

State of the Economy

Office of the Chief Economic Adviser

October 2022

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October 2022**

Data up to 21 October 2022

Overview

This year has seen a significant deterioration in the medium term economic outlook. Rising inflationary pressures are causing a cost and wellbeing crisis for households and businesses, destabilising the recovery from the pandemic, giving rise to new economic risks and raising the prospect of a prolonged recession.

We have also had an unprecedented period of economic and financial uncertainty following the UK mini budget, which has significantly increased short term policy and economic uncertainty. This has been most visible in financial markets with increased borrowing costs and the need for the Bank of England to intervene to stabilise financial markets. The economic implications of this have already fed through to the real economy – economic activity, uncertainty, expectations and confidence have all been material impacted. Despite the reversal of many of the unfunded tax policies, the UK economy has already been impacted and has created more uncertainty for addressing the economic challenges ahead.

Inflationary pressures have been building since Covid restrictions were fully removed earlier this year. However, supply in the economy recovered more slowly than demand, adding to inflationary pressures. This was initially expected to be temporary as the economy adjusted, however the war in Ukraine and the subsequent constraints on gas supplies into Europe risks both a more prolonged period of energy price inflation and physical supply constraints.

In the immediate term, the outlook for businesses and households is significantly more challenging than expected at the start of the year. Business surveys for August and September are already indicating that activity is contracting while cost pressures remain elevated as businesses face a significant rise in energy prices, combined with rising staff costs. Overall labour market conditions remain tight, with unemployment at near record lows, however there are indications that recruitment activity has moderated as the outlook for demand has weakened and business adjust activity to deal with increased cost pressures.

Household finances are being squeezed, with the rise in inflation resulting in further falls in median real incomes, which fell for their eighth consecutive month in September, and consumer sentiment falling to its lowest level since November 2020.

The Energy Price Guarantee for households and businesses to tackle the cost crisis is an important intervention. It should reduce inflationary pressures in the short term and reduce the impact on output, but is only temporary. Nonetheless, even with the energy price support in place, the energy price cap from October is double what it was last year and it is not clear what the long term response to prices will be for households and businesses given the review and the changes from April 2023.

Businesses in particular have little certainty around the outlook, while broader inflationary pressures, rising interest rates and a weak exchange rate are still set to place considerable new cost pressures on households and businesses at a time when they are continuing to recover from the pandemic. Therefore, we are likely to see significant changes in business models to deal with adverse supply shocks relating to energy and labour inputs.

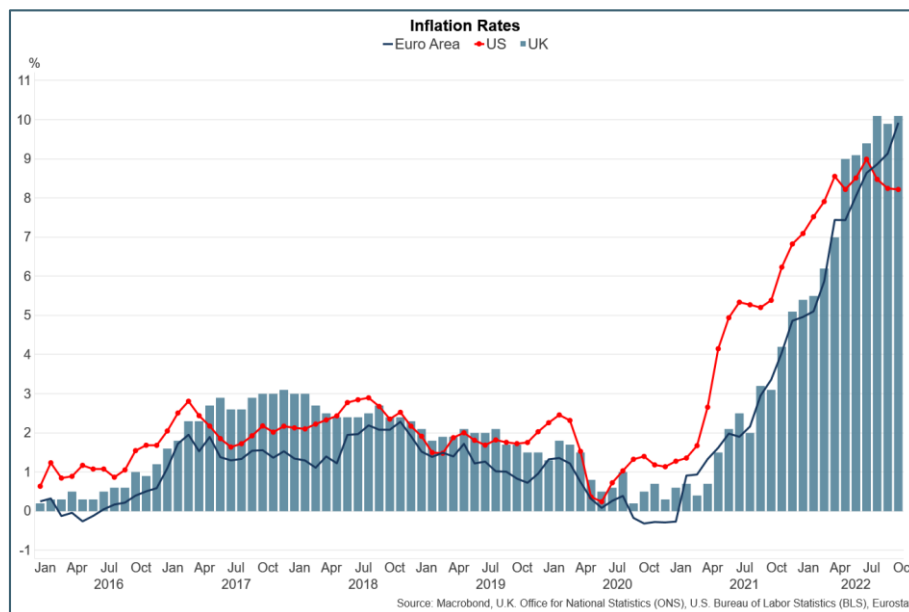
This edition of the State of the Economy considers different future economic scenarios for inflation and unemployment while also reflecting on the uncertainty facing energy demand and supply as well as wage levels. It highlights how the impacts of inflation are uneven, with those in stable employment and able to protect their real income, alongside those that accumulated savings during the pandemic, are more resilient to inflationary challenges.

Finally, the current outlook for the economy is particularly complex given the different factors impacting the economy at this time and the market responses to UK Government fiscal policy announcements. All of which suggests a path of uncertainty over the winter period and more turbulence in relation to economic conditions. At best, we can expect a shallow recession but as our scenarios work highlights, risks are increasingly weighed towards a more prolonged disruption to output and economic activity.

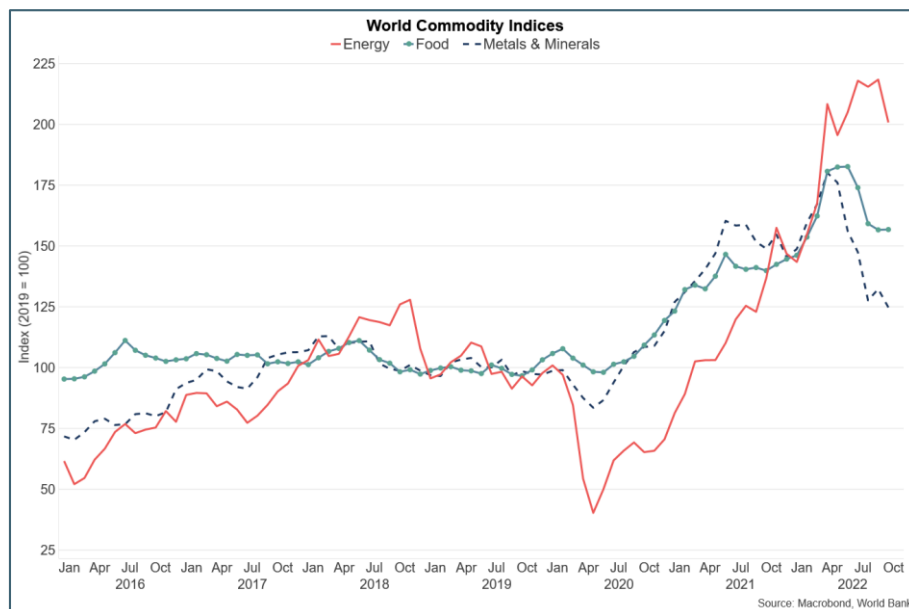
Introduction

Economic conditions have deteriorated rapidly since the start of 2022 at a global and domestic level. The war in Ukraine has interrupted the gradual recovery from the pandemic, causing an energy supply and inflationary shock which is expected to push the economy into recession.

At a global level, inflationary pressures have been building since last year as the economy has been recovering from the pandemic and the supply side of the economy has been slowly adjusting to the rebound in demand. Global supply chains continue to be disrupted by the pandemic, particularly in China where the zero-Covid strategy continues to require regional lockdowns.



