UK Economic Outlook

27 April 2023

Contents

1

Summary

Key points

1 | **In our base case scenario, the UK avoids recession and gradually returns to subdued growth.**

Our modelling indicates the UK economy will narrowly avoid a recession in 2023.

The macroeconomic climate has improved significantly since our last report in September 2022 due to lower energy prices, a stronger sterling and looser financial conditions. As a result, our modelling indicates that the probability of a recession this year is now approximately one-third, down from three-quarters in September last year.

In our 'subdued growth' base case scenario, in which we assume relative policy certainty and subsiding inflation pressures, the UK economy avoids a technical recession, with an annual growth rate of 0.1% for 2023.

In our 'prolonged damage' downside scenario, in which we assume that at least one of the risks facing the UK economy materialises, the UK economy contracts by about 0.9% this year.

2 | **Inflation will fall rapidly in the next few months, starting in April.**

CPI inflation will fall to 3-4% by the end of 2023 and return to target in 2024.

Previous rises in energy and goods prices will fall out of the annual calculation and, in our view, tradable goods inflation will continue to soften. Also, the tightening of monetary policy since 2021 is likely to have an increasing impact in the coming months.

However, this inflationary episode has already had a significant, long-term impact on UK households and businesses. We estimate consumer prices will have risen by at least a cumulative 20% from the beginning of this inflationary episode until inflation drops back down to the Bank of England's (BoE) target. As a result, our modelling indicates the real wages of the average British worker will be more than £750 a year (2022 prices) lower by the end of this period. This is equivalent to no real wage growth for thirteen years.

3 | **Higher economic inactivity will remain a structural challenge for the UK economy.**

Population ageing will drive further rises in inactivity in the coming decades.

Our modelling shows that the recent rise in economic inactivity cannot be explained by population ageing alone. Other factors are at play, including higher levels of early retirement and rising long-term sickness amongst the 50-64 age group cohort.

However, once the effects from the pandemic subside, we expect that population ageing will drive further increases in economic inactivity.

By 2030, population change alone could see inactivity levels increase by more than two million, all else equal. The 65+ age group is expected to account for as much as 90% of this increase.

This analysis shows that the issue of rising economic inactivity is unlikely to go away anytime soon.

2

UK economic prospects

Growth outlook: Avoiding recession

The economic backdrop has improved significantly since our September 2022 report

The UK economy has avoided a recession

Our last UK Economic Outlook was released on 7 September 2022, at the height of energy market volatility and two weeks before the government's short-lived "Growth Plan 2022." Since then, the overall economic climate has improved significantly due to the following factors.

Sustained lower natural gas futures prices: In late August 2022, natural gas futures prices were pointing towards energy bills of around £7k a year for the typical household for the next year with no government intervention. Natural gas futures prices have since fallen significantly (see Figure 2.1). This is due to a combination of factors, including a mild winter, energy-saving measures and less unpredictable geopolitical risk. Our latest expectations indicate household energy bills are expected to average around £2.2k a year.

Though this is still high by historical standards, this should ease the pressure on households and their disposable income.

Stronger sterling: Sterling lost 11% of its value in trade-weighted* terms in the first few months of 2022. However, in the past six months, it has rebounded by about 7%, undoing around two-thirds of the losses experienced in 2022. This has and will continue to ease import-led inflation (including energy inflation). Imported goods and services directly account for one-fifth of the Consumer Price Index (CPI) basket. This statistic increases to around one-third when accounting for the import components of domestically produced goods.

Relatively looser financial conditions: At the height of the fallout from the mini-budget last September/October, financial markets were pricing a peak policy rate in the next 12 months of just over 5.5%. The latest estimates, however, show that most of the tightening of monetary policy has already happened with the expectation of financial markets' peak policy rate at c. 4.7% (see Figure 2.2).

These factors as well as stronger global growth, particularly in the Eurozone, have ensured that the UK economy has avoided a technical recession to date.

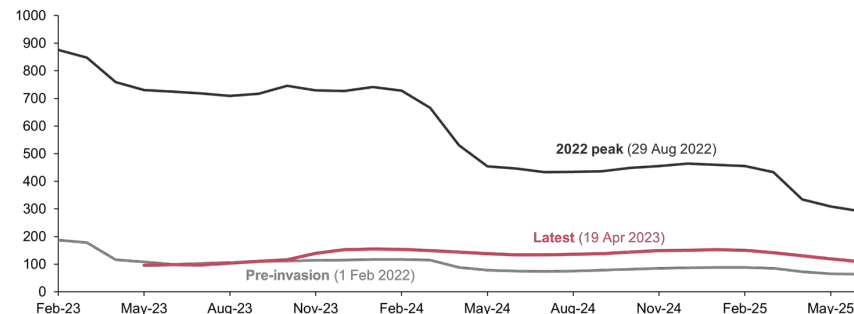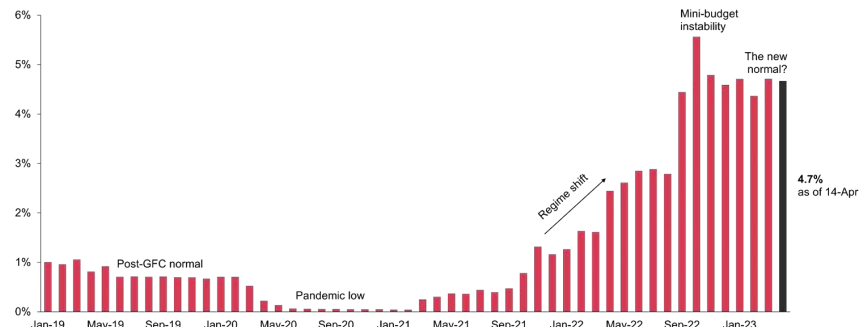**Figure 2.1: UK natural gas futures prices, pence/therm**

Figure 2.2: Market expectations for the peak Bank of England base rate

Box A: How exposed is the UK economy to turmoil in the US regional banking sector?

PwC UK Financial Conditions Index (FCI)

We have built a new index to track UK financial conditions. It is a summary index of eleven indicators broken down into five categories:

1. Sterling exchange rate
2. Interest rates
3. Equity prices
4. Corporate spreads
5. Credit spreads

This index is visualised in the chart to the right, where a higher score indicates tighter financial conditions. For more details on our approach, please refer to the appendix.
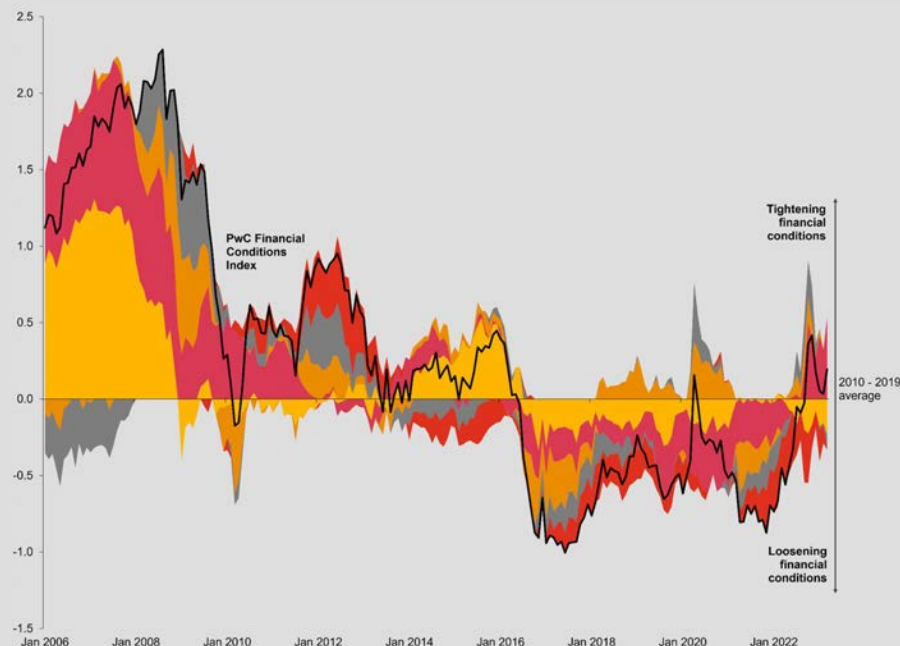
Recent developments

Mini-budget: The fallout from this episode saw our FCI reach heights not seen since 2016. This was primarily driven by an increase to interest rate expectations, as well as a pick-up in corporate spreads followed by a drop in the FTSE All Share Index. But since then, greater political stability has seen the index return to more normal levels.

Banking sector turmoil: The collapse of a mid-sized US bank has highlighted vulnerabilities in the US regional banking sector. This has resulted in a modest uptick to the FCI, owing mostly to higher volatility and a change to risk sentiment. There are likely to be further casualties from the transition to a higher interest rate environment, but the financial reforms put in place after the GFC mean that the banking sector sector is better placed to absorb adverse shocks.

Economic implications: Though financial conditions have loosened since the mini-budget episode, they remain materially tighter than they were prior to the pandemic. This is driving a rise in corporate insolvencies – now at their highest level since the GFC – as firms struggle to secure financing and pay off their loans due to higher interest rates. ONS data suggests the risk of insolvency is highest amongst small and medium-sized enterprises.

Figure 2.3: PwC UK Financial Conditions Index

Sources: PwC analysis, Refinitiv Eikon. Notes: *The z-score can be defined as the number of standard deviations of a variable from it's long-term (2010-19) mean. A positive (negative) value indicates tighter (looser) conditions than the 2010-19 average.

