Teneo[®]

UK Economic Forecast

A consumption and confidence-led recession, with the potential for a housing crisis

Teneo Insights / October 2022



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About Teneo

Teneo is the global CEO advisory firm

We partner with our clients globally to do great things for a better future. Drawing upon our global team and expansive network of senior advisors, we provide advisory services across our five business segments on a stand-alone or fully integrated basis to help our clients solve complex business challenges. Our clients include a significant number of the Fortune 100 and FTSE 100, as well as other corporations, financial institutions and organisations.

Our full range of advisory services includes strategic communications, executive and board search, investor relations, financial transactions and restructuring, management consulting, physical and cyber risk, organisational design, board and executive search, geopolitics and government affairs, corporate governance, ESG and DE&I. The firm has more than 1,500 employees located in 41 offices around the world.

Teneo has extensive experience in consumer behaviour, economic forecasting and scenario modelling, working directly with the world's largest brands to understand how geopolitical, macroeconomic and behavioral factors influence economies, consumer behaviour and demand for products and services. In particular, Teneo has conducted extensive work on how major events such as the COVID-19 pandemic, Brexit, the cost of living crisis and the Russia-Ukraine conflict flow through to the economic outlook of multiple countries in a range of scenarios.

Teneo utilises a combination of technical modelling and highly respected advisers across a range of subjects, including politics, economics and consumer brands, in order to develop economic scenarios. These perspectives are considered alongside other wide ranging implications for businesses, including consumer movement, spending and behaviour patterns, as well as key financial factors like access to credit, investment and government support.

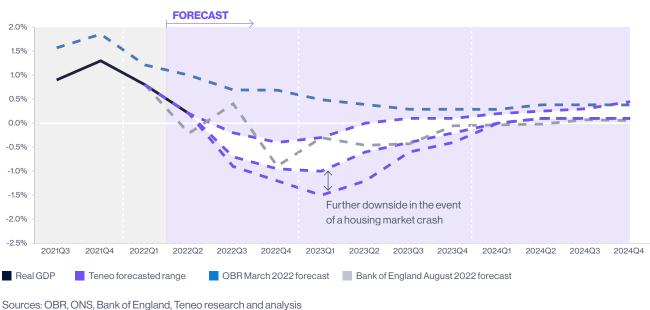


Executive Summary

Due to a series of factors – ranging from the long-term impacts of the pandemic to the ongoing effects of the conflict in Ukraine – the UK is currently exposed to a unique range of economic pressures. For the first time in 30 years, the country is operating in a high-inflation environment, which, save for recent government intervention, would have seen rates as high as 16% in October 2022. For many consumers, this is the first time they have experienced a high-inflation environment. For those who have come of age and become homeowners in the last 15 years, it is also the first time they will have experienced significant interest rates.

This paper outlines how through a chain reaction – starting with those economic pressures referenced above and ending with the inexorable ratchet in mortgage repayments – the UK economy is forecast to enter a recession (or, more likely, is already in one) that will last for an expected six quarters, at a likely range of negative 2 – 4% growth annually, wiping an estimated £100bn off the national GDP. While the causes are different, the effect is ominously similar to 2008: the potential for a mortgage crisis and house price decline driving the UK economy into a deep recession. The UK economy is forecast to enter a recession (or, more likely, is already in one) that will last for an expected six quarters, at a likely range of negative 2 - 4% growth annually, wiping an estimated £100bn off the national GDP.

At the start of this chain sits a unique blend of factors that have all coalesced to drive inflation. Some, such as underlying demographic changes and cultural shifts in the workforce, were always likely to occur. Others, such as post-COVID behavioral changes and the unwinding of latent demand, are seen across all major economies. This statement is broadly true for events resulting from Russia-Ukraine, including rising oil, gas and commodity prices. However, there is a further set of factors that might be uncharitably defined as 'self-inflicted' and only serve to exacerbate the impact of inflation in the UK, including the country's sub-optimal trading position with the rest of the world as a result of Brexit and the further suppression to the pound as a result of failed government intervention.



Real GDP quarterly growth forecast, 2021Q3 - 2024Q4

Inflation currently sits at an estimated 12% in October 2022 and would have been over 16% without intervention on residential energy prices. Despite this policy, levels are still buoyed by fuel, food and wage-driven inflation and are expected to remain above 10% well into 2023. While wage rises are at near record levels, this over-indexes in high-income sectors and even then does not offset the impact of inflation. This is leading to reduced disposable income (which will continue to diverge well into the back of 2023) and levels of consumer confidence lower than during the Global Financial Crisis. This has resulted in significantly suppressed levels of consumption in higher income groups, with lower earners only consuming essential goods and services.

Consumer behavior is already changing to adjust to this new reality. The UK population is reducing significant individual expenditures (albeit after an Indian Summer of unwinding COVID demand for foreign holidays), further increasing working from home to save on commuting fees, reducing discretionary car journeys and 'trading down' to cheaper more value-led brands and services. These altered behaviors, movements and spending patterns will have disparate impacts across various UK business sectors but, combined with expected government spending reductions, will themselves reduce UK output sufficiently to drive a recessionary environment.

In addition, as the Bank of England (BoE) acts to curb inflation (and perhaps, more importantly, protect the pound's value), it is already increasing interest rates, which currently sit at 2.25% but are expected to climb to at least 6% by 2023Q2. This typical mechanism used to suppress inflation has the potential to wreak havoc with a large portion of the UK population who have feasted on historically low levels of interest rates and do not know (or were programmed to expect) any different.

From the time of publication to the end of 2023, there are an estimated 4.1m UK mortgages (55% of the total 8.3m UK mortgages) that are either already on a variable rate or are up for renewal. For the typical UK consumer, a modest (in relation to the possible downside) 4% rise in interest rate from 3% to 7% on a £200,000 mortgage could result in additional monthly payments of £466. If energy bills were the warm-up act to the cost of living crisis, then mortgage repayments are very much the main event. With a majority of landlords also exposed to variables of expiring mortgage deals and often highly leveraged, rental prices are equally sure to follow. Initial analysis (albeit in a do-nothing scenario) indicates the possibility of up to 30% house price reductions and over 20% of UK homes in negative equity in some scenarios.

