivity by the end of the forecast. Abstracting from the temporary volatility in aggregate productivity early in the pandemic, as the mix of output changed between firms, Covid appears to have had a lasting effect on the productivity of individual firms. Firms responding to the DMP Survey still expect the effects of Covid to weigh on productivity in 2023 and beyond (Chart 3.8). As well as through its impact on investment, Covid may be weighing on the level of potential productivity through total factor productivity. For example, workers may have foregone learning on the job if they were furloughed or laid off during the pandemic.

Chart 3.8: Covid has been weighing on productivity since the middle of 2021 and is expected to continue to do so in 2023 and beyond

Estimated impact of Covid on output per hour (a)



Sources: Decision Maker Panel (DMP) Survey and Bank calculations.

(a) Pre-Covid measures of firm-level productivity derived from company accounts data are projected forward using data from the DMP on the impact of Covid on variables such as sales, employment, and unit costs. Data were collected between July 2020 and April 2022. See **Bloom et al (2020b)** for further details.

There are ways in which Covid may have boosted productivity, for example if there is a boost from voluntary working from home, innovation or digital investment spurred by the pandemic (see Section 3.3 of the **November 2021 Report**). Recent research has identified some positive effects of working from home on productivity in some sectors (**Bloom et al (2022)**), although managers have less positive perceptions than workers (**Bloom et al (2023)**). There could be another boost to productivity if the pandemic has resulted in exits of lower productivity firms. While recent data point to rising firm exits, this rise followed a surge in firm entry during the pandemic (**Bahaj et al (2022)**), with the net effects on productivity estimated to be only marginal so far (**Bloom et al (2020b)**).

The impact on whole-economy productivity of recent developments in the public sector is difficult to disentangle. The way public sector output is measured, combined with the effects of the pandemic, means that it is dragging on measured aggregate output and productivity. Postponement of routine healthcare and temporary school closures caused sharp falls in measured real government output early in the pandemic, despite increased spending on healthcare and education. This is because, in the UK, the output of some government services that are consumed by individuals is measured using volume indicators, such as the number of hospital operations and the number of school pupils taught. The higher nominal spending was interpreted, mechanically, as implying an increased 'price' of government output. While nominal spending is significantly above its 2019 Q4 level, real government expenditure has only just returned to pre-Covid levels. These issues mean that measured real public sector output and hence productivity are weak. But this is not currently providing a guide to the underlying trend in public sector productivity, and therefore does not affect potential supply or spare capacity over the forecast.

Might the scale of the recent energy price shock be having a broader impact on productivity?

The energy price shock, and subsequent downturn, is also likely to weigh on investment over the forecast.

Business investment is expected to remain weak over the forecast period, given the economic outlook (Section 1). So the economic downturn over the forecast is expected to modestly depress potential productivity via lower capital deepening, over and above the impacts of Covid and the changing trading relationship with the EU. That said, evidence from the Bank's Agents suggests that higher energy costs have incentivised investment in energy efficiency or power generation for some firms.

It may also have broader temporary effects on potential productivity, but the evidence is mixed.

The unusually large size of the energy price shock and therefore the scale of adjustment required by businesses could lead to broader effects on potential productivity, beyond the standard effects on investment. This is supported by recent empirical analysis by the **OBR** and the **ECB**. These could occur, for example, via resource misallocation and disruption due to higher energy prices. Large increases in energy prices could also lead to lower utilisation of energy-intensive capital (**Harrison et al (2011)**). There is some evidence that the energy shock is affecting UK productivity. A material share of businesses reported that their production had been disrupted by the increase in energy prices in the ONS's Business Insights and Conditions Survey. And intelligence from the Bank's Agents suggests that costs at energy-intensive factories led to some shutdowns and sporadic disruption. But it is difficult to determine precisely whether changes to productivity, as a result of the energy price shock, will affect potential supply or are purely cyclical responses affecting output but with no underlying effect on potential supply. Overall, the MPC judges that there is some evidence that the rise in energy prices is temporarily affecting potential productivity, and therefore supply capacity, through these additional channels. This is likely to dissipate as businesses adjust their working methods.

3.4: What does this mean for potential supply now and over the MPC's forecast?

The effects of the recent shocks are weighing on potential supply growth…

The MPC judges that, so far, these shocks have already reduced potential supply by more than they have demand such that there was excess demand of ½% at the end of 2022 (Chart 3.1). These shocks are expected to continue to weigh on potential supply over the MPC's forecast; potential supply growth averages almost 1% over 2023–25, materially below average growth of 1.7% over 2010–19 (Table 3.A). GDP growth is projected to be even weaker than potential supply growth, however, such that a degree of excess supply emerges during the forecast period.

The slowdown in supply growth relative to 2010–19 is accounted for by very weak potential labour supply growth. The direct and indirect effects of Covid on participation are already weighing on the level of potential labour supply at the start of the forecast and then rising unemployment pushes up the medium-term equilibrium rate of unemployment. Long-running demographic trends are also weighing on potential labour supply growth over the forecast, as expected in previous assessments of supply.