UK output has recovered to pre-pandemic levels, but its performance has been disappointing relative to the G7 economies (1/2)

Figure 2.4: Real GDP growth index (Q4 2019:100)
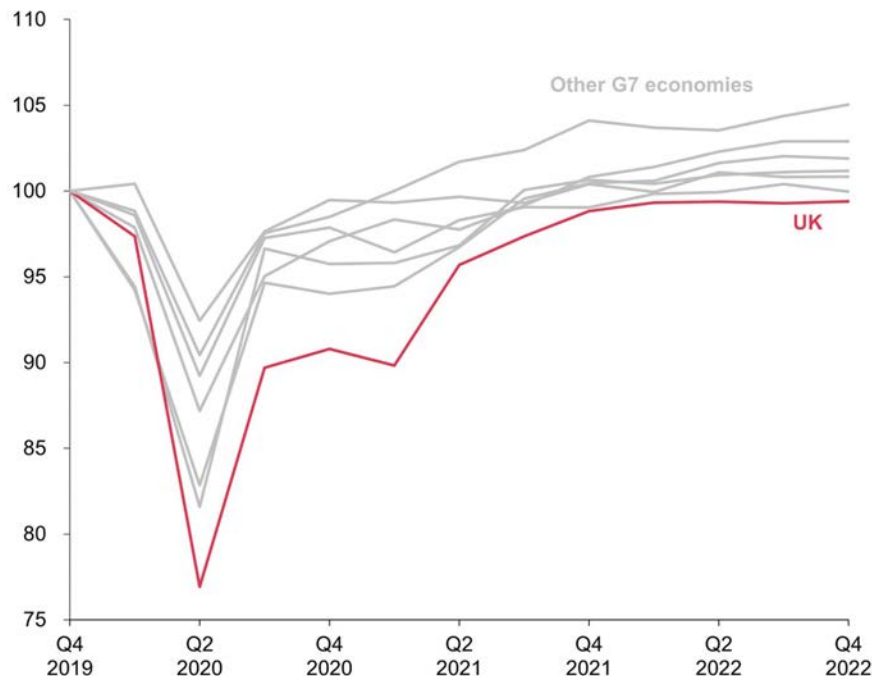
Sluggish economic performance

UK economic performance continues to lag behind G7 competitors. Based on the February 2022 monthly GDP data, the UK's national output has only just recovered to pre-pandemic levels, the slowest rebound in the G7.

The UK's per capita growth relative to the G7 is also disappointing. Figure 2.5 on page 10 shows that UK per capita growth has progressively slowed from 2.3% (1980 to 2007) to 1.4% (2010 to 2016) to 0.7% (2016 to 2022).

Economic growth matters as it has implications for businesses (ability to sell more), households (ability to consume more) and governments (ability to provide public goods and services such as schooling, health and defence).

The key point to observe is that slowing per capita growth has been a consistent story across the G7 since at least the 1980s. However, what is a relatively new phenomenon is that the UK, which had consistently outperformed the G7 on this metric, has been underperforming since 2016.

Unpicking the UK's growth problem

Why has the UK slowdown been more pronounced compared to other advanced economies? There are three main drivers that most economists agree on:

1. Investment: As we highlight in PwC's UK Productivity Tracker, one of the drivers of sustainable economic growth is productivity which, in turn, is heavily influenced by levels of investment. Today, UK businesses invest less than all of the other G7 advanced economies when you account for the relative size of their economies.

UK output has recovered to pre-pandemic levels, but its performance has been disappointing relative to the G7 economies (2/2)

Figure 2.5: Real GDP per capita, annual average growth rates

2.3% UK	2.0% G7		
		1.4% UK	1.1% G7
			1.1% G7 / 0.7% UK
1980 to 2007	**2010 to 2016**	**2016 to 2022**	
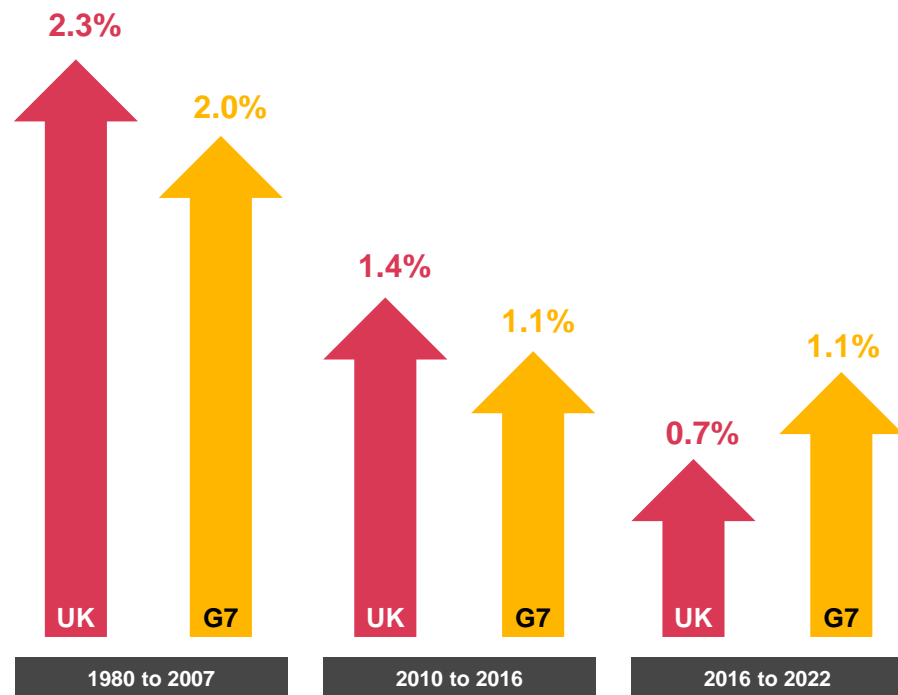
2. Structural changes: The OBR estimates that UK real GDP will be around 4% lower over the long-term than it would otherwise have been due to the structural changes caused by Brexit. The main transmission channels of this change have been through the hit to capital and trade flows, which have impacted productivity growth rates.

3. Surge in labour inactivity: A more recent trend has been a surge in economic inactivity in the UK, which has remained persistently elevated since the beginning of the pandemic with more than 200,000 additional inactive people.

Between Q4 2019 and Q4 2022, 50-64 year olds accounted for almost two-thirds of the rise in inactivity amongst the working-age population, with early retirement and sickness (or disability) being the main cause.

Attracting older workers with health issues back to work may help raise the UK's growth prospects. In part, this will include reducing NHS waiting lists - as of February 2023, there were around 7.2m people waiting to receive routine treatment. One Office of National Statistics (ONS) estimate suggested that around one-fifth of the additional inactive workers aged 50-64 are currently on an NHS waiting list. However, convincing early retirees to return may prove more difficult.

We estimate the direct economic impact of re-integrating this specific segment of the population could lead to an increase in GDP of around 0.2% to 0.3% over a relatively short period of time.

In our 'subdued growth' scenario, we expect the UK to avoid recession and return to a trend growth rate towards the end of next year

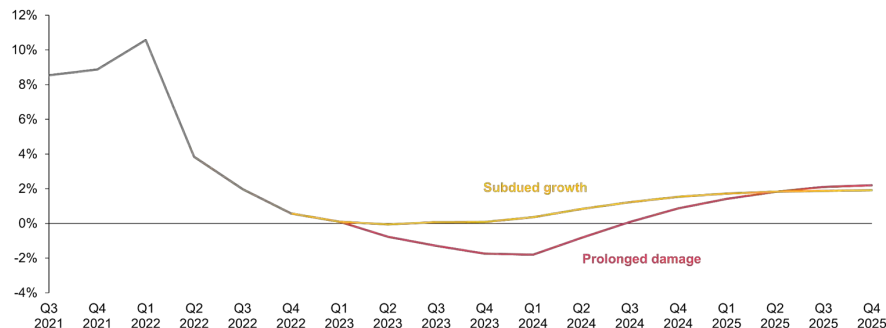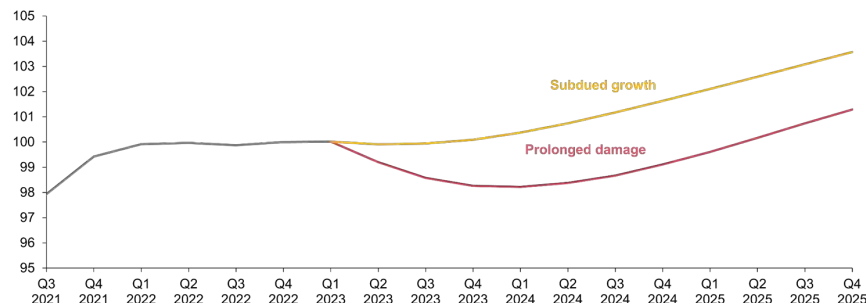**Figure 2.6: PwC real UK GDP projections, year-on-year growth, in %**

Figure 2.7: PwC real UK GDP projections, indexed (Q3 2022 = 100)

Base case scenario: Subdued growth

In this scenario, we assume relative policy certainty and that inflation subsides, consistent with our projections on page 20. The economy would reap the benefits of a return to more normal domestic and international conditions with a low degree of policy uncertainty (incl. industrial action).

In this scenario, which is our most likely scenario, we expect the UK to avoid a technical recession, defined as two successive quarters of negative growth, with an annual growth rate of 0.1% for 2023.