Monthly repayment increase based on mortgage rate increase

(% increase in repayments)

| 1% increase | 2% increase |
|--------------------|-------------|
| £108 | £221 |
| (c.11%) | (c.23%) |
| 3% increase | 4% increase |
| £341 | £466 |
| (c.36%) | (c.49%) |

Note: Calculations based on £200,000 variable rate mortgage over 25 years

Noting the government had no choice but to act on energy bills, and the rises there pale in comparison to the potential household impact of mortgage rates, it seems inevitable that some intervention will be required. Whether that be a collaboration with the BoE to keep rates at reasonable levels, direct intervention on mortgage repayments or another mechanism, one fact is clear: **There is an unnerving requirement for clear, decisive and unprecedented government policy, a commodity which feels even more scarce than those which helped to kick-start this crisis.**

The Current Situation

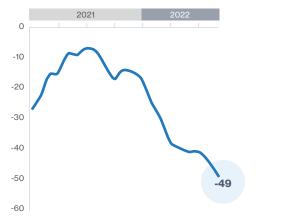
The UK is currently in a period of unprecedented inflationary challenge

A confluence of factors, including the aftermath of the COVID-19 pandemic, ongoing issues relating to Brexit, underlying demographic challenges and the ongoing impacts of the Russia-Ukraine conflict, have driven UK inflation to a 40-year high. Price increases are outpacing wage growth, resulting in a real wage decline for many individuals, leading to a 'cost of living crisis' that has squeezed consumer disposable income.

Consumer Price Index, 2021 – 2022



As household incomes have fallen in real terms and consumers have less money to spend, there is already evidence of both output and consumption declining in the UK. Both of these factors are linked to a slowdown in GDP, which has experienced declining growth since 2022Q2.



Consumer Confidence, 2021Q1 – 2022Q2

Consumer confidence reached an all-time low of -49 in September 2022

0.2%

Consumer confidence has plummeted against a backdrop of low **GDP Growth** (0.2% for 2022Q2) and expectations that the UK will be in a recession¹ by 2023.



Pessimism in the economy is also reflected by businesses as the **Business Confidence Index** for the UK has **decreased by 3.8%** since the start of 2022.

Sources: ONS; Gfk; OECD

Note: 1A recession is defined as two consecutive quarters of negative growth

The Series of Events Leading to Recession

The UK is expected to enter a recession by 2023

There are a variety of ways in which an economy can enter recession. The forecast downturn is being driven by inflation, declining consumer confidence and consumption – in turn leading to suppressed business revenues and outturn.



The Input Events Impacting the UK Economy

The COVID-19 pandemic, issues relating to Brexit and the Russia-Ukraine conflict have manifested in an acute inflationary environment

We have identified eleven different key input events which have been influencing the UK economy.

| Events as a result of | of the COVID-19 pandemic | Events as a result of UK politics, inclu | iding Brexit |
|--|--|--|---|
| Driver | Description | Impact | |
| Structural demographics | The UK has a shortage of workers due to fewer people entering the working population than leaving. This is due to an aging population and is bolstered by an 11% reduction in net migration largely due to Brexit. | There are over 500,000 fewer economically active people in the UK today than at the start of the COVID-19 pandemic. A high demand for workers drove a c.18% increase in median wages over the same period, potentially stoking inflation. | 18% Growth in wages |
| Cultural shifts in the workforce | Labour shortages have been further exacerbated by changes in preferences of the workforce caused by the pandemic (triggering trends in early retirement) and the rise of Gen Z and Millennials in the workforce (favouring flexible and/or part- time working). | Over one-third of the workforce is looking for more flexible alternatives to full-time jobs and nearly half of the Millennials and Gen Z surveyed rejected jobs or assignments due to personal values or a greater work-life balance. | since pre- pandemic |
| € € Russia-Ukraine and energy | Russia's invasion of Ukraine and the subsequent sanctions and counter- sanctions have led to a tactical reduction in gas and oil supplies from Russia into Europe, increasing wholesale prices. | At its peak, UK retail petrol prices increased by c.59% year on year after Gazprom halted supplies. Energy companies have passed on increases to consumers. While a price cap dampened this, household energy bills would have been three times those of 2019 without government intervention. | 51% Energy price increase |
| Russia- Ukraine and commodities | The Russia-Ukraine conflict has also driven an increase in commodity prices. Russia and Ukraine are some of the biggest exporters of agriculture globally. Combined, they account for 30% of global wheat and barley exports, while 50% of exported sunflower oil is from Ukraine. | The drop in commodity exports from the region is forecast to lead to a 23% increase in commodity prices in 2022. Most notably, wheat prices jumped by 69%, and sunflower oil prices increased by 60% in the immediate aftermath of the invasion. | 23% Commodity price increase |
| Brexit and trade position | Post-Brexit trade costs are driven by higher tariffs on imports and higher administrative costs arising from different regulations, border controls and other legislative requirements. | There was a 6% increase in UK food prices between December 2019 to September 2021. Trade restrictions led to a £2.9bn (60%) increase in customs duties paid on imported goods by businesses and consumers. | 6% Brexit induced food price hike |
| Supply chain disruptions and costs | A variety of supply-side factors, including COVID-19 lockdowns in China, Brexit and the war in Ukraine, have increased the cost of freight and transit by 6x compared to pre- pandemic prices. Equally, global demand for freight has increased by 20% since the start of 2020, further increasing costs. | Prior to the war in Ukraine, an estimated 1.3pp of CPI in the EU was attributable to supply chain bottlenecks. Therefore, accounting for Brexit, the Ukraine crisis and increased demand, this is estimated to be higher in the UK for 2022. | >1.3pp Increase in CPI due to supply chain bottleneck |

Underlying events which would have occurred regardless of external factors Events as a result of the COVID-19 pandemic

Events as a result of Russia-Ukraine Events as a result of UK politics, including Brexit