These inflationary pressures were initially expected to be largely temporary as the economy adjusted to post-pandemic conditions. However, the war in Ukraine at the start of 2022 has exacerbated and further destabilised the recovery on the supply side, placing further significant upward pressure on international commodity prices across food, metals and particularly energy. While commodity price rises across food, metals and oil have eased slightly in recent months (though remain significantly higher than their levels last year), wholesale energy prices, particularly gas, have remained particularly elevated and volatile.



Furthermore, the recent indefinite closure of the Nord Stream 1 natural gas pipeline into Germany presents a further negative gas supply shock into Europe, which has further driven up gas prices and ultimately raises the risk of supply shortage.

The combination of these factors has fundamentally weakened the economic outlook. The economy is now expected to enter a much more lengthy period of high inflation and fall into recession, reflecting the negative impacts on the demand side of the economy and an extremely challenging outlook for households and businesses.

Economic Risks

The risks to the economic outlook and the implications for businesses and consumers, the labour market and more widely are captured in the table below.¹ This sets out a range of indicators through which economic developments and risks are being monitored.²

The full scale of the cost crisis and worsening economic outlook are yet to emerge, however economic conditions have progressively weakened over the year so far, and leading indicators are signalling that consumer and business activity have weakened in the third quarter.

The risks are highest around economic output, inflation, exchange rate and UK public finances. Weak consumer sentiment, earnings, and ongoing challenges for businesses around labour shortages are other key risks.

¹ Sources in the table below: **Economic Performance:** GDP statistics, S&P Global RBS PMI. **Labour Market:** Labour Market Statistics, S&P Global RBS Report on Jobs, Business Insights and Conditions Survey (BICS), ONS Real Time Information Statistics. **Trade:** HMRC Regional Trade Statistics, S&P Global UK PMI, Economic Policy Uncertainty (EPU), BICS. **Prices:** ONS, Food and Agricultural Organisation of the UN. **UK Public Finances:** ONS. **Outlook:** S&P Global RBS PMI, Scottish Consumer Sentiment Indicator, Economic Policy Uncertainty.

² We also continue to monitor a wide range of indicators in our Monthly Economic Brief: [Monthly economic briefs - gov.scot \(www.gov.scot\)](http://www.gov.scot)

Snapshot of Indicators

Colour coding reflects assessment of economic risk for an indicator during 2022/23, relative to historic trends.

Red - expected to weaken // **Amber** - expected to remain fragile with downside risks // **Green** - expected to remain broadly stable/fine relative to historic trends.

Economic Performance

Indicator	Latest Data		Monthly Change	Risk
Monthly Real GDP growth	-0.2%	Jul-22	▼	Red
Business Activity Index (>50 = growth)	48	Sep-22	▼	Amber
New Business (>50 = growth)	46.6	Sep-22	▼	Red

Labour Market

Indicator	Latest Data		Quarterly Change	Risk
Unemployment Rate	3.3%	Jun-Aug 22	▼	Green
Employment Rate	75.8%		▲	Green
Inactivity Rate	21.6%		▼	Amber
			Monthly Change	
Job Demand Index (>50 = growth)	63.8	Sep-22	▼	Green
% of firms reporting staff shortages	41.6%	Sep-22	▼	Red
Nominal median earnings annual growth	5.3%	Sep-22	▲	Amber
Real median earnings annual growth	-4.4%	Sep-22	▲	Red

Trade

Indicator	Latest Data		Monthly Change	Risk
Goods Exports (ex oil and gas) (Nominal growth v same period in 2019)	12.9%	H1 2022 v H1 2019		Green
UK Suppliers' Delivery Times (>50 = improving)	42.1	Sep-22	▼	Amber
World Geopolitical Risk Index	129	Sep-22	▼	Amber
Share of businesses exporting less than a year ago (or unable to export)	15.8%	Sep-22	▼	Amber

Prices

Indicator	Latest Data		Monthly Change	Risk
CPI Inflation Rate (UK)	10.1%	Sep-22	▲	Red
PPI Input Price Inflation Rate	20.0%	Sep-22	▼	Red
Oil Brent Crude \$/b (monthly average)	\$91	20-Oct-22	▼	Red
Food Prices Index (F.A.O)	136.3	Sep-22	▼	Amber
Exchange Rate (£/\$)	1.12	20-Oct-22	▼	Red
Exchange Rate (£/€)	1.15	20-Oct-22	▲	Red

UK Public Finances

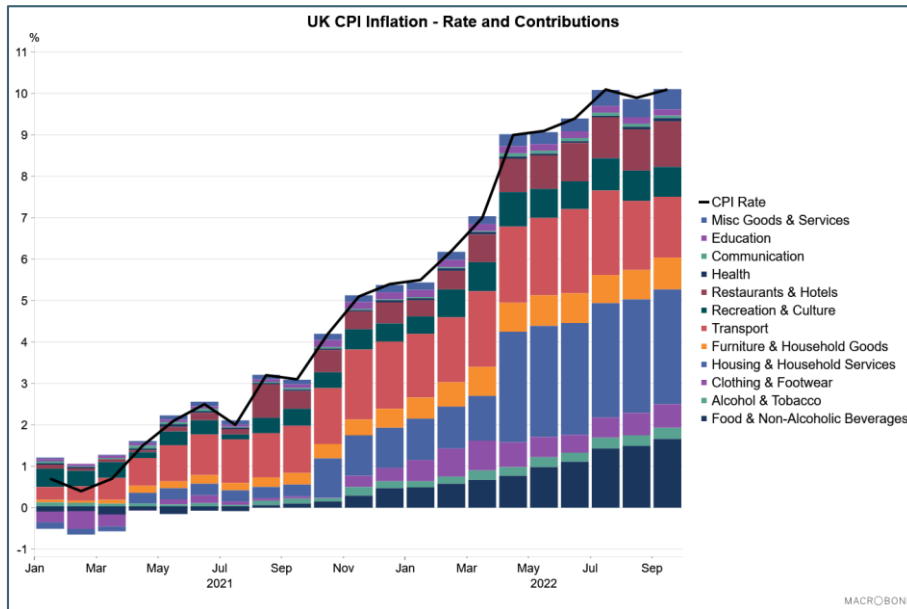
Indicator	Latest Data		Annual Change	Risk
Bond Yields (UK 10 -year)	3.91	20-Oct-22	▲	Red
Public Sector Net Borrowing ex	£20bn	Sep-22	▲	Red
Government Receipts	£71.2bn	Sep-22	▲	Amber
Government Expenditure	£79.3bn	Sep-22	▲	Red
Public Sector Net Debt ex (% of GDP)	85.1%	Sep-22	▼	Red