There is a possibility that economic activity could pick-up faster than expected in this scenario in the second half of the year, if real wage growth turns positive and this has corresponding effects on consumer sentiment and spending.

Downside scenario: Prolonged damage

Several key risks could prolong damage to UK economic activity, including further inflationary pressures driven by geopolitical changes, persistently higher services-led inflation or import-led inflation due to a weaker sterling. A more widespread and prolonged set of strikes across the public sector could also negatively impact economic activity.

In this downside scenario, the UK economy contracts for four quarters, leading to a peak-to-trough contraction in GDP of -1.8% (see page 12). This means that by the final quarter of next year, the UK economy would be 0.9% smaller compared to Q4 2022.

Our modelling indicates the probability of the UK entering a recession such as the one described above is around a third.

Table 2.2: PwC real UK GDP projections, annual growth rates, in %

	'Subdued growth'	'Prolonged damage'
2023	0.1%	-0.9%
2024	1.0%	-0.4%
2025	1.8%	1.9%

Our 'prolonged damage' scenario predicts a short-lived and shallow recession with peak-to-trough contraction in economic activity of around 1.8%

Figure 2.8: Changes in real GDP since first instance of contraction, PwC scenarios vs past recessions (excluding COVID)

Quarters since first instance of contraction
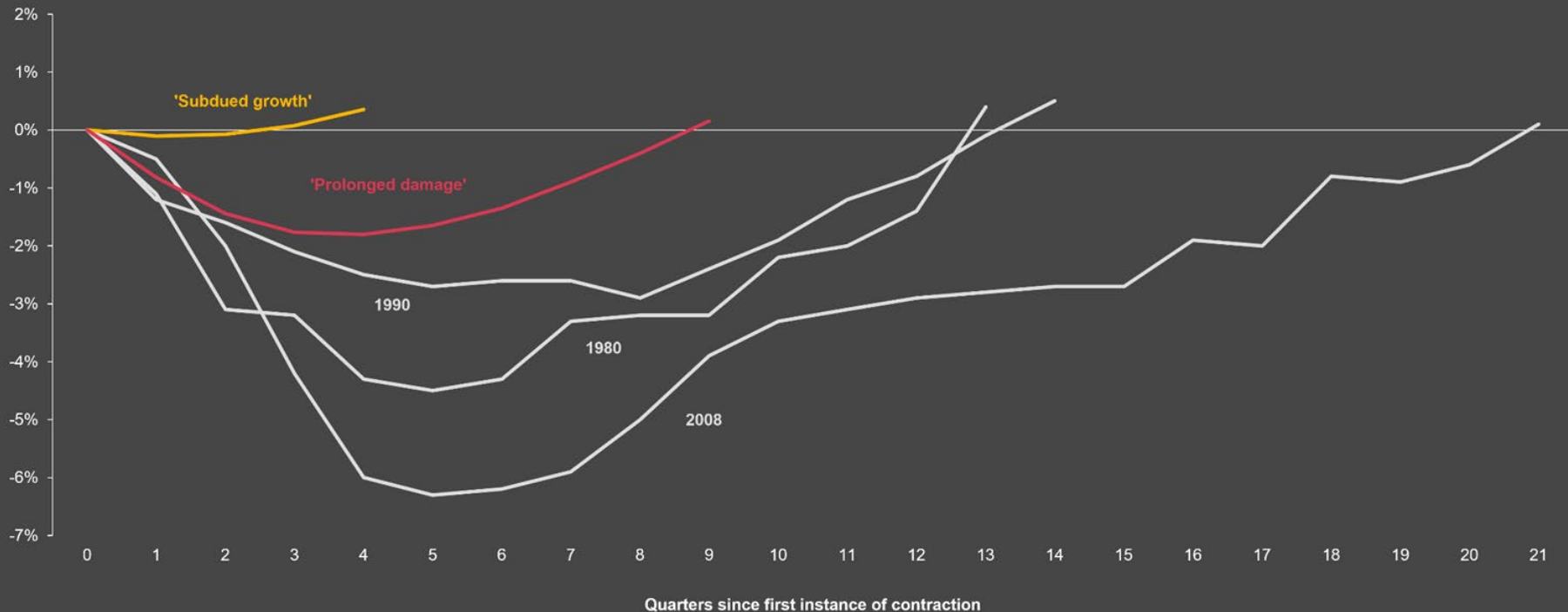
We expect the transport, ICT and professional services sector to grow at a relatively fast pace while retail could also pick up as the squeeze on real wages eases

Fast growth in consumer facing sectors

Figure 2.9 shows that the arts and entertainment sector was the fastest growing sector between December 2022 and February 2023. However, catch-up in consumer facing sectors is incomplete, as output remains around 10% below pre-pandemic levels. This suggests further potential for growth once labour supply issues are addressed.

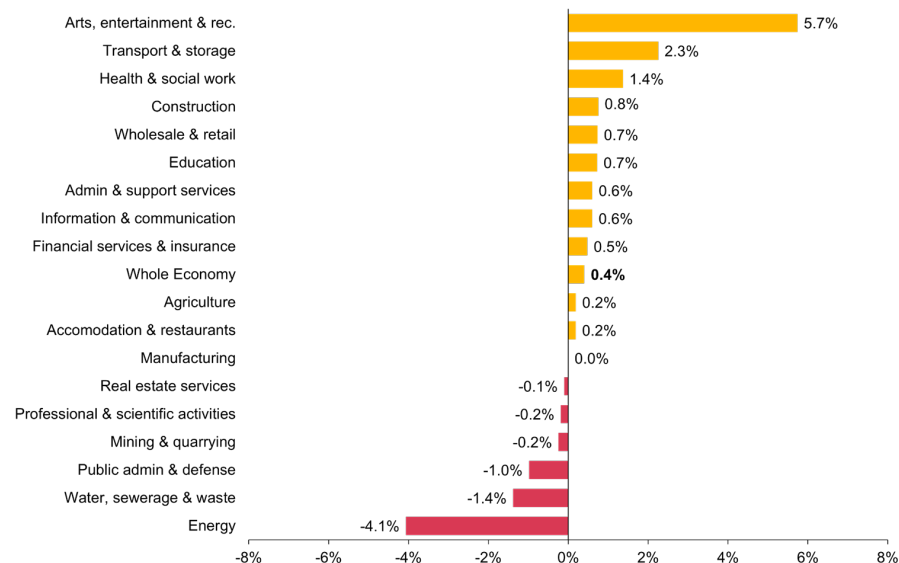## Transport, ICT, professional, administrative services and retail likely to drive growth in the near future

With the squeeze on real wages expected to ease towards the end of the year, we expect some cyclical sectors to pick up in activity. This is confirmed by our latest **Consumer Sentiment Survey (CSS)**, which finds that sentiment is on the rise. This should presage growth in retail spending in general.

The sectors we expect relatively strong growth:

- Transport and personal well-being as consumers pullback spending in other sectors
- ICT as businesses continue to digitalise their operations to deal with staff shortages
- Retail and wholesale trade as the squeeze on real wages eases

Real estate related services are likely to continue to struggle but as house price contractions plateaus (potentially by the end of summer this year), transactions could start to pick up towards the end of the year.

Figure 2.9: % change in real Gross Value Added (GVA), by sector, Dec 2022 to Feb 2023

Sector	% change
Arts, entertainment & rec.	5.7%
Transport & storage	2.3%
Health & social work	1.4%
Construction	0.8%
Wholesale & retail	0.7%
Education	0.7%
Admin & support services	0.6%
Information & communication	0.6%
Financial services & insurance	0.5%
Whole Economy	**0.4%**
Agriculture	0.2%
Accomodation & restaurants	0.2%
Manufacturing	0.0%
Real estate services	-0.1%
Professional & scientific activities	-0.2%
Mining & quarrying	-0.2%
Public admin & defense	-1.0%
Water, sewerage & waste	-1.4%
Energy	-4.1%

In the past three months, growth was broad-based across the UK, with London and Northern Ireland the fastest growing regions

Real GVA three-month growth estimates

0.2%   0.9%

Growth in the past three months was broad-based across the UK

Over the last three months, growth across the UK was widespread, led by London and Northern Ireland (see Figure 2.10). The capital's growth rate was around three times the rate recorded in Scotland and was boosted by growth in the arts and entertainment sectors (with catch up from the pandemic playing a significant role).