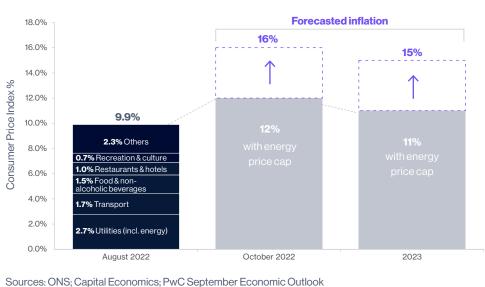
| Driver | Description | Impact | |
|--|---|--|---|
| Foreign | The £ has been performing weakly against the \$, driven by political uncertainty in the UK, and it plummeted to a record low after the mini-budget announcement . | Depreciation of the £ will drive import costs by c.25% based on the highest and lowest values in 2022. This will be acutely felt in oil prices, which are priced in \$, impacting both consumers | 25% Devaluation of £/\$ |
| exchange | | and businesses. | |
| Climate and weather | Record breaking temperatures were recorded in the summer of 2022. The UK reached a maximum of 40.3C, and highs of 40C and beyond were also recorded across Europe. As a result, the forecasted yield for maize, sunflower and soya bean output in Europe is expected to drop c.9%. | Wheat futures increased by 6%, impacted by a forecasted drop in maize yields. This is likely to have a multiplier impact , as the drop in yield is anticipated to have a domino effect on the price of other agricultural products. | 6% Increase in wheat futures |
| Unwinding of latent demand | The easing of COVID-19 restrictions and removal of economic uncertainty led to a rapid boost in economic activity driven by latent demand, especially in retail, travel and hospitality between the summers of 2021 to 2022. | Lockdown boosted household savings as a proportion of disposable income by 20% points, driving demand-led inflation as savings were used when lockdowns eased. | 20pp Savings growth during COVID-19 |
| RPI spiral | Retail Price Index (RPI) is widely used to calculate interest payments on index-linked bonds, student loans, rail fares, mobile bills and taxes. There are signs of an emerging 'RPI spiral' wherein the cost of RPI-linked goods continually increase. | With RPI sitting at 12.3% in August 2022, any contract with an annual RPI increase factored in is due to rise by a far greater amount than recent years. | 12.3% Real disposable income |
| Mortgage repayments and rental rates | The BoE has increased interest rates and is expected to continue to increase them to address the inflationary environment. This will drive mortgage rates up and increase the cost of borrowing. | More than 2m UK mortgages on a Standard Variable Rate and Tracker deal are set to expire in 2022, while 1.5m fixed rate mortgages are set to expire in 2023. All of these households will see significant increases in mortgage repayments. | 5% Potential interest rate rise in November |

Sources: World Bank, ONS, Teneo research and analysis

Inflation

Despite significant intervention, these inputs are expected to drive inflation to a peak of 12%

The range of factors explored on the previous pages have all contributed to a high inflation environment. Inflation currently sits at 9.9% but is forecast to reach 12% by October and remain high going into 2023. The three most material contributors are utilities, transport, and food and non-alcoholic beverages.



UK inflation forecast, 2022-2023

While energy remains the most material contributor to inflation, the recent government intervention of a new energy price cap has reduced overall anticipatory inflation by around 4% in both 2022 and 2023.



Typical annual household energy bill¹ inclusive of government support, 2021 – 2024F (£)

Note: 1 Calculated based on a typical default tariff, dual-fuel direct debit household

Wage Growth and Employment

Rising inflation puts pressure on wages to maintain standards of living

In response to high and rising inflation, workers have put pressure on earnings to rise, leading to a 6.1% increase in median wages over the last 12 months. This has been exacerbated by a low unemployment rate and high levels of vacancies, which has created upwards wage pressure, resulting in wage increases which are expected to continue.

A low unemployment rate and high demand for workers has put pressure on wages.



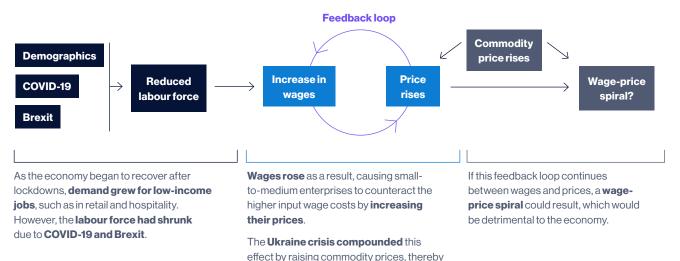
Low unemployment and a skill shortage have resulted in wage increases to retain and attract talent.

Average wage increase (Jul2021-2022)

Median wages have increased 18% compared to pre-pandemic levels and 6.1% in the last 12 months.

Sources: ONS; IFS

This wage growth has helped individuals partially cover the cost of rising inflation. However, it can also be a driver of further inflation.

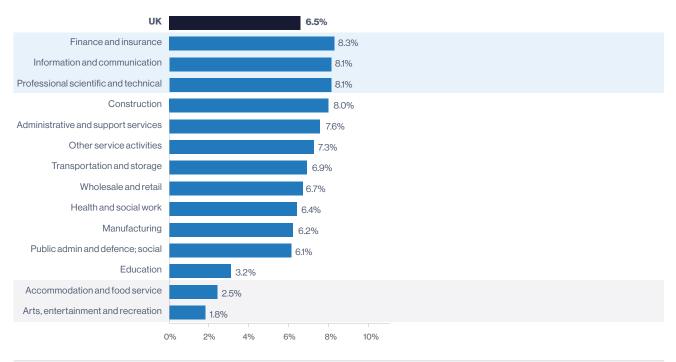


causing further inflationary pressure.