Outlook

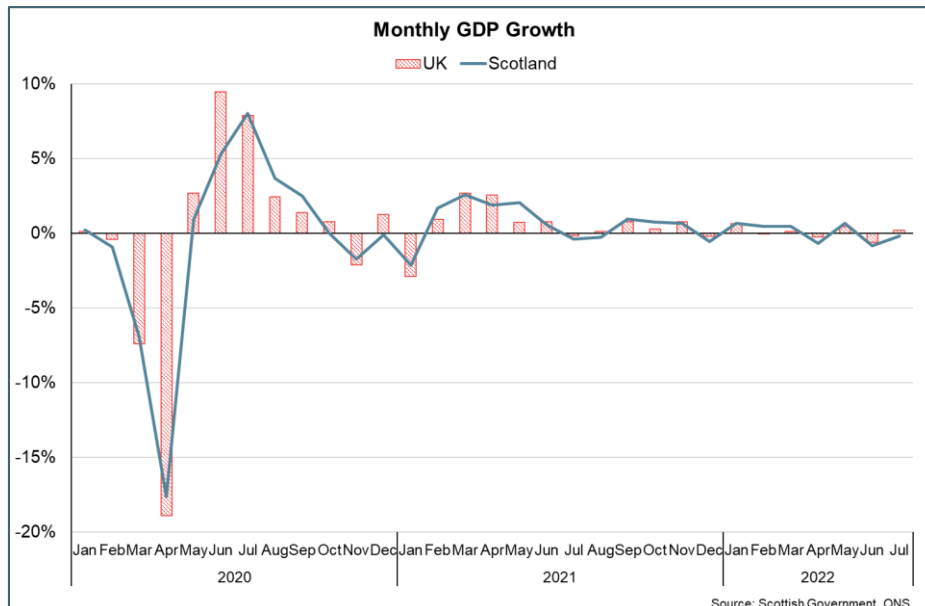
Indicator	Latest Data		Monthly Change	Risk
Business Future Expectations (>50 = growth)	51.5	Sep-22	▼	Amber
Consumer Sentiment Index (>0 = positive)	-21.1	Aug-22	▼	Red
Consumer Sentiment Personal Index (>0 = positive)	-26.7	Aug-22	▼	Red
Consumer Sentiment Economy Index (>0 = positive)	-12.7	Aug-22	▼	Red
Economic Policy Uncertainty Index (UK)	226	Sep-22	▲	Amber

The increase in inflationary pressures and the outlook for inflation are very much at the heart of current economic risks. UK inflation rose to 10.1% in September (the same rate as in July) having dipped to 9.9% in August, and is at its joint highest rate since the early 1980s.³ The rise in inflation has been predominantly driven by increases in the price of electricity, gas and other fuels, up 70.1% over the year to September, driven by the increase in wholesale gas prices, however rising food prices particularly drove the increase in the rate between August and September. Furthermore, inflation has been broad based across goods (13.2%) and services (6.1%) and indicates that domestic inflationary pressures have increased, albeit to a much lesser extent than external drivers.

³ [Consumer price inflation, UK - Office for National Statistics](#)



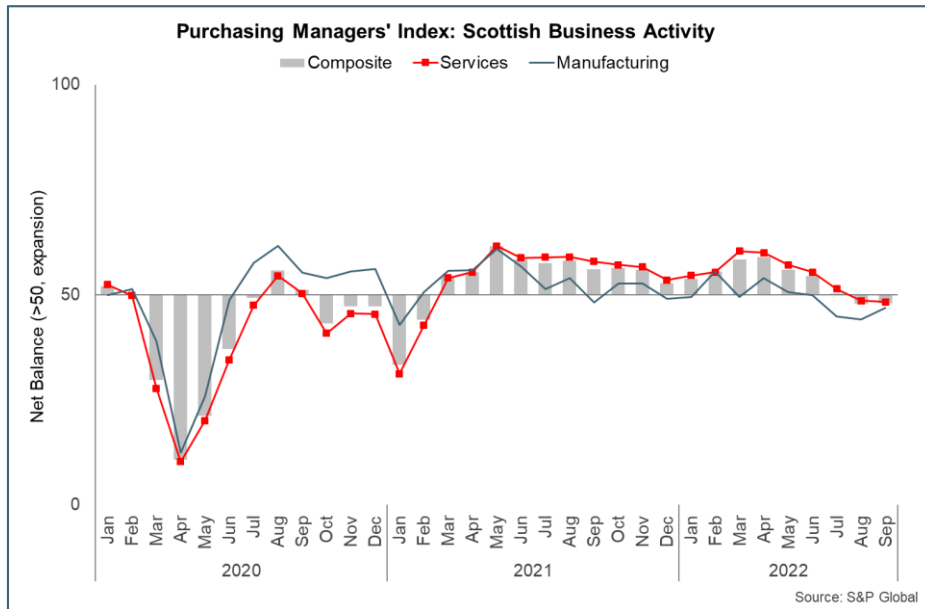
In terms of economic performance, the Scottish economy has been gradually recovering from the pandemic, with GDP 0.1% above its pre-pandemic level. However the pace of growth has been slowing during the year. Latest data for July show Scotland's GDP fell 0.2% over the month, following flat growth (0.0%) over the second quarter. UK GDP as a whole has shown a similar pattern with latest data for August showing a fall of 0.3% over the month and a fall of 0.3% on a 3-month on 3-month basis.⁴



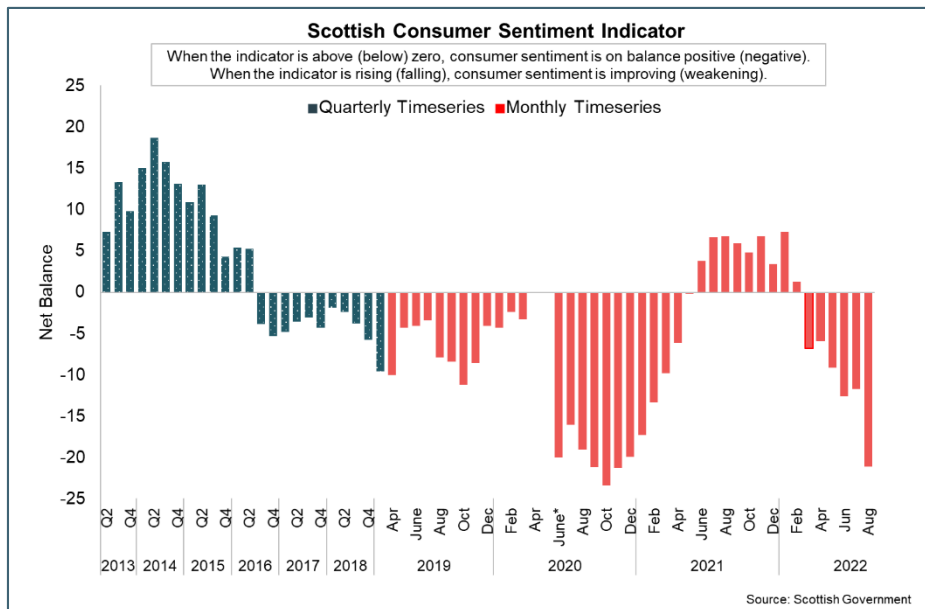
Business survey indicators point to further slowing activity in the third quarter, with the Purchasing Managers' Index (PMI) entering negative territory in August for the first time since February 2021 and remaining negative in September, driven in part by a fall in new business/orders.⁵

⁴ [Economy statistics - gov.scot \(www.gov.scot\)](https://www.gov.scot/economy-statistics), [GDP monthly estimate, UK - Office for National Statistics \(ons.gov.uk\)](https://ons.gov.uk)

⁵ [Royal Bank of Scotland PMI report for September 2022 | Royal Bank of Scotland \(rbs.co.uk\)](https://www.rbs.co.uk/royal-bank-of-scotland-pmi-report-for-september-2022)



Similarly, there are indications that consumer sentiment and activity is weakening. Consumer sentiment in Scotland has fallen sharply since the start of the year to its lowest level since November 2020 during the pandemic. The survey indicates sharp falls in sentiment regarding the economic outlook, household financial security and how relaxed households feel about spending money.⁶