The North of England and the Midlands, however, grew at a relatively slower pace, partly because of their higher exposure to manufacturing, with some sectors still finding it challenging to deal with post-pandemic issues in this sector (e.g. the car manufacturing industry in West Midlands) and the associated supply chain.
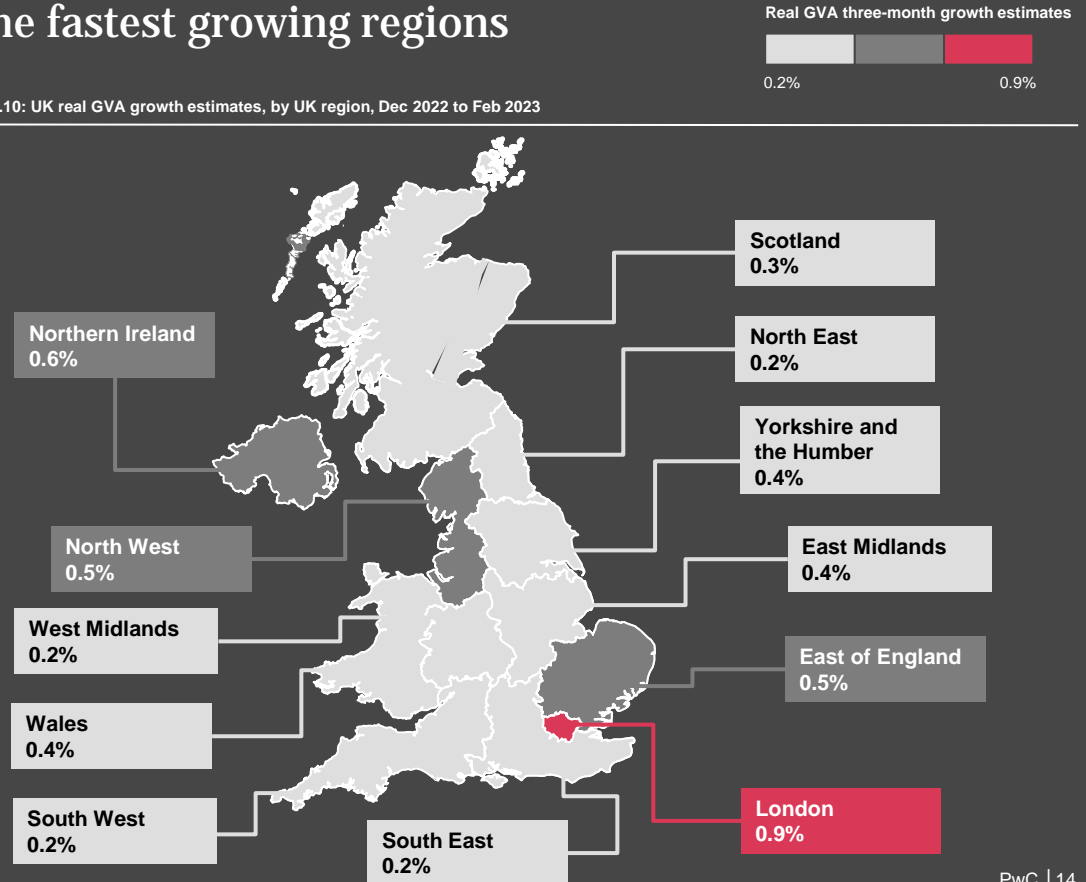
London and Northern Ireland expected to lead future growth

Going forward, we continue to expect London to lead growth due to a pickup in services demand (e.g. ICT and retail) but also because mobility in highly-skilled sectors remains high.

Certainty about the future relationship of Northern Ireland with Great Britain and European Union member states is also expected to help growth in Northern Ireland.

And finally, we could also see a pick-up in retail activity, which is broadly evenly distributed across the country, as inflation falls and real wages pick up.

Figure 2.10: UK real GVA growth estimates, by UK region, Dec 2022 to Feb 2023

Scotland
0.3%

North East
0.2%

Northern Ireland
0.6%

Yorkshire and the Humber
0.4%

North West
0.5%

East Midlands
0.4%

West Midlands
0.2%

East of England
0.5%

Wales
0.4%

London
0.9%

South West
0.2%

South East
0.2%

Inflation outlook: Past the peak

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The UK economy is past peak inflation, consistent with other advanced economies, but food and services inflation may be more persistent

The UK and other advanced economies are past peak inflation, but some pressures remain.

Since 2021, inflation has risen sharply in the UK and advanced economies. As we emerged from the pandemic, strong consumer demand, base effects (i.e. low inflation in 2020) and supply chain bottlenecks (driven predominantly by the imbalance between goods and services demand) drove inflation. Since early 2022, the Russian invasion of Ukraine caused the prices of internationally traded food and energy products to surge. The end result was UK CPI inflation hitting a 41-year high of 11.1% last year. However, it seems the worst is now over.

The story is similar in the Eurozone and the US. In late 2022, inflation peaked at 10.6% and 9.1% respectively, but has since fallen.

The UK's woes were largely due to rises in food and energy prices, which contributed to around 50% to headline inflation since early 2022. The same is true of the Eurozone, whilst US inflation was driven more by domestic and sector specific factors.

Most external pressures are already abating (e.g. natural gas prices, shipping costs) which have started to pull down the headline inflation rate. The pace at which this is happening in some economies is rapid. For example, in Spain, the headline consumer inflation rate dropped from around 10.7% in July of last year to 3.1% in March this year.

In the next few months, we expect the headline inflation rate in the UK to decrease at a rapid pace (see our projections on page 20). However, one area we will be monitoring is core inflation, i.e the inflation rate excluding erratic items, including energy and food.

One area of the economy which has been consistently running hot is the labour market, leading to relatively high nominal wage growth. The tightening of monetary policy should help gradually moderate some of this effect – vacancies have already started to drop. However, monetary policy operates with a lag, so we will be monitoring whether core inflation remains persistently high or whether it starts to also moderate in the coming months. We include further analysis on services inflation on page 19.

Figure 2.11: Percentage point contribution to UK consumer price inflation
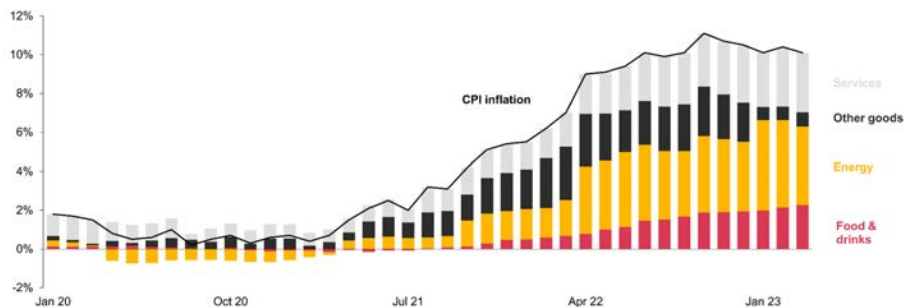

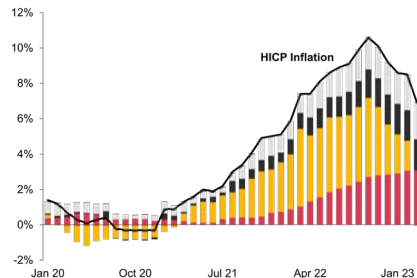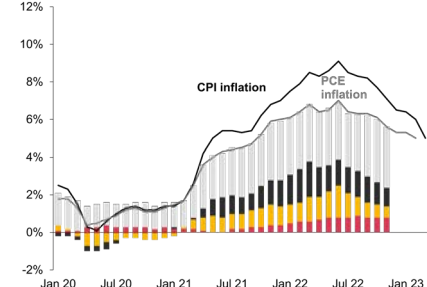**Figure 2.12: Percentage point contribution to Eurozone consumer price inflation**

Figure 2.13: Percentage point contribution to US consumer price inflation

Food, housing, health, as well as restaurants and hotels, continue to drive consumer price inflation

Where are inflationary pressures easing, and where do they remain strong?

Figure 2.14 shows that inflation pressures remain relatively broad-based across the economy.
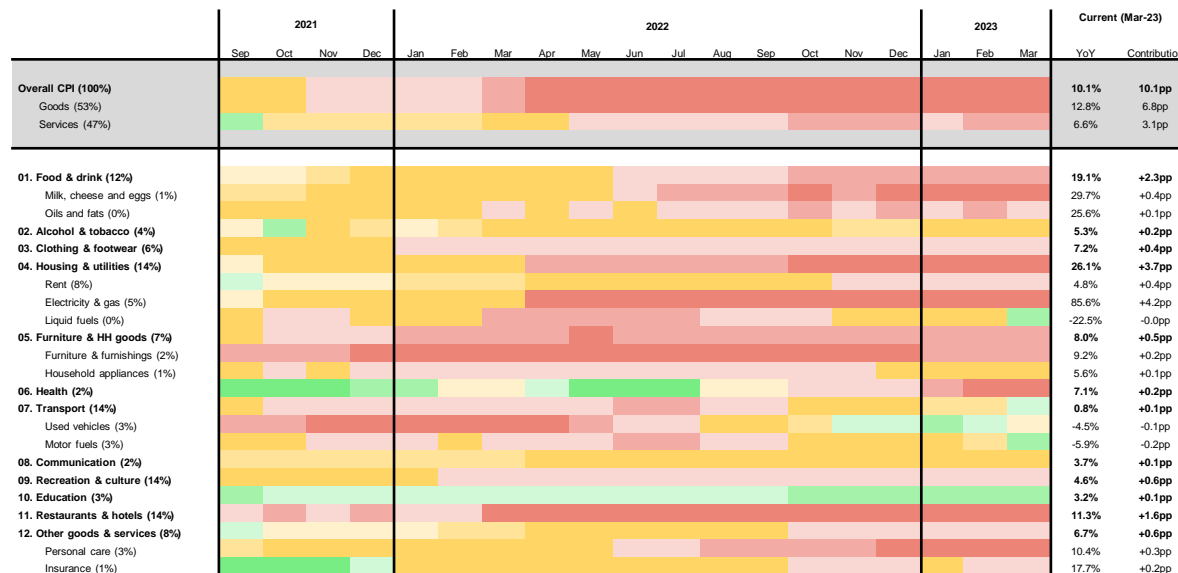
Energy inflation remains high, but we expect the lower natural gas prices to feed into lower retail energy prices in the next few months. We note that motor fuel inflation has responded faster as the price of petrol at the pump reacts quicker to changes in international prices (driven by the dollar-denominated price of crude oil and the sterling: USD rate).