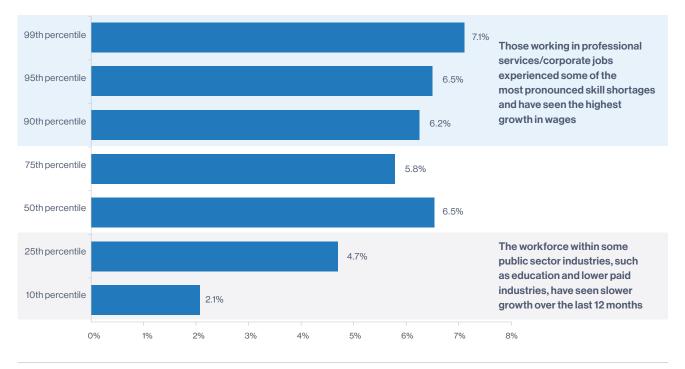
However, this wage growth is not distributed equally

Across the UK, wages are rising faster in certain sectors, particularly across higher income brackets.





Those industries that have seen higher levels of wage inflation in percentage terms have tended to be those with higher levels of pay in absolute terms, leading to greater levels of wage inflation (and lower levels of inflationary pressure) amongst higher earners.

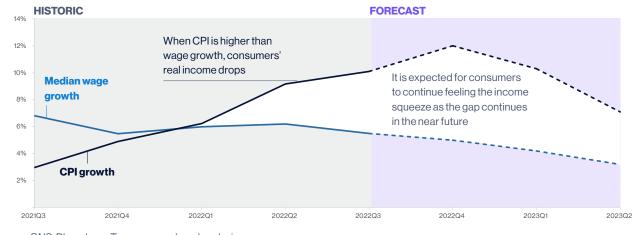


Wage growth by income brackets, July 2021–July 2022

Real Wages and Disposable Income

Inflation continues to outpace wage growth, resulting in declining real disposable income

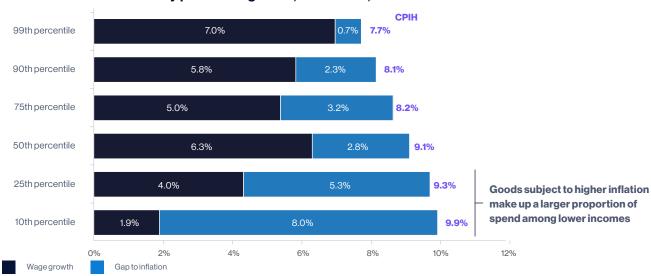
Across all income groups, wage increases do not compensate for the full impact of inflation. This is negatively impacting real wage growth and real disposable income. As a result, individuals are feeling poorer than they did 12 months ago. Since 2022Q1, inflation has outpaced wage growth, reducing real income and disposable income. We forecast this dynamic to continue until at least the start of 2024, with individuals feeling progressively poorer and having reduced real income until this trend reverses.



Forecast inflation (CPI, %) vs forecast wage growth, 2021Q3 – 2023Q2

Sources: ONS, Bloomberg, Teneo research and analysis

Lower-income individuals are most significantly impacted as they are receiving a 'double hit.' The inflation rate is higher amongst these groups (as they spend a greater proportion of their income on essential items like energy), but their wage growth is lower.



Household CPIH¹ and salary percentile growth, June 2022, %

Source: ONS

Note: 'Consumer Price Index including owner and occupiers' housing costs (CPIH)

Consumer Confidence and Consumption

Declining Real Disposable Income (RDI) has resulted in significant drops in consumer confidence

Real wage declines, combined with further inflationary rises and interest rate hikes, have severely damaged consumer confidence. Consumer confidence is at its lowest level since records began in 1974, lower even than during the 2008 Financial Crisis and the COVID-19 pandemic.

It is consumer confidence, combined with available disposable income, that dictates total consumption. Low levels of consumer confidence, combined with lower levels of disposable income, are having a knock-on impact on consumption. This is a key predictor of an economy entering a recession.

| Income bracket | Wage increase July 2021 – 2022 | Inflation June 2022 | Implied real wage growth | Share of total spending | Consumer confidence | Consumption forecast |
|----------------|-----------------------------------|------------------------|-----------------------------|-------------------------|------------------------|------------------------|
| 99th | 7.0% | 7.7% | - 0.7% | 20% | \downarrow | И |
| 90th | 5.8% | 8.1% | - 2.3% | 14% | \downarrow | \downarrow |
| 70th | 5.0% | 9.0% | - 4.0% | 11% | \downarrow | \downarrow |
| 50th | 6.3% | 9.0% | - 2.7% | 9% | \downarrow | \rightarrow |
| 20th | 4.0% | 10.0% | -6.0% | 5% | \downarrow | $\rightarrow \nearrow$ |
| 10th | 1.9% | 9.9% | -8.0% | 4% | \downarrow | $\rightarrow \nearrow$ |

Anticipated impact on consumption

Source: ONS

Higher income groups will see larger declines in consumption

- Perversely, larger drops in consumption are expected in groups less impacted by wage decline. Given they account for 90% of spend, this impact is significant.
- Even small declines in real wages impact confidence, and these groups have the ability to save in anticipation of further inflationary pressure.
- This dynamic will be particularly acute for high earners with large mortgages who will be anticipating significant interest rate rises.
- Interest rates could rise as high as 5% when the BoE reviews in November.

Lower income groups are likely to maintain consumption to cover essential spend

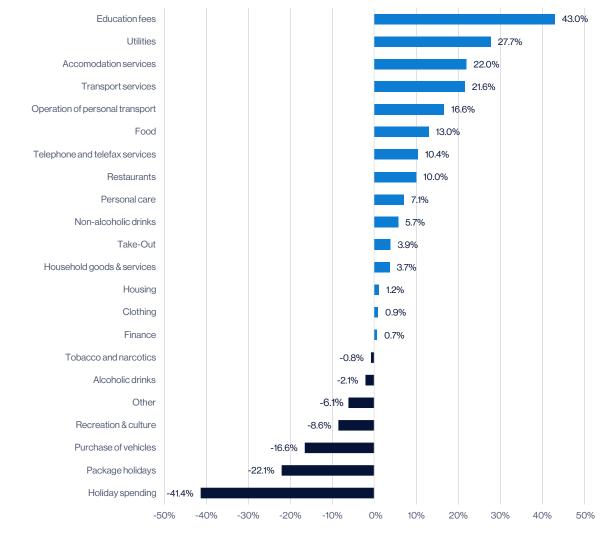
- Lower income groups are expected to continue to consume at the same rate and may even rely on credit, since they are unable to save in response.
- However, their spending is likely to shift heavily toward essential goods and services.