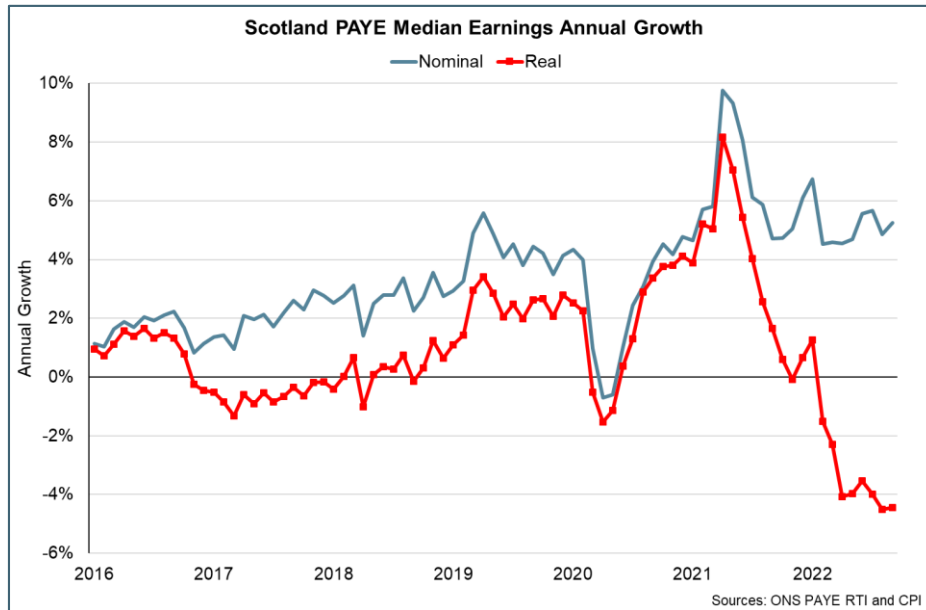


At a GB level, retail sales volumes fell 1.4% over the month in September and fell 6.9% over the year. However, the value of sales increased by 3.8% over the year, illustrating the impact that rising prices and cost of living issues are having on sales.⁷

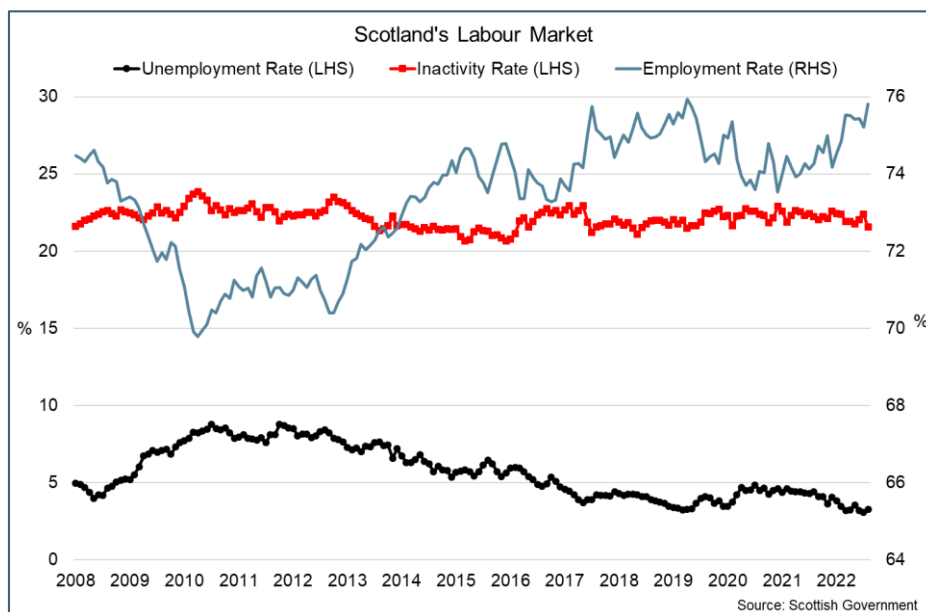
⁶ [Economy statistics - gov.scot \(www.gov.scot\)](http://www.gov.scot)

⁷ [Retail sales, Great Britain - Office for National Statistics \(ons.gov.uk\)](http://ons.gov.uk)

The impacts of rising inflation on household budgets is reflected on real earnings. While nominal median PAYE earnings grew 5.3% over the year to September, they fell 4.4% in real terms once adjusted for inflation; the eighth consecutive month of decline.⁸



The growth in nominal earnings partly reflects the ongoing tightness in the labour market. Unemployment in Scotland fell to a record low of 3.1% in the 3-months to July and remains low at 3.3% in the 3-months to August, while vacancy rates remain elevated with 42% of firms reporting a shortage of staff in September, placing upward pressure on pay settlements.⁹



The RBS Jobs Report for September indicates that recruitment activity remains positive, but the levels of demand for staff have eased, indicating that the slowing in business activity and

⁸ [Earnings and employment from Pay As You Earn Real Time Information, seasonally adjusted - Office for National Statistics \(ons.gov.uk\)](https://ons.gov.uk/earnings-and-employment-from-pay-as-you-earn-real-time-information-seasonally-adjusted)

⁹ [Labour market statistics - gov.scot \(www.gov.scot\)](https://www.gov.scot/labour-market-statistics)

weakening outlook expectations may be starting to feed through to labour market activity.¹⁰ However due to the tightness in the labour market, the Bank of England project that unemployment in the UK is unlikely to rise until mid-2023, despite the economy entering recession.

Monetary and Fiscal Policy Response

The outturn data illustrates the economic risks which have emerged, however, the level of uncertainty in the economic outlook continues to be extremely elevated, both at a global and domestic level.

In response to rising inflation and slowing growth, in October the IMF forecast global growth to slow to 3.2% in 2022 and to 2.7% in 2023 (revised down 0.2 percentage points from July).¹¹ In August, the Bank of England revised down its forecast for the UK economy with its central scenario projecting inflation to rise to 13% and pushing the UK economy into recession throughout 2023.¹²

Furthermore, the outlook will be influenced by the monetary and fiscal policy response. Despite the risk of inducing recession, monetary policy is being tightened by central banks as they seek to address underlying inflationary pressures and to reduce the risk that they become embedded more widely in the economy and persist for longer. Higher interest rates will increase the cost of borrowing and debt financing for households and businesses while providing a higher return for savers.

The fiscal expansionary measures announced in the UK Government Growth Plan, many of which have subsequently been reversed, are expected to have material implications for the economic outlook and public finances. It remains unclear how the remaining tax cuts will be funded and the extent to which public expenditure cuts will be forthcoming. The Office for Budget Responsibility will publish its forecasts on 31 October alongside the UK Government's Medium Term Fiscal Plan.