Domestic food inflation remains at a multi-decade high, after rising steadily since mid-2021. While some momentum remains, global food prices, a leading indicator of domestic prices, have fallen by 22% in dollar terms over the last year, suggesting pressures may ease in coming months.

Finally, we also find that inflation in private healthcare services is also growing at a fast pace. We suspect this could be fuelled by higher demand for private healthcare.

Low inflation pressures | High inflation pressures

Figure 2.14: Annual Consumer Price Inflation (CPI) heatmap

	YoY	Contribution
Overall CPI (100%)	10.1%	10.1pp
Goods (53%)	12.8%	6.8pp
Services (47%)	6.6%	3.1pp
01. Food & drink (12%)	19.1%	+2.3pp
Milk, cheese and eggs (1%)	29.7%	+0.4pp
Oils and fats (0%)	25.6%	+0.1pp
02. Alcohol & tobacco (4%)	5.3%	+0.2pp
03. Clothing & footwear (6%)	7.2%	+0.4pp
04. Housing & utilities (14%)	26.1%	+3.7pp
Rent (8%)	4.8%	+0.4pp
Electricity & gas (5%)	85.6%	+4.2pp
Liquid fuels (0%)	-22.5%	-0.0pp
05. Furniture & HH goods (7%)	8.0%	+0.5pp
Furniture & furnishings (2%)	9.2%	+0.2pp
Household appliances (1%)	5.6%	+0.1pp
06. Health (2%)	7.1%	+0.2pp
07. Transport (14%)	0.8%	+0.1pp
Used vehicles (3%)	-4.5%	-0.1pp
Motor fuels (3%)	-5.9%	-0.2pp
08. Communication (2%)	3.7%	+0.1pp
09. Recreation & culture (14%)	4.6%	+0.6pp
10. Education (3%)	3.2%	+0.1pp
11. Restaurants & hotels (14%)	11.3%	+1.6pp
12. Other goods & services (8%)	6.7%	+0.6pp
Personal care (3%)	10.4%	+0.3pp
Insurance (1%)	17.7%	+0.2pp

Columns (months): 2021 — Sep, Oct, Nov, Dec; 2022 — Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, Dec; 2023 — Jan, Feb, Mar; Current (Mar-23) — YoY, Contribution.

Diverging consumer price inflation pressures will likely create winners and losers depending on spending habits and exposure

Inflation pressures continue to diverge, exposing the limits of CPI

Figure 2.15 shows that the gap between the CPI basket item with the highest and the lowest inflation rate has increased significantly during the current high inflation episode. This means that there is greater variability than is typical during normal times - exposing the limits of CPI as a comprehensive measure of consumer price inflation.

Crucially, for households, this means there is likely to be greater variability in the inflation rates faced by different groups (e.g. low vs high earners, renters vs homeowners, etc.) due to their different spending patterns. For instance, lower earners face higher inflation rates as they spend proportionally more on food and energy.

Likewise, for businesses, the risk of high cost pressures eroding their profit margins is higher, where long-term contracts are indexed to a broad-based measure like CPI or PPI (Producer Price Inflation). This is because their cost base may be exposed to higher inflation pressures than the headline inflation indicators capture.

Figure 2.15: Minimum and maximum growth rates of components making up the CPI basket compared to long-term averages

UK Economic Outlook   Sources: PwC analysis, ONS
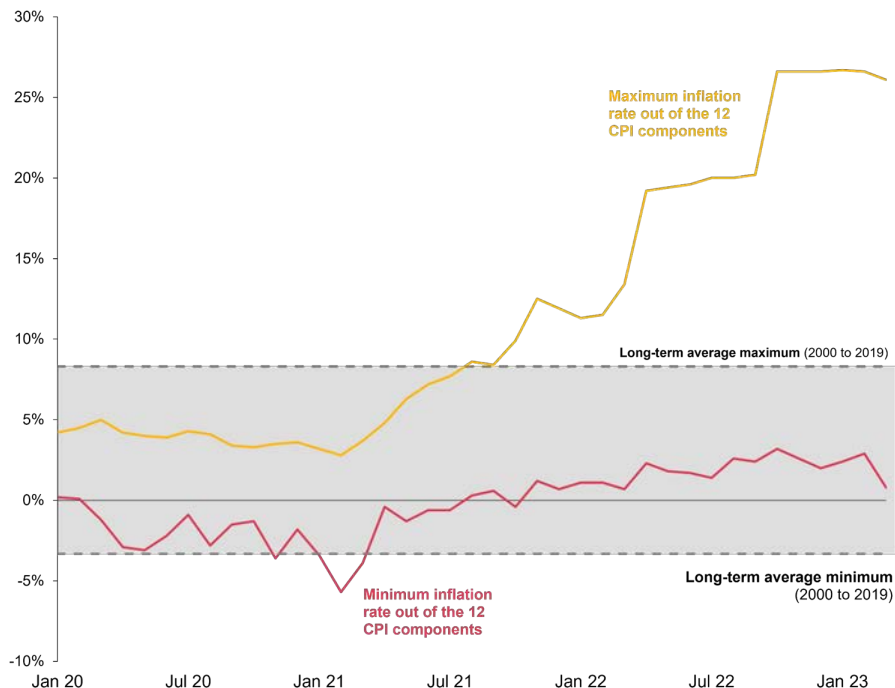
Services inflation will determine the future path of monetary policy

Inflation persistence considers how long it takes for inflation to return to its long-term average following a shock. Given the lag between monetary policy and inflation, policy makers tend to focus on tackling persistent rather than transitory price pressures. The latter is typically beyond the control of central banks.

Figure 2.16 shows the persistence and volatility of different CPI basket components. We find that services inflation tends to be less volatile and more persistent compared to goods inflation.

Goods inflation tends to be more cyclical

Goods are heavily traded across borders and as such they are more likely to be impacted by global rather than domestic conditions. As international supply bottlenecks have eased (e.g. the easing of lockdown restrictions in China and international logistical strains dissipating), goods prices inflation has begun to soften, falling from 14.8% in October 2022 to 12.8% in March 2023.

Services inflation tends to be more persistent

Services inflation was 6.6% in March and we expect it to remain strong. Services inflation tends to be more persistent as wages are 'sticky' and tend to make up a large proportion of costs for services firms. This is especially the case in the context of UK's tight labour market with unemployment close to a fifty-year low and strong nominal wage growth (5.9%*).
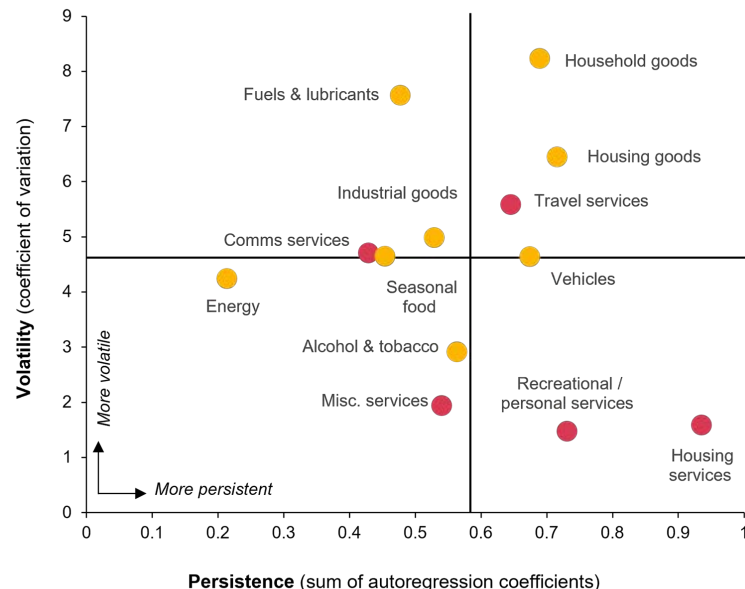
We expect inflationary pressures to continue shifting away from core goods inflation towards more persistent services inflation over the coming months.

> "
> If there were to be evidence of more persistent pressures,then further tightening of monetary policy would be required."
>
> **Bank of England Monetary Policy Committee Meeting Minutes**
> 22 March 2023

Figure 2.16: Persistence vs volatility of select CPI inflation components, seasonally adjusted**

Key: ● Services ● Goods

Sources: PwC analysis, ONS. Notes: *This is the annual growth in whole economy total pay in the three months to February 2023; **Persistence is measured by the sum of the coefficients of an autoregression for each inflation component, while volatility is measured by the standard deviation of each component divided by its mean.

Our modelling predicts that CPI inflation will return to the BoE's target by the end of 2024

We expect CPI inflation to fall back to the BoE's 2% target by the end of 2024

After peaking at 11.1% in late 2022, we expect inflation to fall sharply over the next year, reaching the Bank's 2% target late in 2024.

In large part, our projections reflect that previous rises in energy and goods prices will fall out of the annual inflation calculation. We expect wholesale energy prices to stabilise at current levels and tradable goods inflation to soften as supply chain disruptions have largely eased and the cost of production of these goods continues to drop. Also, the Bank's policy rate hikes since the end of 2021 are likely to have an increasing impact on real economic activity in the coming quarters.

As mentioned, this is likely to be partially offset by robust domestic inflationary pressures, including the persistence of services inflation, and potentially higher food prices.

If our projections materialise, consumer prices will still have risen by more than one-fifth for the average UK consumer by the end of 2024 relative to the start of 2021.