Average growth in potential productivity over the 2023–25 period is 0.7%, broadly similar to 2010–19 (Table 3.A). This is in contrast to the MPC's previous assessment of supply in November 2021, where potential productivity growth was expected to settle at a higher rate of around 1%. Potential productivity growth picks up in the early part of the forecast as some of the temporary Covid-related weakness unwinds. But the effects of the shocks weigh somewhat on growth over the rest of the forecast, such that it does not reach that 1% rate during the forecast horizon.

…and the level of potential supply at the end of the forecast is expected to be lower than at the time of the MPC's previous assessment.

The level of potential supply at the end of the forecast period is expected to be lower than expected at the time of the November 2021 supply assessment. Some of this weakness is due to lower expectations for potential participation throughout the forecast, both due to population ageing and some effects of Covid that have not fully faded. The effects of the recent energy price shock, and subsequent real income squeeze, are also weighing on potential supply relative to November 2021, through the temporary drag on productivity and a rise in the equilibrium rate of unemployment. Finally, the effects of Brexit on trade are now estimated to be emerging more quickly than previously assumed, and that lowers productivity somewhat. By the end of the MPC's February 2023 forecast, the level of potential supply is estimated to be around 4½% weaker than expected at the time of the November 2021 Report.

Annex: Other forecasters' expectations

This annex reports the results of the Bank's most recent survey of external forecasters. Responses were submitted in the two weeks to 20 January. Expectations throughout the forecast period are summarised in Chart A.[1]

On average, respondents expected GDP to rise by 0.1% in the four quarters to 2024 Q1 (left panel, Chart A). Responses ranged from -1.5% to 1.9%. Four-quarter GDP growth was then expected to rise, on average, to 1.6% in 2025 Q1 and 1.9% in 2026 Q1. These forecasts are all higher than the MPC's modal projection.

External forecasters expected an unemployment rate of 4.6% in 2024 Q1, a little higher than the MPC's projection (middle panel, Chart A). The average external forecast falls to 4.5% in 2025 Q1 and 4.3% in 2026 Q1. By comparison, in the MPC's projection, the unemployment rate rises to 5.0% in 2025 Q1 and further to 5.3% in 2026 Q1.

CPI inflation was expected to fall, on average, to 3.9% in 2024 Q1, a slower decline than in the MPC's projection (right panel, Chart A). Responses at that horizon ranged from 2.5% to 5.1%. The average forecast was 2.2% for 2025 Q1 and in line with the target at 2% by 2026 Q1, both well above the MPC's projection.

Chart A: At the three-year horizon, external forecasters expected four-quarter GDP growth to be 1.9%, the unemployment rate to be 4.3%, and CPI inflation to be 2%

Projections for GDP, the unemployment rate and CPI inflation

Glossary and other information

Glossary of selected data and instruments

CPI – consumer prices index.

CPI inflation – inflation measured by the consumer prices index.

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, as well as estimated holdings of sterling bank bills, transit and suspense balances and inter-MFI differences. See '**Further details about M4 data**' for a fuller definition.

OIS – overnight index swap.

ONS HPI – ONS House Price Index.

PCE – personal consumption expenditure.

PMI – purchasing managers' index.

RPI – retail prices index.

Abbreviations

BCC – British Chambers of Commerce.

CBI – Confederation of British Industry.

CCS – Credit Conditions Survey.

CIPS – Chartered Institute of Purchasing and Supply.

EBDS – Energy Bills Discount Scheme.

ECB – European Central Bank.

EPG – Energy Price Guarantee.

EU – European Union.

FOMC – Federal Open Market Committee.

GfK – Gesellschaft für Konsumforschung, Great Britain Ltd.

HMRC – His Majesty's Revenue and Customs.

HR1 form – Advance Notification of Redundancies form.

IFS – Institute for Fiscal Studies.

IMF – International Monetary Fund.

ISM – Institute for Supply Management.

IT – information technology.

LTV – loan to value.

MPC – Monetary Policy Committee.

MSCI – Morgan Stanley Capital International Inc.

MTIC – missing trader intra-community.

NS&I – National Savings and Investments.

OBR – Office for Budget Responsibility.

Ofgem – Office of Gas and Electricity Markets.

ONS – Office for National Statistics.

PAYE – Pay As You Earn.

PNFCs – private non-financial corporations.

PPP – purchasing power parity.

REC – Recruitment and Employment Confederation.

RTI – Real Time Information.

S&P – Standard & Poor's.

SME – small and medium-sized enterprise.

VAT – Value Added Tax.

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.

1. For detailed distributions, see '**Monetary Policy Report – Download the chart slides and data – February 2023**'. External expectations for monetary policy are now covered in the **Market Participants Survey**.