Consumer Spending and Behaviour Changes

As consumption declines, significant changes in spending behaviours are expected

As consumers become and feel poorer, the most immediate change is in their prioritisation of spend. Evidence from the 2008 Financial Crisis is informative in terms of where consumers may cut back; however, today's environment is different in many ways.

For instance, between 2006 and 2010, UK consumers materially adjusted their proportional household spend in order to prioritize certain goods and services over others.



% change in the budget share allocated towards each category by household, 2006 - 2010, UK

Source: ONS

During the 2008 Financial Crisis, consumers reduced spend on large discretionary items such as cars, holidays and household improvements, whilst prioritising essential items such as energy and accommodation. They also prioritised smaller discretionary purchases such as restaurants and personal care. However, there are a number of factors which may see consumers prioritise in a different fashion during this crisis (see right).

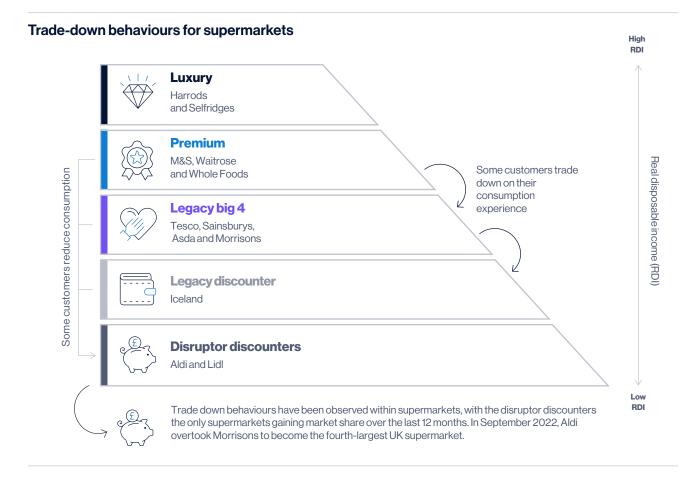


Greater competition for spend. There are a number of goods which were previously considered discretionary but are now considered essential and fighting for wallet share, including broadband, mobile telephone and streaming services.

| \bigwedge^{\top} | \searrow |
|--------------------|------------|
| \smile | J |

Latent demand for unavailable COVID-19 activities. Consumers have been prevented from travel and tourism activities, as well as elements of broader socialising. There is evidence that consumers have protected holiday spend over the summer of 2022, which has led to cuts in other areas.

Beyond reprioritisation of spending, there are a number of other behavioral changes likely to occur across the UK. One of these is consumers 'trading down' to cheaper, less-premium alternatives of goods and services in order to consume the same volume at a cheaper price. This behaviour set can apply to supermarkets, hospitality, holidays and a range of other services.



Impact on UK Businesses

Suppressed consumer spending will have a direct impact on business output

Consumer spending suppression flows through to actual reductions in GDP through their reduced spending at (or in the value chain of) UK businesses. The reduced revenues manifest in suppressed output and therefore aggregated reduced GDP, albeit with material variation between industries.

| Future outlook by industry | | | Negat | ive outlook | Neutral outlook Positive outlook | |
|------------------------------|----------------|----------------------|--|------------------|----------------------------------|---|
| Industry | % of output | Spending category | Change in con- sumer spending | Other factors | Impact on output | Commentary |
| Manufacturing & construction | 16.1% | Discretionary | 7 | \downarrow | \downarrow | New construction projects are likely to be delayed/ cancelled due to material costs and the high cost of borrowing. |
| Education & healthcare | 14.4% | Essential | ~ | 7 | 7 | The weak £ is likely to attract international students and investment. Domestic students may choose to stay in education longer. |
| Real estate | 13.2% | Discretionary | \downarrow | ~ | $\rightarrow \searrow$ | Mortgage rate rises are expected to slow down the housing market; however, the weak \mathfrak{L} is likely to attract foreign investment. |
| Professional services | 12.4% | Discretionary | $\rightarrow \searrow$ | 7 | \rightarrow | Professional services is likely to be relatively resistant as it is typically less exposed to consumer markets. |
| Retail & wholesale | 10.7% | Discretionary | \downarrow | | $\searrow \downarrow$ | Decline is expected as customers reduce non- essential spending. The sector is also likely to come under further pressure from increased costs. |
| Finance & insurance | 8.2% | Essential | 7 | | 7 | Interest rate increases are likely to result in declines in borrowing, while exchange rate instability is likely to impact investments. |
| IT & comms | 6.4% | Essential | 7 | \rightarrow | 7 | Although essential, spend is likely to decrease as customers delay upgrading and switch to lower cost providers. |
| Public sector & defence | 5.5% | Essential | \rightarrow | | \searrow | Expected to be impacted by spend cuts in the November budget. |
| Transport & storage | 3.7% | Essential | \searrow | | \searrow | Consumers are likely to reduce non-essential travel to reduce costs. |
| Utilities | 2.8% | Essential | 7 | | 7 | Spend will increase as energy prices rise, likely to be partially offset by some reduction in consumption. |
| Accommodation & food | 2.4% | Essential | 7 | 7 | $\rightarrow \searrow$ | Despite being essential, overall spending is likely to decline as customers trade down to cheaper alternatives. |
| Art & recreation | 1.5% | Discretionary | \downarrow | \rightarrow | $\searrow \downarrow$ | Declines expected as customers reduce non-essential spending. |
| Agriculture & mining | 1.4% | Essential | \rightarrow | | 7 | Weak £ will increase the cost of raw material imports. |

Government Response

The government released its 'mini-budget' on 23rd September, which prior to subsequent u-turns, represented one of the most significant cuts to tax in recent history

Prior to a u-turn on 3rd October, the government's 23rd September mini-budget outlined some of the most significant changes in taxation in recent history. These terms aimed to combat the forecast decline in consumer spending and overall confidence and consumption.