Figure 2.17: UK Consumer Price Inflation, projections from 2023 Q2
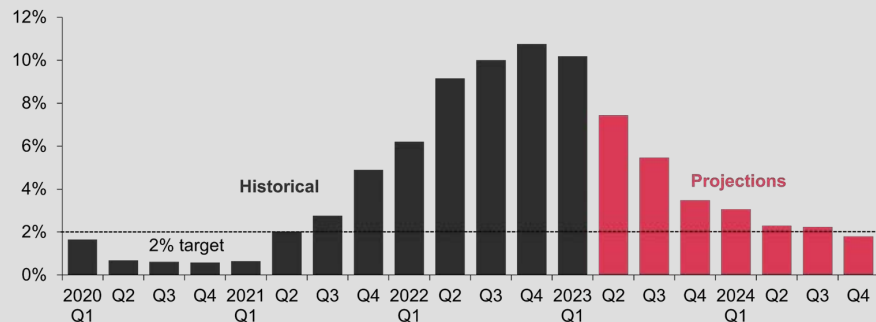
Figure 2.18: UK consumer prices, cumulative increase from 2020 Q1

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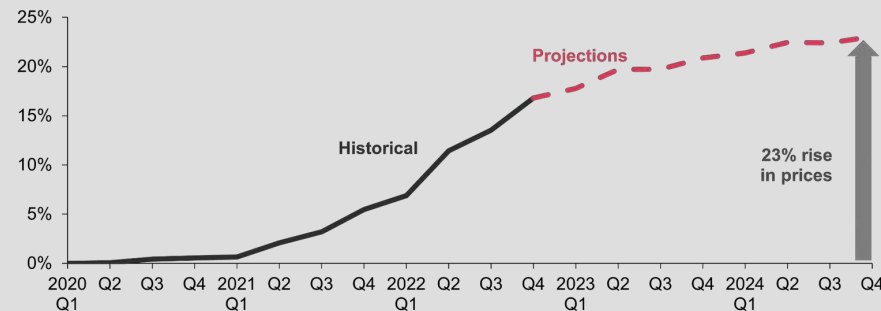
If our projections materialise, prices will have risen by at least a cumulative 20% for the average UK consumer by the end of 2024 compared to the start of 2021."

The squeeze on real wages is almost over, but living standards may fall further due to the freeze on income tax thresholds

The squeeze on real wages is almost over, but living standards may fall further due to frozen income tax thresholds.

As wholesale energy prices continue to fall, firms and households will see their gas and electricity bills reduce. We expect the average annual household energy bill to fall below the EPG to just under £2.2k by Q4 2023, much lower than the £6.5k forecasted in September 2022.

Most of the squeeze on real wages has already taken place. But our analysis suggests that by the time inflation has returned to target, average real wages will have fallen by a cumulative 2.5% (equivalent to more than £750 a year). This means no real wage growth for thirteen years.

However, households' living standards will continue to be squeezed. Income tax thresholds have been frozen up to 2027-28, which effectively acts as a progressive real income tax rise. Across all years, the freeze will create an additional 3.2m new income taxpayers and draw 2.1m existing taxpayers into the higher-rate tax band, according to the OBR. This is likely to weigh on consumer spending more than would have otherwise been the case.
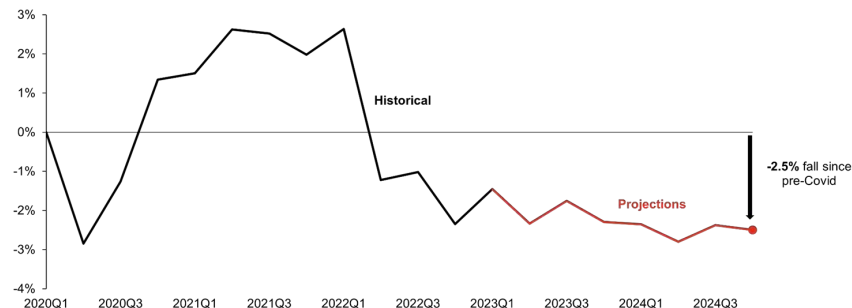
Figure 2.19: Household energy price cap projections
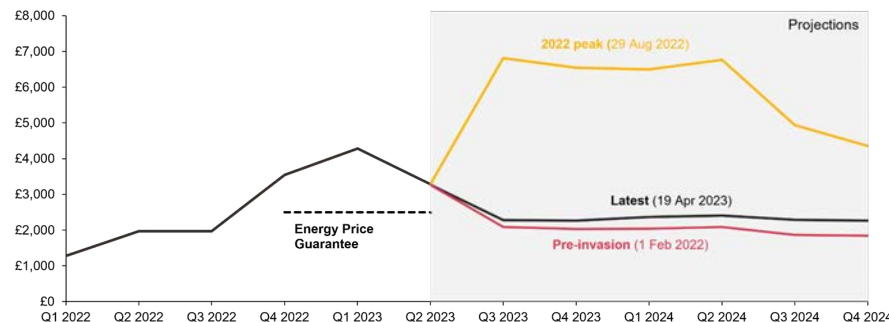
Figure 2.20: Real average earnings, change from 2020 Q1 levels

-2.5% fall since pre-Covid

UK Economic Outlook   Sources: PwC analysis, OBR, Ofgem

PwC │ 21

2.3

Labour market: Inactivity to remain high

Labour market conditions remain tight and economic inactivity is still well above pre-pandemic levels

Labour markets are showing signs of loosening but remain tight by historical standards, while inactivity remains high

The unemployment rate peaked at 5.2% during the pandemic and labour market inactivity rose, particularly among older workers, due to early retirement and long-term sickness. Unemployment has since fallen back to fifty-year lows, but employment remains 123k below pre-pandemic levels due to higher inactivity.

The labour market is showing initial signs of loosening. Unemployment has risen slightly to 3.7%, vacancies have fallen 14% from their record highs in 2022 (but still remain well above pre-pandemic levels), and recruitment difficulties have eased somewhat. Despite slowing labour demand and employment growth, the UK labour market remains tight by historical standards. And labour market inactivity remains materially higher than pre-pandemic.

As growth weakens, we expect a modest rise in unemployment. This is likely to lag any contractions in GDP as labour hoarding meaning vacancies are likely to fall further before firms cut staff.

Figure 2.21: Change in UK unemployment, employment & economic inactivity, March 2020 to Jan 2023, in 000s
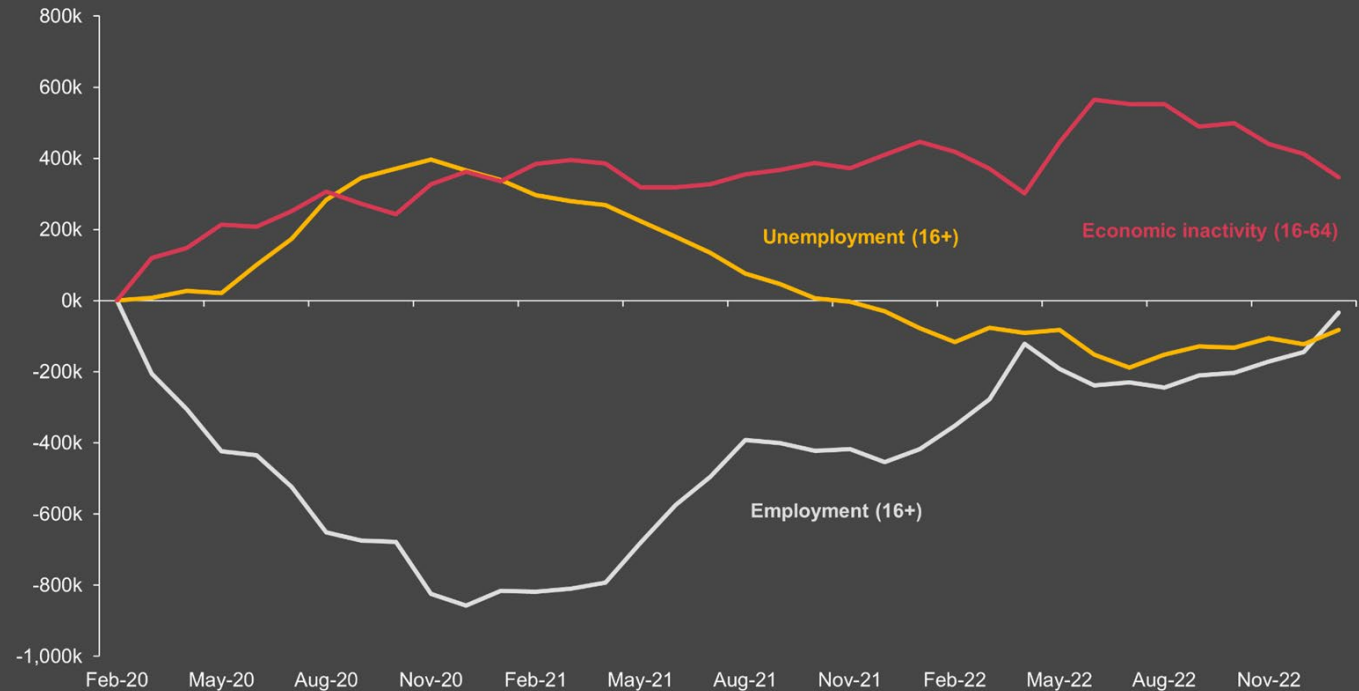
Our modelling suggests the rise in inactivity cannot be explained by demographic change alone, but it remains a key factor

High inactivity continues to drag on economic growth

Over the pandemic, the number of working-age adults out of the labour market increased by more than half a million. Though inactivity has fallen slightly, it remains elevated, with more than 400k working-age adults still missing from the labour market. This is a clear reversal of earlier trends and sets the UK apart from most of the other major economies, where inactivity rose during the pandemic but has since fallen back to more normal levels.