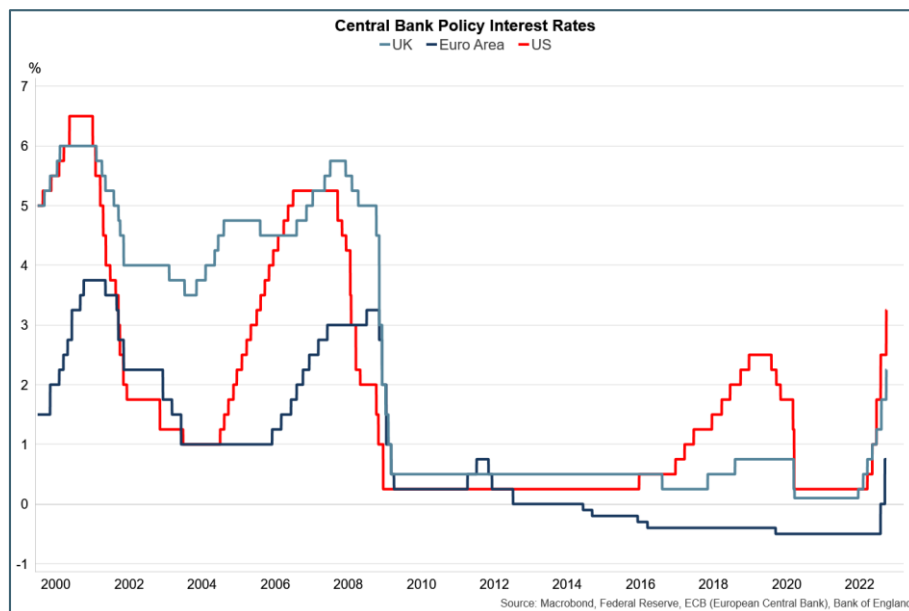
The Bank of England's Monetary Policy Committee has implemented seven consecutive increases in the Bank Rate since December 2021, taking it from 0.1% to 2.25% in September, its highest rate since 2008.¹³ The US Federal Reserve announced a fifth successive rate rise in September, increasing its federal funds rate by 0.75 percentage points to a target range of 3% – 3.25%, while the European Central Bank raised interest rates by 0.75 percentage points to 0.75%.

¹⁰ [Royal Bank of Scotland Report on Jobs – October 2022 | NatWest Group](#)

¹¹ [World Economic Outlook, October 2022: Countering the Cost-of-Living Crisis \(imf.org\)](#)

¹² [Monetary Policy Report - August 2022 | Bank of England](#)

¹³ [Bank Rate increased to 2.25% - September 2022 | Bank of England](#)



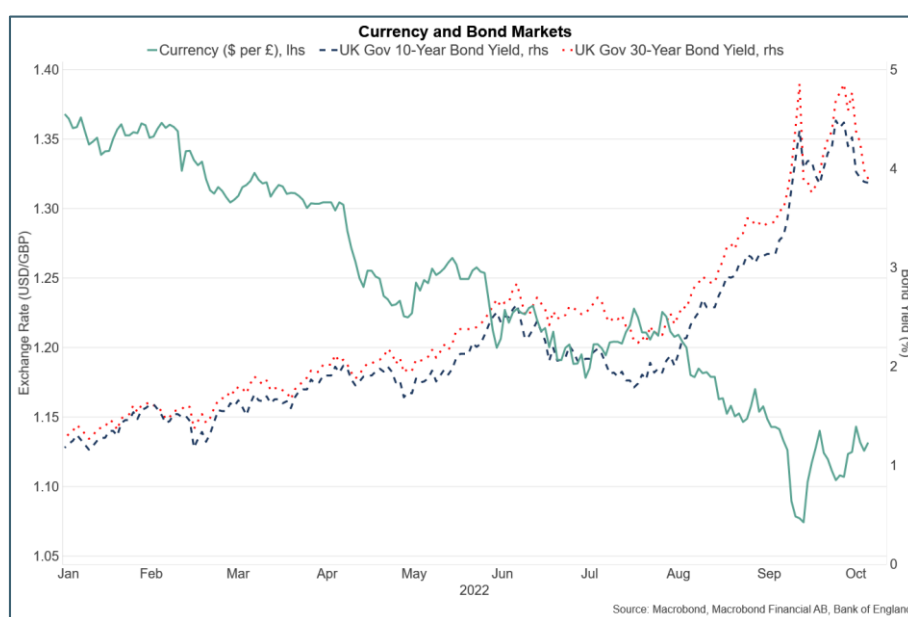
With tightening monetary policy, the scale and duration of the economic downturn in the short term will depend in part on the ability of fiscal policy to support businesses and households through the period of high inflation and low growth while enabling inflation to fall sustainably back to its target rate of 2%.

In response to the significant impact that rising energy prices were projected to have on household and business costs, the UK Government has set out a 6-month package of energy relief for households and businesses to tackle the cost crisis. The Energy Price Guarantee will cap typical household energy bills at £2,500 per year until April 2023, when the policy is scheduled for review. This takes account of the £150 removal of green levies and together with the previously announced £400 energy price rebate means that bills will effectively remain capped at around £2,100 over the winter. Alongside this, businesses (including charities and public sector organisations like schools) will now pay the same energy prices as households for the next six months, with a further review scheduled to consider how to provide ongoing focused support to vulnerable industries, such as Hospitality.

The introduction of the Energy Price Guarantee is expected to reduce the extent to which inflation will rise in the short term, with the Bank of England expecting inflation to now peak at just under 11% in October. However due to the increase in energy prices already embedded, inflation is expected to remain above 10% over the next few months. The extent to which the policy will mitigate energy price inflation in the economy is uncertain beyond April 2023, however the Bank of England will publish their next Monetary Policy Report and forecasts on 3 November.

The larger stock of debt through higher borrowing will also increase the longer term challenges facing sustainability in the public finances, with public sector debt costs in August at a record high.

The increasing scale of uncertainty and risk in the economic outlook continues to be reflected in financial market volatility. In the week beginning 24 September, the pound fell to its lowest levels against the dollar since 1985, and bond yields rose to their highest rates in over a decade. Due to the scale of repricing of financial assets, particularly affecting long-dated UK government debt and the exposure of pension schemes, the Bank of England intervened to carry out temporary purchases of long-dated nominal UK government bonds to restore market functioning and reduce risks to UK financial stability.¹⁴ This supported some reversal in the sharp market movements from the previous week, however further subsequent increases in bond yields and the associated risks to UK financial stability resulted in the Bank announcing enhancements to its operations to further support market functioning and an orderly end to the bond purchase scheme.



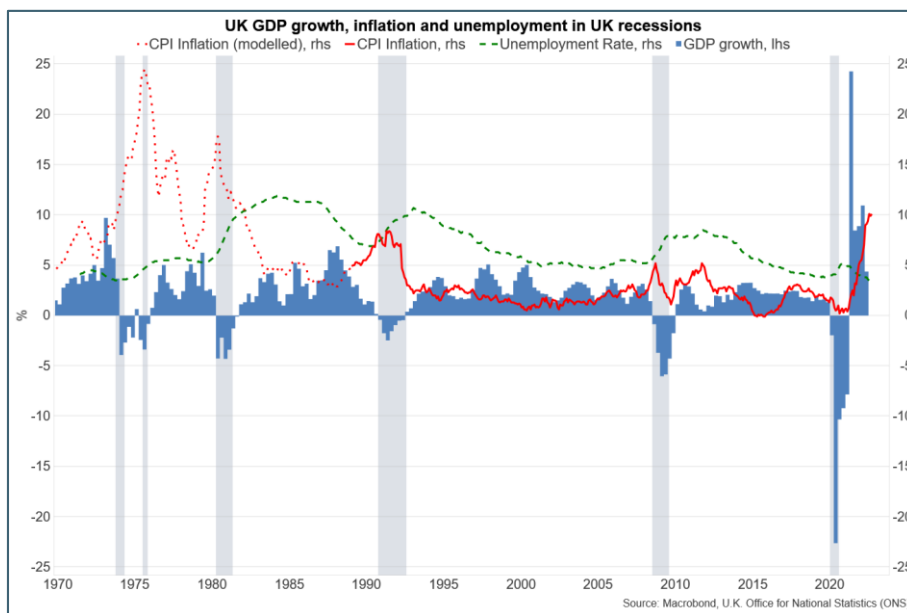
Following the completion of the Bank’s temporary bond-buying scheme and the announced reversal of many of the UK Government Growth Plan measures, Sterling has further recovered from its sharp fall in September, while bond yields have partly reversed from its recent spikes, however remain notably higher than in recent months.