Tax interventions





Cut to the basic rate of income tax

Removal of the 45% tax band (prior to government u-turn)

Tax and NI savings by income bands (prior to government u-turn on 45% tax rate), £

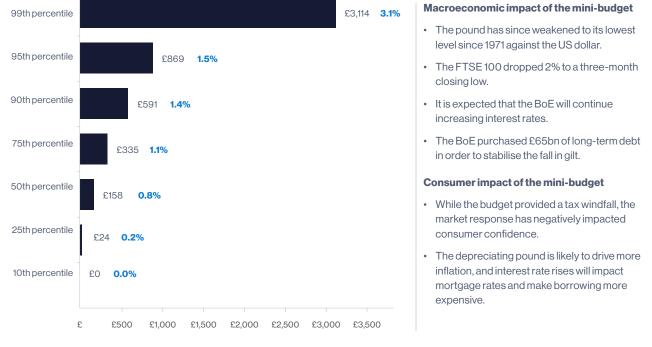


Reversal of the Spring 2022 National Insurance rate rise



Reversal of planned increase in corporation tax

% change in net income



Sources: ONS; IFS

While the most material element of the tax package (the removal of the 45p tax rate) has since been reversed, it is important to consider both the strategy which sat behind the intervention and the long-term impact of its attempted introduction. Noting that over 20% of UK consumption comes from the top 1% of earners, increasing their spending power is, in theory, a potential strategy for supporting economic growth. However, as highlighted above, this cohort is unlikely to spend all increases to income, unlike middle-earners who would have a) more need for the increase and b) been more likely to dispose of this income to support economic growth. Despite the reversal of this policy, there are material residual negative impacts, including continued suppression to the value of the pound. This results in faster than anticipated interest rates rises and damaged consumer and investor confidence.

Interest Rates and the Housing Market

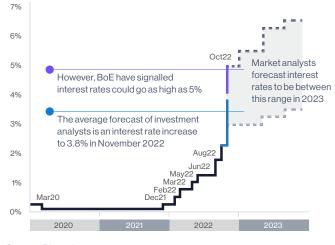
Significant interest rate increases are expected, which will have a knock-on impact on mortgage repayments and the housing market

The BoE was already in the process of increasing interest rates to curb inflation and protect the value of the pound; however, recent moves by the government have heightened expectations of more material rate rises in the coming six months.

While still in the very early days of the government response, markets have responded poorly. This has resulted in reduced business and investor confidence in the UK and subsequent withdrawal in investment, pushing down the value of the pound. A weak pound has a number of knock-on implications, many of which can be further drivers of inflation.

The BoE can move to curb inflation through increasing interest rates and can also use the same mechanism to protect the value of the pound through making investment in government debt more attractive for investors. The recent moves by the government have led to increases in the expectations of the level of interest rate rises required to curb inflation and protect the value of the pound.

Bank of England interest rate forecast, 2020–2023



Source: Bloomberg

Impact on mortgage rates and house prices

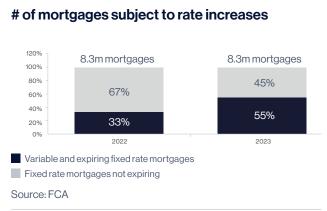
These interest rate rises (while required) have the potential to have a devastating impact upon homeowners across the UK. A rise in interest rates will, in turn, increase mortgage rates, which will have a detrimental impact on repayments. A 4ppt increase in repayment rate would result in monthly charges increasing by almost 50%.

Monthly repayment increase based on mortgage rate increase (% increase in repayments)

| 1ppt increase | 2ppt increase |
|---------------|---------------|
| £108 | £221 |
| (c.11%) | (c.23%) |
| 3ppt increase | 4ppt increase |
| £341 | £466 |
| (c.36%) | (c.49%) |

Note: Calculations based on £200,000 variable rate mortgage over 25 years

Those with flexible, standard rate or fixed rate mortgages due to expire in the coming months and years will see a material increase in monthly payments. This will put additional pressure on household budgets and have a detrimental impact on the housing market. By the end of 2023, half of mortgage holders will be paying considerably higher rates than today.



Mortgage rate increases of this magnitude risk a crash to the housing market

With over 55% of mortgages seeing a material increase in repayments over the next 12-18 months, a number of significant events are likely.

- 1. Increases in repayments will leave some households unable to pay, and fewer people will enter the market.
- 2. This will lead to lower demand, and house prices will fall.
- 3. Decreasing home prices may lead to negative equity as house values becomes lower than mortgage values.
- 4. Decreasing home prices and negative equity can be a key recessionary driver, as seen in previous crashes.

\sim **Barriers to first-time buyers**

For first-time buyers, an increase in mortgage rates will likely reduce the amount they can borrow. If the regulator is to retain the broad ratios between total household income, monthly payments and mortgage debt, increased monthly payments will likely result in a reduction in how much they can borrow. Indicatively, mortgage rates at 6% would lead to a 35% fall in the loan-to-income ratio, meaning the amount a provider would be willing to lend will be reduced by 35%.

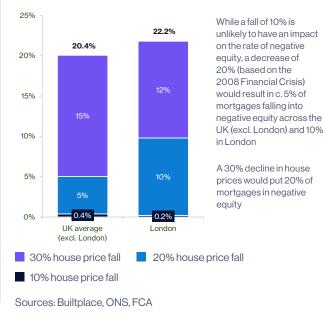
While those with existing mortgages will be able to renew, the increase in payments is likely to have a significant impact on household budgets and may see existing mortgage holders looking to sell.

With new buyers limited in the amount they can borrow and existing borrowers looking to exit the housing market, this will likely reduce demand in the market, which could, in turn, lead to falling house prices and the increased likelihood of negative equity (covered right).