Why does this matter? At times of low unemployment, rising inactivity limits the supply of labour into the economy and thus acts as a drag on economic growth. This means policymakers need to unlock productivity growth to drive economic growth - which is also an ongoing policy challenge.

Can population ageing explain the rise in economic inactivity?

To answer this question, we create a counterfactual scenario that estimates the

expected change in economic inactivity due to demographic changes alone.

We find that the rise in inactivity amongst three out of the four age groups can be largely attributed to changes in the overall size of the age group alone. This includes the 65+ age group, where inactivity is up by more than a quarter of a million – but close to 90% of this rise can be explained by population ageing.

The one exception to this is the 50-64 group. The rise in inactivity in this age group has been significantly higher than our population change analysis would predict. Crucially, this means that the rise in inactivity amongst the 50-64 age group cannot be attributed to population change alone.

This can partially be explained by worsening health during the pandemic, which have been exacerbated by delays to getting treatment and care. However, analysis by the the House of Lords Economic Affairs Committee found that the key driver was actually an increase to early retirements. For some who accumulated savings during the pandemic, this may have been a lifestyle change.

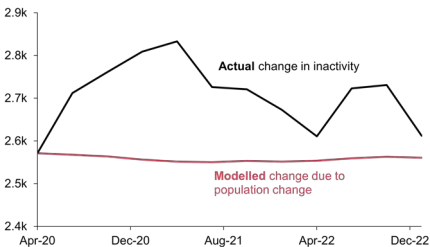**Figure 2.22: 16-24: change in inactivity from pre-pandemic, 3 month rolling average**

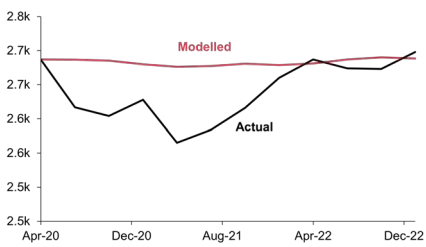**Figure 2.23: 25-49: change in inactivity from pre-pandemic, 3 month rolling average**

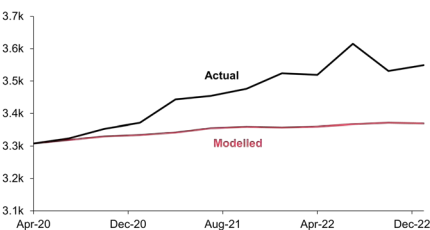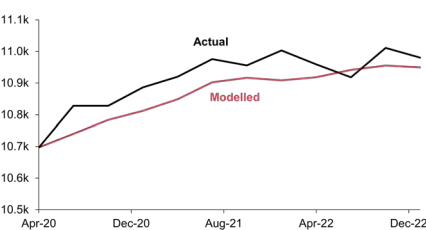**Figure 2.24: 50-64: change in inactivity from pre-pandemic, 3 month rolling average**

Figure 2.25: 65+: change in inactivity from pre-pandemic, 3 month rolling average

Sources: PwC analysis, ONS. Notes: We estimate the 'Modelled change due to population change' counterfactual scenario by holding the inactivity rate constant while using the actual change in the population size of each age group.

Higher inactivity is a structural challenge for the UK - population ageing will drive further rises in inactivity in the coming decade

**Population ageing will drive economic inactivity over the long-term**

Inactivity rates are highest amongst younger and older age groups. Younger people are typically economically inactive because they are in full-time education. While those aged 50 or older are more likely to be inactive because they have retired or due to long-term sickness.

There are now more people than ever before in older age groups. And they are only expected to grow in size as the population ages in the coming decades. Crucially for the UK's economic performance, this means that there will be a higher proportion of people in age groups with higher rates of economic inactivity.

Our analysis shows this will drive significant increases in economic inactivity over the coming decades. By 2030, population change alone could see inactivity levels increase by more than two million in the absence of any reform. The 65+ age group are expected to account for as much as 90% of this increase.

The structural rise in economic inactivity is unlikely to go away anytime soon.

Figure 2.26: Total expected rise in inactivity due to population change
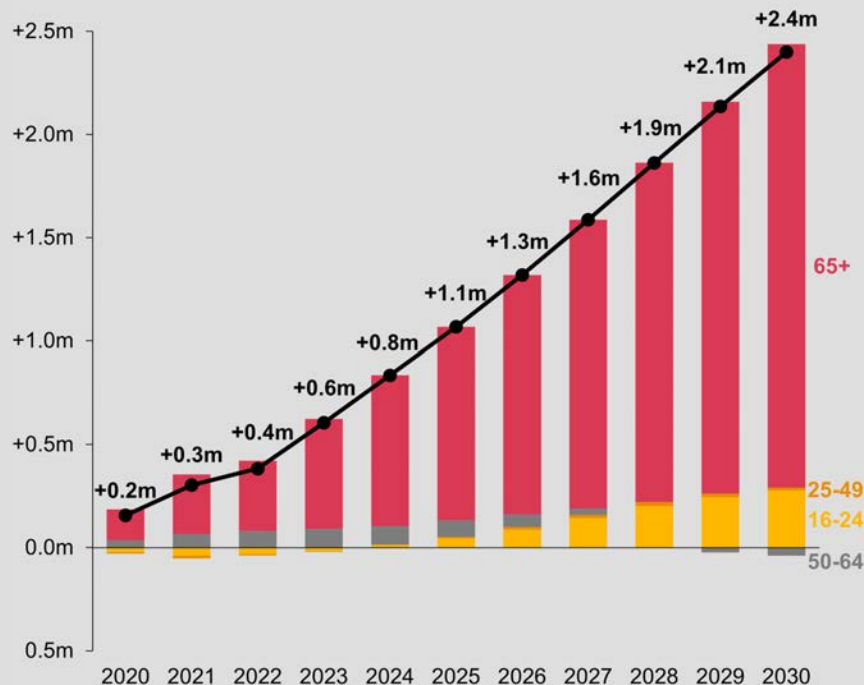
Sources: PwC analysis, ONS. Notes: We estimate the 'total expected rise in inactivity due to population change' by holding the inactivity rate constant while using the actual changes in population size for each group from 2020-2022 and the ONS 2020-based interim projections for 2023-2030. This analysis implicitly assumes that the retirement age is held constant.

"
Economic inactivity related to population ageing may rise by as much as 2.4m by 2030, with 90% of the rise coming from the 65+ age group."

Though labour demand is showing initial signs of easing, we expect only a modest rise in unemployment as firms 'hoard' labour

Labour demand is showing initial signs of easing as the economy slows.

As output growth has started to slow (UK real GDP flatlined in February), demand for labour has started to ease. Vacancies are now down 14% from their peak in 2022 - though they remain roughly twice as high as their pre-pandemic levels.

Looking at the industry breakdown in Figure 2.27, it is clear that labour demand has normalised faster in some industries than others. The vacancy rate has dipped below pre-pandemic levels in the real estate sector, where higher interest rates are weighing on transaction volumes. Likewise, the vacancy rate in the information & communication sector is now close to pre-pandemic levels.

On the other hand, vacancies remain high in industries that are predominantly public services such as health, education and public administration. Though vacancies may start to fall back in these sectors as public sector pay growth catches-up with the private sector (see page 27).

Vacancies are likely to fall further before redundancies rise.

Despite waning labour demand from firms, redundancies have remained relatively low at 94,000 in the three months to January 2023, slightly below pre-pandemic averages. HR1 redundancy notifications, a leading indicator of redundancies, remain broadly flat.

Survey data indicates that, though many firms have paused their hiring plans, they are more likely to cut workers' hours or shifts rather than make redundancies should demand weaken further. This reflects concerns around rehiring, especially after a period of prolonged labour shortages.

The labour market tends to lag behind the rest of the economy, so a downturn in economic activity is typically followed by a rise in unemployment. However, due to this 'labour hoarding' effect we expect that the rise in unemployment will be relatively modest.

Figure 2.27: Vacancy rate (job vacancies per 100 employee jobs), by sector, seasonally adjusted
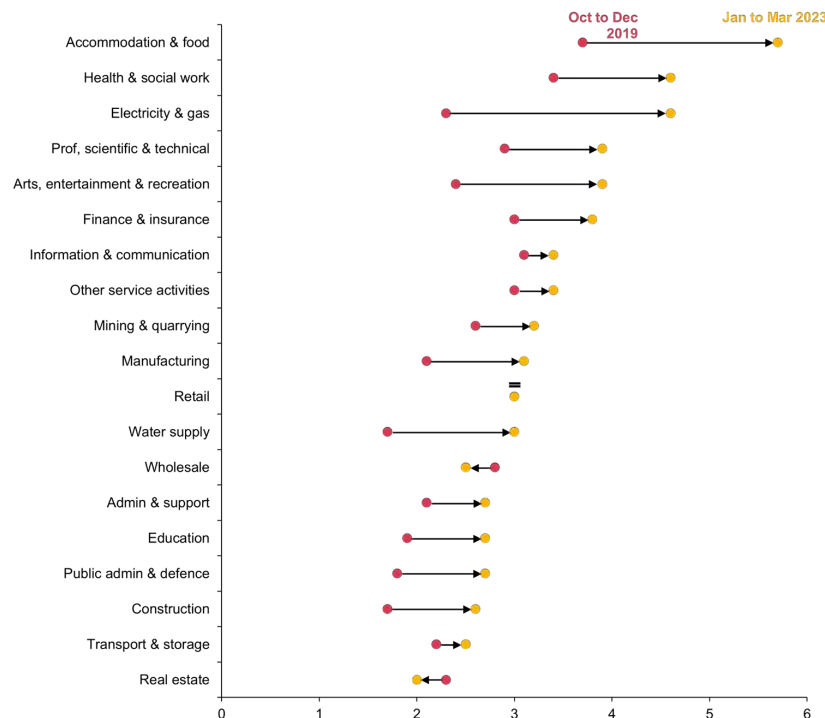
Pay growth, particularly in the private sector, should flatten in coming months as labour market tightness eases and inflation drops

Pay growth should flatten as labour market tightness eases and inflation expectations are tempered.