Comparison of current economic conditions to previous recessions

The full extent of the high inflation and recessionary economic outlook is yet to emerge, in terms of scale, duration and long term impacts. The context and nature of the current economic environment is different to previous economic shocks/downturns, however comparisons to periods of higher inflation and economic downturns can be made to draw key similarities and differences and provide an element of scale.

¹⁴ [Bank of England announces gilt market operation | Bank of England](#)

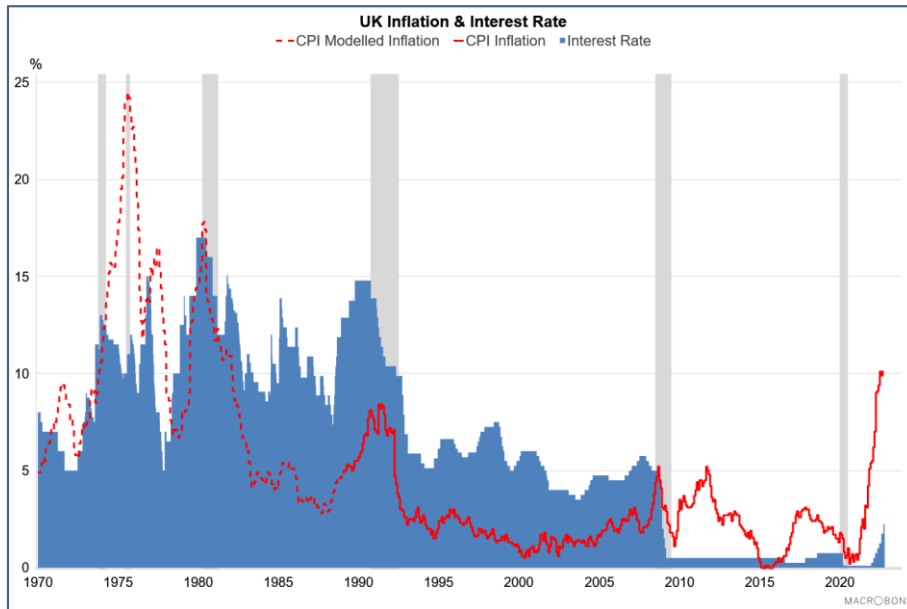
The graph below shows previous UK recessions denoted by the grey bars and that rising inflation and falling output is a similar pattern to the recessions of the mid 1970s, early 1980s, particularly the link to energy price volatility, and early 1990s.



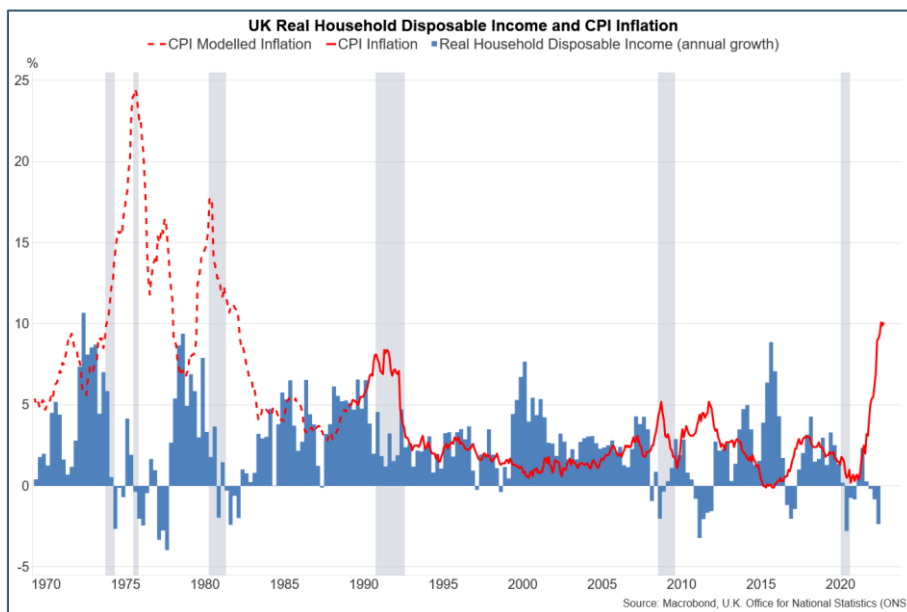
There are important differences between the current economic situation and previous recessions:

- Inflation: The Bank of England currently expect inflation to rise to 11%; higher than its peak in the early 90s (c.8%), but is notably below the peak inflation rates of the mid-70s (c. 25%) and early 80s (c.18%).
- Unemployment: currently at a near record low rate of 3.3% in Scotland (UK: 3.5%) and is forecast to rise at a UK level to slightly above 6% in 2025, but remain below the +10% rates of the 1980s and early 1990s recessions.
- Interest rates: markets expect interest rates to rise and peak at around 4.75%¹⁵ in 2023, but this remains notably lower than during the recessions of the mid 1970s (c.12%); 1980s, (peak 17%) and 1990s (peak 14.8%).

¹⁵ [Bank Rate increased to 2.25% - September 2022 | Bank of England](#)



However the chart below shows that periods of higher inflation and falling output have tended to result in periods of falling real disposable household income thereby affecting household wellbeing. This was evident in the 1970s and early 1980s. The rise in inflation in the early 1990s recession saw household disposable income growth slow but remain positive. Real household disposable income fell following the financial crisis, with a further fall emerging following the pandemic. In August, the Bank of England projected real post-tax income to fall by 1.5% in 2022 and a further 2.25% in 2023, however this was before the announcements of the UK Government fiscal support package.