 (\underline{f})

Negative equity for existing mortgage holders

Estimated % of mortgages falling into negative equity if average house prices were to fall



Falling house prices and negative equity have two main impacts on consumer economics and behaviour. Firstly, the long-term impact on confidence that a consumer experiences when falling into negative equity cannot be overstated. Secondly, should mortgage holders see their payments become unaffordable and they find themselves in negative equity, a forced sale of their home will see their entire investment wiped out, forcing them from the housing market and further reducing demand and house prices and confidence.

The previous two house price crashes saw house price falls of close to 20%, with 18% of mortgages going into negative equity in the early 1990s recession. Price falls and negative equity can lead to further economic contraction and can increase the severity of a recession.

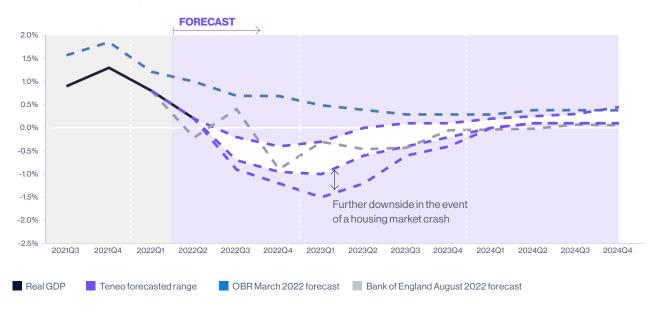
| Recent property crashesHouse price fall (peak to trough)GDP contraction (peak to trough) | | | Description | |
|---|----------------|--------|---|--|
| Early 1990s (1989-95) | (18.2%) | (2.0%) | The recession of the early 1990s, along with high interest rates ar rapid growth of house prices in the late 1980s, led to a significant drop in the value of houses. At the peak of the crash, 18% of mortgages were in negative equity. | |
| Global financial crisis (2007-09) | (18.7%) (5.7%) | | The crisis in the financial sector caused a credit crunch as banks were less willing to lend, significantly reducing buyers' purchasing power and demand for houses. At the peak of the crash, between 7-11% of mortgages were in negative equity. | |

House price falls in recent property crashes

GDP Forecast

This recession has the potential to last for six quarters and a likely range of between 2-4% negative growth annually

Considering the impact the current macroeconomic environment is having on consumer confidence and consumption, GDP growth is expected to be negative in 2022Q3, and the country will enter a recession following 2022Q4. Negative growth is likely to persist throughout 2023 as the UK economy continues to grapple with energy pressures and high interest rates driving a slowdown of the economy, including a reduction in house prices. GDP growth is only likely to turn positive in 2024Q1/Q2. The potential for a housing market crash represents an even further downside to this forecast.



Real GDP quarterly growth forecast,% 2021Q3 - 2024Q4

Sources: OBR, ONS, Bank of England, Teneo research and analysis

Actual GDP growth is likely to be dictated by a small number of key factors

Actual GDP growth will likely be dictated by a small number of key factors, specifically the government's commitment to tax cuts set out in the mini-budget and the timing and strength of the fiscal measures the BoE chooses to pursue in response. Any large rises in interest rates are expected to damage consumer confidence, significantly impacting consumption.

Key contributors to the economic outlook

| | Key contributors | Recessional | ry impact | Commentary |
|-----------------------------|--|----------------------------|------------|---|
| | | Magnitude | Likelihood | |
| Pessimistic contributors | The government's commitment to the mini-budget and continued tax cuts in November | | ٩ | Further tax cuts have been promised for November, with spending cuts expected in order to fund tax breaks. Any further market uncertainty caused by the government's budget is likely to further damage consumer confidence. |
| | BoE's fiscal policy, raising interest rates | \downarrow | ٠ | BoE is expected to raise interest rates as high as 5% in November. This will result in an economic slowdown as mortgage rates go up and borrowing becomes more expensive. A sharp decline in consumer confidence is expected as consumers anticipate mortgage rate rises and increase saving. |
| | Escalation of/prolonged Russia- Ukraine conflict | $\longrightarrow \searrow$ | | Escalation will put further pressure on commodity and energy prices, which will continue to drive inflation and likely prolong the recession. |
| | Housing market crash | \downarrow | | A housing market crash resulting in increased repayments, negative equity and repossessions would increase the severity of the recession. |
| Optimistic ontributors | Government softening on mini-budget and roll-back on commitments | 7 | ٠ | Roll back on the mini-budget is likely to restore market confidence and lower the expected interest rate rise. |
| | Uptick in consumer confidence, following successful implementation of the energy price cap | \uparrow | | If the government's energy support is effective, an uptick in confidence in the spring may take effect as households feel able to pay their bills and increase non-discretionary spending. |
| | Drop in energy and commodity prices | 7 | ٢ | A warm winter, de-escalation of the Russian invasion and/or above-target gas storage may contribute to lower energy prices and lower inflation. |
| | Further government intervention, such as on mortgages | 7 | O | Government intervention on mortgages is likely to soften the depth of recession. |

How Does This Compare to Other Recessions?

There are striking differences between this recession and previous ones

When compared to previous recessions that affected the UK, the currently forecasted recession is likely to differ on a number of levels