Over the last two years, nominal wage growth has been strong, largely driven by private sector pay growth which peaked at 10.5% in mid-2021. The main drivers were higher short-term inflation expectations, and difficulties with recruitment and retention.

As labour demand has eased, private sector pay growth has begun to plateau, whilst growth in public sector pay continues to rise.

As inflation falls and labour market tightness reduces, we expect private sector pay growth to remain flat in the coming months, with rising unemployment weighing on pay growth towards the end of the year.

However, uncertainty remains. If inflation remains elevated, workers may seek to offset the real income squeeze through higher wages. And if labour market tightness persists, firms may be forced to raise pay further. Though much improved, recruitment remains an issue, with over a third of firms finding it 'much harder' than normal to recruit.

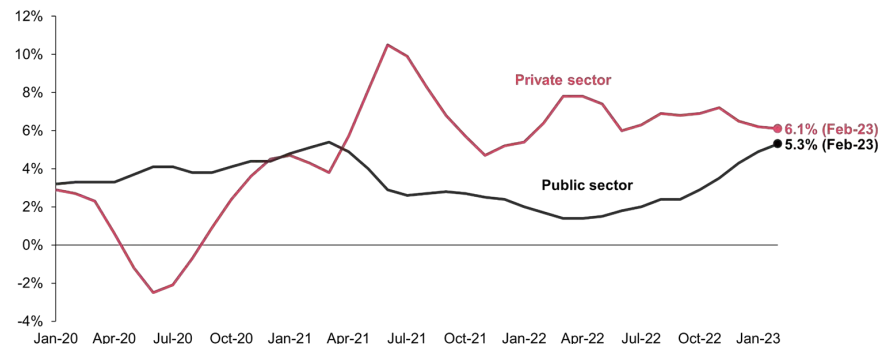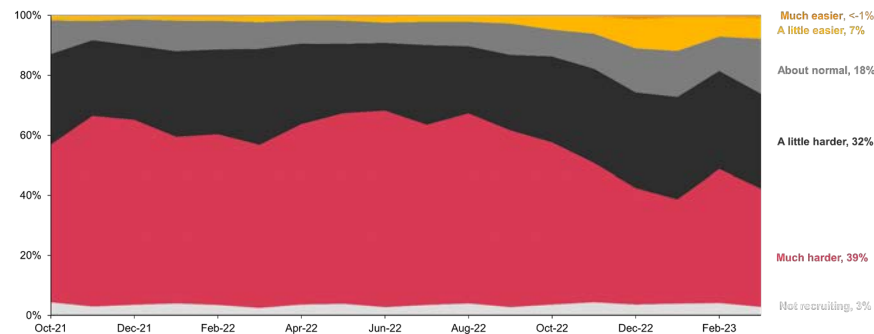**Figure 2.28: Annual total nominal pay growth, by sector, three-month rolling average**

Figure 2.29: Level of difficulty recruiting, compared to normal, % of businesses

UK Economic Outlook   Sources: PwC analysis, ONS, Bank of England Decision Maker Panel

Contacts and services

With additional thanks to Adam Deasy and Mehdi Hamidi Sahneh for their support with the analysis and production of the report.

Our UK economics team is part of Strategy&, PwC's strategy consulting practice. Strategy& is a global team of practical strategists committed to helping you seize essential advantages. Our economics practice offers a wide range of services, covering competition and regulation issues, litigation support, public policy and project appraisals, financial economics, behavioural economics and macroeconomics.

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- Economic impact analyses

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Thank you

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Appendix A – Our methodology for projecting UK national and regional GDP

Model structure

There are several classes of models that are commonly used to forecast macroeconomic aggregates, such as real GDP growth. We implement a Vector Autoregression (VAR) model, given they provide excellent short-term forecasting performance in a relatively simple framework. These models rely on empirical relationships between variables, often not imposing an assumption-based structure on these variables. Other models (e.g. structural simultaneous equations, DSGEs) are more resource intensive to maintain, require many assumptions, or tend not to forecast as well.

Mixed frequency data

Given the fast-moving nature of the economy, it is important that any forecasting model can use the latest-breaking data releases. Monthly data released through a quarter can pin-down real GDP forecasts far before official quarterly estimates are published by the ONS.

As a result, we utilise mixed-frequency data in our model. While our real GDP growth variable is quarterly, we can incorporate

monthly series into our model. There are several approaches to this in the literature; we follow Ghysels (2016) and McCracken et al. (2021) in splitting monthly series into 3 quarterly series and 'stacking' these series together to estimate a VAR at quarterly frequency.

For example, stacking in terms of 'economic time' puts together the quarterly real GDP variable (y), with three quarterly series made from a monthly variable (x), relating to the first, second, and third month of each quarter respectively.

$$Y_t = [x_{t,1}, x_{t,2}, x_{t,3}, y_t]$$

A model is then estimated where the components of this vector depend on p lagged values of these series.

$$Y_t = \alpha + \beta_1 Y_{t-1} + \cdots + \beta_p Y_{t-p} + \epsilon_t$$

By stacking the series this way, we can impose actual data points released part way through the quarter to construct a 'conditional' forecast, using the framework of Waggoner and Zha (1999). This allows us to incorporate information through the quarter, constantly refining the forecast.

Bayesian estimation

Including multiple monthly series means the number of parameters to be estimated grows large very quickly. We therefore use the Bayesian methods, including the hierarchical prior selection methods of Giannone et al. (2015).

Variable selection

We collected data on over 100 macroeconomic series. To select the most suitable variables for our model, we conducted several 'live data' backtesting exercises, testing performance of various models in out of sample forecasts. Chosen variables include the BoE base rate, unemployment rate and consumer spending.

Scenario construction

Bayesian estimation recovers the entire posterior distribution of our model parameters, therefore giving a distribution of GDP forecasts. This gives an indication by percentile, of the range of possible outcomes for real GDP. We construct our downside scenario by combining points on this

distribution of forecasts, with expert judgement and our scenario narrative. Given certain values for our initial negative shocks, we then use the conditional forecasting feature of our model to construct a path where growth returns to trend.

Ghysels, E. (2016), 'Macroeconomics and the reality of mixed frequency data', Journal of Econometrics

Giannone, D., et al. (2015), 'Prior Selection for Vector Autoregressions', Review of Economics and Statistics

McCracken, M., et al. (2021), 'Real-time Forecasting and Scenario Analysis Using a Large Mixed-Frequency Bayesian VAR', International Journal of Central Banking

Waggoner, D. and Zha, T. (1999), 'Conditional Forecasts in Dynamic Multivariate Models', The Review of Economics and Statistics

Appendix B – PwC Financial Conditions Index

= Tighter financial conditions

= Looser financial conditions

PwC UK Financial Conditions Index (FCI)

We have built a new index to track developments in UK financial conditions. It is a summary index of eleven indicators broken down into five categories:

1. **Sterling exchange rate**
2. **Interest rates**
3. **Equity prices**
4. **Corporate spreads**
5. **Credit spreads**

For each of the eleven indicators, we calculated a z-score (standardised score) using the 2010-2019 mean and standard deviation. The z-scores for each indicator were averaged to give a z-score for each of the five categories.

We constructed the index relative to the 2010-19 period, as a proxy for the 'new normal' ushered in by the GFC. This resulted in a step-change to economic conditions in advanced economies; characterised by lower growth, interest rates and inflation.

For a given indicator or category, a z-score above (below) zero indicates that financial conditions are tighter (looser) than during the 2010-19 period. While an increase (decrease) in the overall index indicates that financial conditions are tightening (loosening).

Table 2.1: PwC UK Financial Conditions Index

	Latest z-score*	MoM change	YoY change
Overall Index			
PwC UK Financial Conditions Index	0.19	↑	↑
Sterling ER			
Sterling Exchange Rate Index	-0.92	↓	↓
Interest rates			
10Y Nominal Government Bond Yield	2.10	↑	↑
10Y Real Government Bond Yield	1.27	↑	↑
3Y OIS Instantaneous Forward	2.95	↑	↑
Equity prices			
FTSE All-Share Index	0.03	↓	↑
FTSE All-Share Price-Earnings Ratio	-0.07	↑	↓
Corporate spreads			
BBB-AAA Corporate Bond Spread	-0.17	↑	↑
BBB Corporate G-spread	-0.49	↓	↑
AAA Corporate G-spread	-0.50	↓	↓
Credit spreads			
Mortgage Spread	-0.03	↑	↑
Unsecured Spread	-1.18	↑	↑