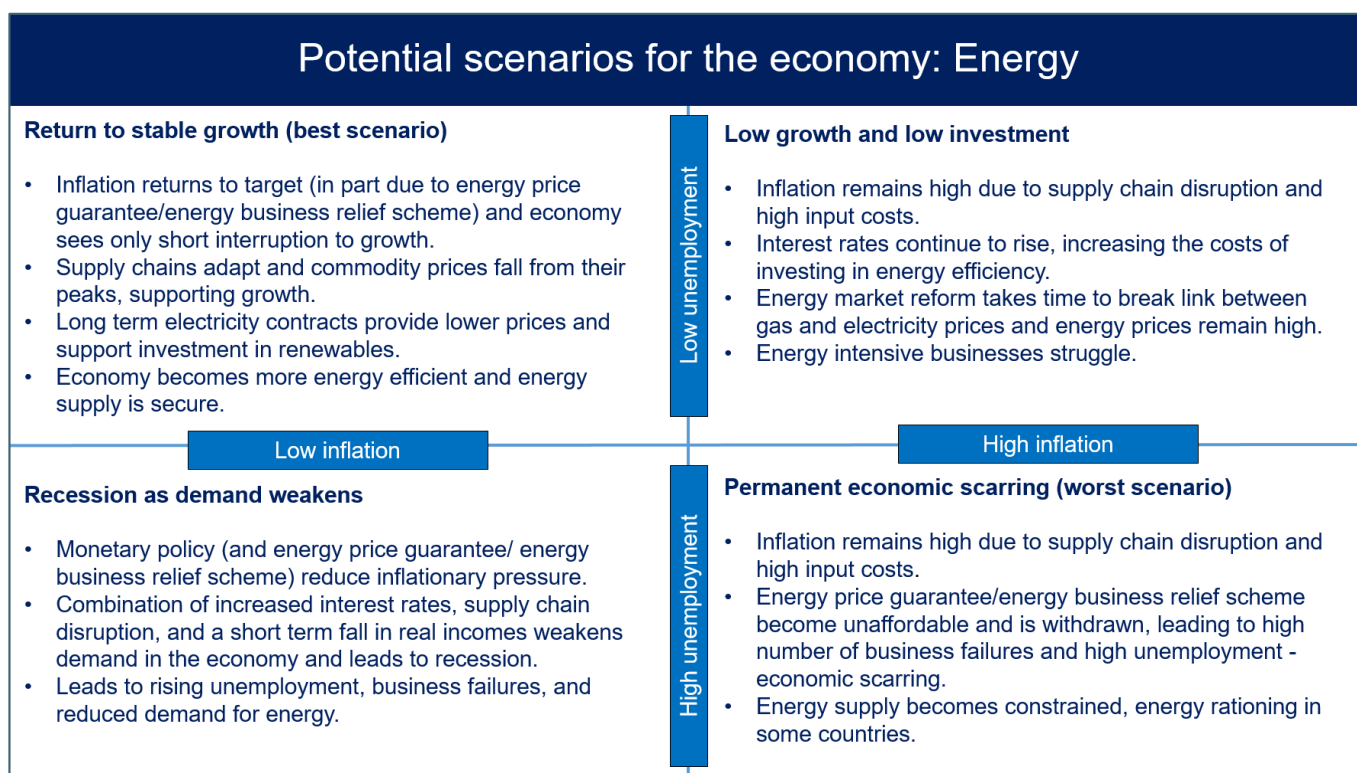
Potential Scenarios for the Economy

The level of uncertainty around the economic outlook is exceptionally high, and has been exacerbated further by the UK Government Growth Plan. The degree to which inflation will

come down and the extent to which unemployment may be affected are two key factors determining the economic outlook.

Recent developments in international energy markets have highlighted that both the links between gas and electricity pricing, and the potential for constraints in supply at an international level, mean that the outlook for energy supply and consumption are also projected to be a key factor in the economic outlook (see Box A).

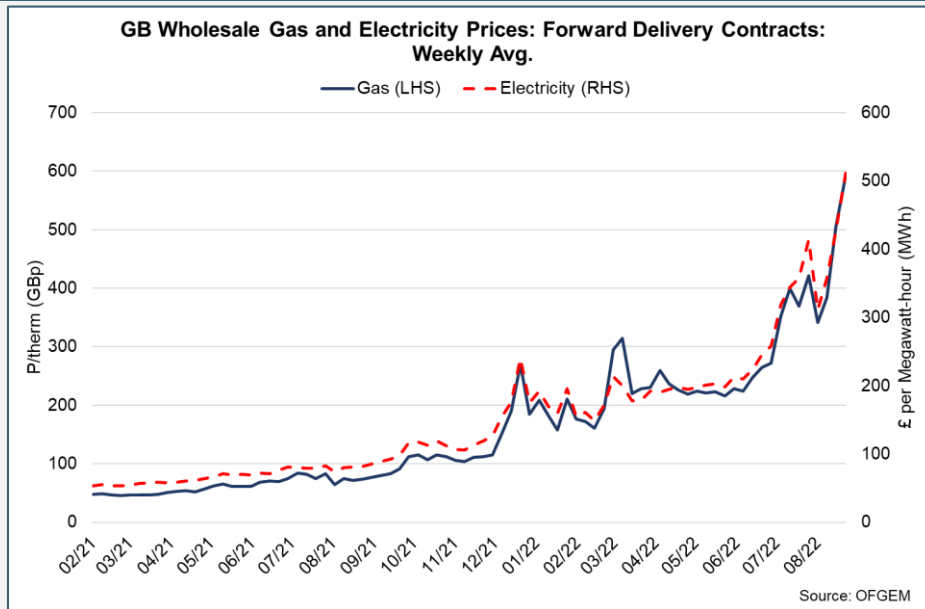
The diagram below sets out four alternative potential scenarios for the economy, based on uncertainty over the two dimensions of inflation and unemployment, focusing on energy implications. The top left quadrant ‘return to stable growth’ is the best case scenario, while the bottom right quadrant ‘permanent economic scarring’ is the worst case scenario. In the best case scenario, the economy is more energy efficient and energy supply is secure. In the worst case scenario, energy supply becomes constrained and business failure rates are high.



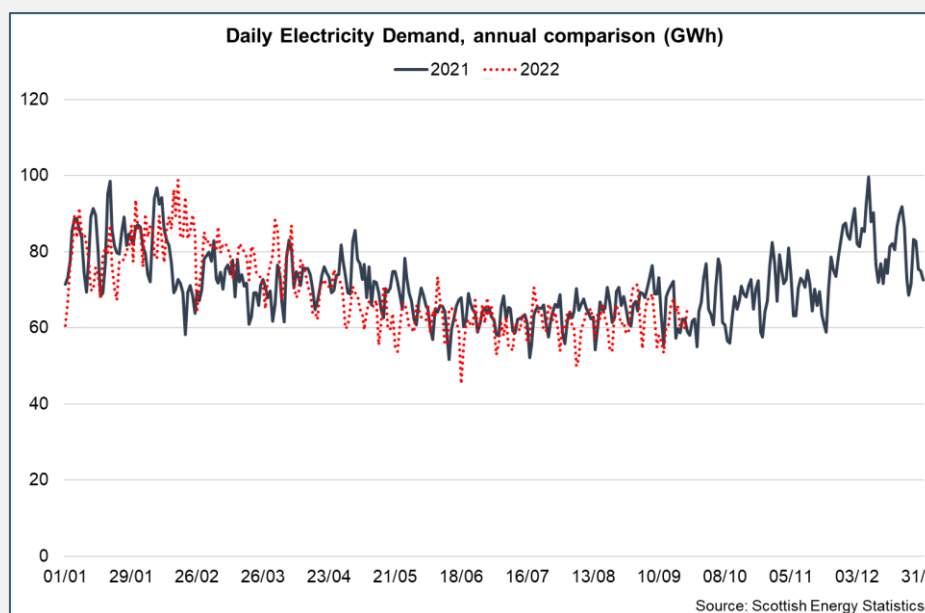
Box A: Energy Demand and Supply

The UK gets around 40% of its electricity demand from gas fired power stations and as such the cost of gas has a strong impact on the cost of electricity.¹⁶ With gas prices at record highs, electricity prices have also risen with little distinction between the cost of electricity produced by gas and electricity produced by other means. In the GB market, the price of electricity is dictated by the costs of the final unit of electricity required to meet demand, which is often gas.