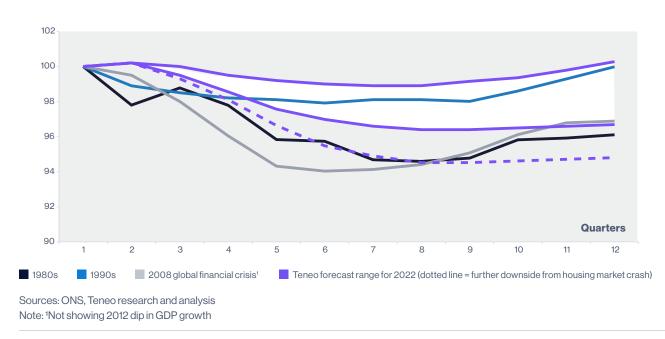
| | Early 1980s recession | Early 1990s recession | 2008 Global Financial Crisis | Current recession |
|--------------|---|--|--|---|
| Scale | Five consecutive quarters of negative growth between 1980Q1 and 1981Q2, peaking at -2% quarterly decline | Five consecutive quarters of negative growth between 1990Q3 and 1981Q4, peaking at -1.1% quarterly decline | Five consecutive quarters of negative growth between 2008Q2 and 2009Q3, peaking at -2.2% quarterly decline | Although the exact length and depth of this recession is still unknown, 3-6 quarters of negative growth is anticipated |
| Cause | Deflationary government policies to reduce high inflation, including spending cuts and tight monetary policy, and the switch from a manufacturing services- based economy to a services one | High interest rates in response to rising inflation caused by the Lawson Boom and the weakening £ against foreign currencies, including the \$ and deutschemark | Excessive risk-taking by global financial institutions and the bursting of the US housing bubble led to a rapid reduction in global credit availability | Rising energy and commodity prices exacerbated by the conflict in Ukraine, a tight labour market and a weakening pound, primarily against the US dollar |
| Key features | Inflation peaked at 18% and interest rates at 17%; unemployment rose from 5.3% to 11.9%, mainly impacting those in manufacturing | Inflation peaked at 9.5% and interest rates at 14.8%; unemployment rose from 6.9% to 10.7%, while housing prices fell by 18.2% | Inflation rose partially (c.5%) due to high oil prices; however, interest rates were dropped to 0.5% to stimulate spending; unemployment rose to 8.3%, while housing prices fell by 18.7% | Inflation is forecast to peak at 12%, while interest rates could rise to 6%; unemployment is forecast to remain low; however, housing prices are likely to fall significantly |

The recession that is forecast to impact the UK is likely to affect a wider range of households, particularly the middle class, homeowners and families.

Key differences today

- 1. The current tight labour market makes it unlikely that unemployment will rise substantially
- 2. The UK is a considerably larger net importer than during previous runs on the pound, leading to greater inward inflationary pressure
- **3.** While interest rates have risen higher in the past, the relative scale of increase that will be required this time (rate of 0.1% in Dec2021) is significantly greater than at any time in history

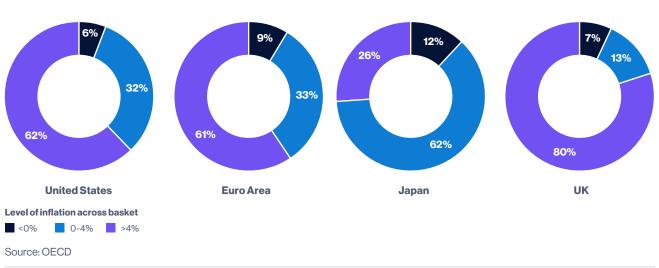
Taken together, these factors could mean the recession has the potential to be longer, with widespread inflation challenging to unwind. However, with no significant job losses or other substantial losses of income, its overall profile is expected to be shallower.



Real GDP growth, indexed to Q1 before the start of the recession

How Does the UK Compare to Other Countries?

While inflationary pressures remain a global challenge, the degree to which they are forecast to impact specific countries varies



Inflation impact on % of consumer baskets around the globe

How inflation pressure compares across the world

Inflation pressures persist across the globe

- Due to global supply chain issues and rising energy prices, inflation remains high globally
- In the US, inflation has surpassed 9% in 2022, while in Australia, it is close to 7%, and in Brazil it peaked at over 12%

Challenges are most acute in Europe

 Moving into winter, European countries are most likely to be significantly affected due to the continent's reliance on Russian gas and the predicted increase in global demand driving prices up further

Germany is particularly at risk due to a reliance on cheap energy

 The German economy is most at risk, due to the high amount of energy it imports, its reliance on exports (of which its competitiveness will fall with higher prices) and the limited control it has over its monetary policy as a Eurozone member

The situation in the UK is among the worst

- The UK remains in a more precarious position than most due to its weakened trade ties with Europe and falling net inward migration following Brexit, and
- The recent mini-budget that has been poorly received by investors and led to a **run on the pound**

What Does This All Mean?

Addressing consumer confidence and the pain felt within low-income groups is key to increasing consumption and easing the recession; however, the threat to the housing market represents a significant risk



The prospect of raising interest rates may prolong the recession

The UK is heading into a recession driven by high inflation. The traditional mechanism employed to manage high inflation is high-interest rates, while the traditional mechanism employed to support an economy in recession is to set low-interest rates.

The prospect of raising interest rates in a recessionary environment risks lengthening and increasing the severity of this recession.



Encouraging spending is likely the quickest way out

Individuals in high-income groups have money to spend; however, low levels of consumer confidence mean they are choosing to save instead. Further interest rate rises are likely to further exacerbate this trend as homeowners become increasingly worried about interest payments.



Low-income groups are likely hardest hit

Low-income groups are expected to be incredibly hard hit by this recession, experiencing the highest levels of inflation coupled with the lowest levels of wage rises. This group will continue spending, as they will have no opportunity to save. Any windfall provided to these groups is likely to be funneled immediately back into the economy and spent in order to cover living costs.



There is a significant threat to the housing market

Large increases in mortgage rates could have a significant knock-on impact to house prices, resulting in widespread negative equity and individuals defaulting as they become unable to afford to renew mortagages.



Government intervention needs to be targeted

While the tax cuts outlined in the mini-budget can be seen as the government attempting to invigorate the economy and encourage spending, these efforts may fall short. Tax cuts to high-income groups, without increasing consumer confidence, are unlikely to result in spending. The government should therefore focus on consumer confidence in this group, not increasing total income.

Within lower income groups, tax cuts and/or additional support are likely to be much more effective and immediately translate into spending.

Some intervention may be required to support the housing market. This could include collaboration with the BoE to keep rates lower or direct intervention on repayments.



Businesses selling discretionary goods and services are most vulnerable

Higher cost discretionary goods and services are likely to be particularly vulnerable. Businesses will need to focus on value for money and strong engagement and promotional strategies in order to capture spend. Low-cost essential goods providers (e.g. discount supermarkets) are likely to see strong growth.

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