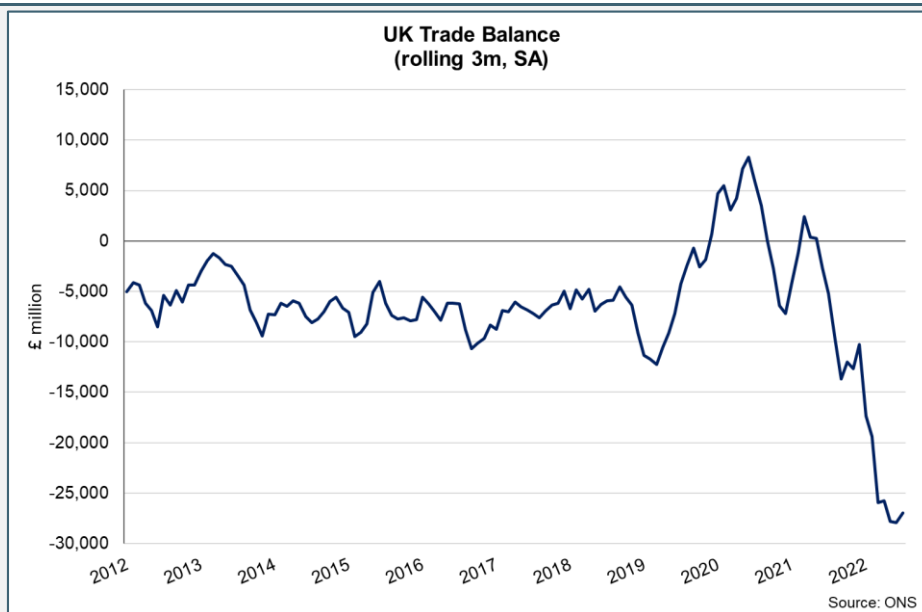
¹⁶ [Energy Trends: UK electricity - GOV.UK \(www.gov.uk\)](http://www.gov.uk)



The initial UK Government policy response has been one of price support (energy price guarantee / energy business relief scheme). A market limitation of this is that it weakens price signals and could mean that energy demand could remain too high. So far, energy demand does not appear to have significantly changed as the price cap has changed, and it may not come down further with the introduction of the price guarantee. Therefore, although the energy price guarantee mitigates the price it also distorts the market mechanism in terms of driving change in energy consumption and innovation as you would expect with such a price change. The Energy Price Guarantee will be reviewed in April 2023 and as such there is uncertainty regarding the nature and level of the policy response beyond this.



However, there are limited options to cut demand in the short run and therefore supply side issues become more important. The UK is a net energy importer and recent price changes have contributed to overall changes in the trade balance.

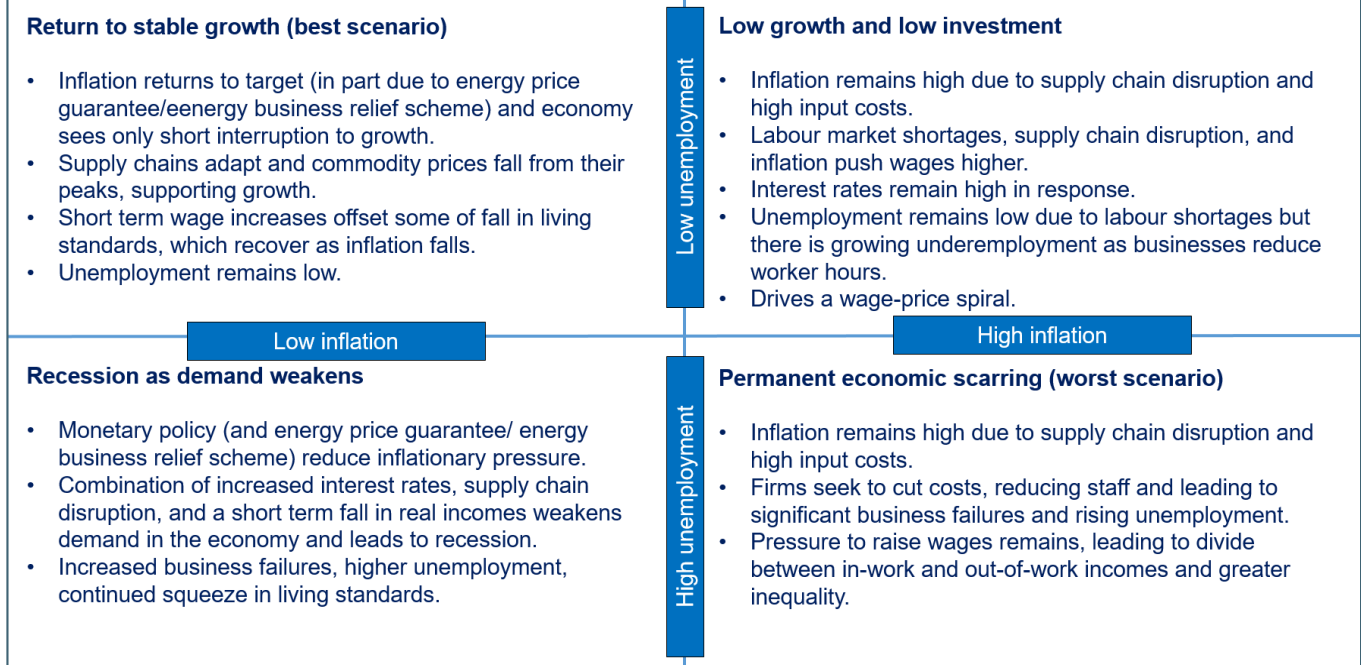


The alternative policy response is to provide income support, that is, transfers to households. The final component of the policy response is to break the link between electricity and gas prices. Decoupling could be done through fundamental change and restructuring of the GB wholesale market. This is the focus of the UK Government's review of electricity market arrangements, with the expectation that such reforms will tackle other structural issues including security of supply, overall system costs and meeting decarbonisation targets over the longer term.

Another uncertainty for the economy is around wages and the extent to which new pay deals will offset a fall in living standards or will lead to a wage price spiral. As noted above, labour shortages are high and real earnings are falling. Nominal wage inflation has continued to increase, averaging around 6%, with a significant proportion indicating that they had given, or were considering giving, interim one-off payments to staff to help offset rising costs.

The diagram below sets out the same alternative scenarios for the economy, based on uncertainty over the two dimensions of inflation and unemployment, but focuses on the implications for wages. In the best case scenario, short term wage increases offset some of the fall in living standards. In the worst case scenario, pressure on wages is untenable for firms and ultimately leads to greater inequality. The scenario that will play out will depend on the extent to which nominal wages rise in response to inflation and the bargaining power of employees to negotiate higher wages. Box B presents modelling of an inflationary impact on the Scottish economy.

Potential scenarios for the economy: Wages



Box B: Modelling an Inflationary Impact on the Scottish Economy

Prices play an important role in the purchasing decisions of consumers and firms by affecting incentives to spend or save; to delay or accelerate future investment plans; and crucially by playing a key role in efficiently allocating scarce resources.

The current increase in inflation is being driven predominantly by the supply side of the economy due to increases in the price of energy and disruption to supply chains. Broadly speaking, these kinds of shocks result in the economy no longer being able to produce the same quantity of goods or services as it used to for the same price. In effect, services and goods become scarcer and hence prices increase to ration out these scarcer resources.

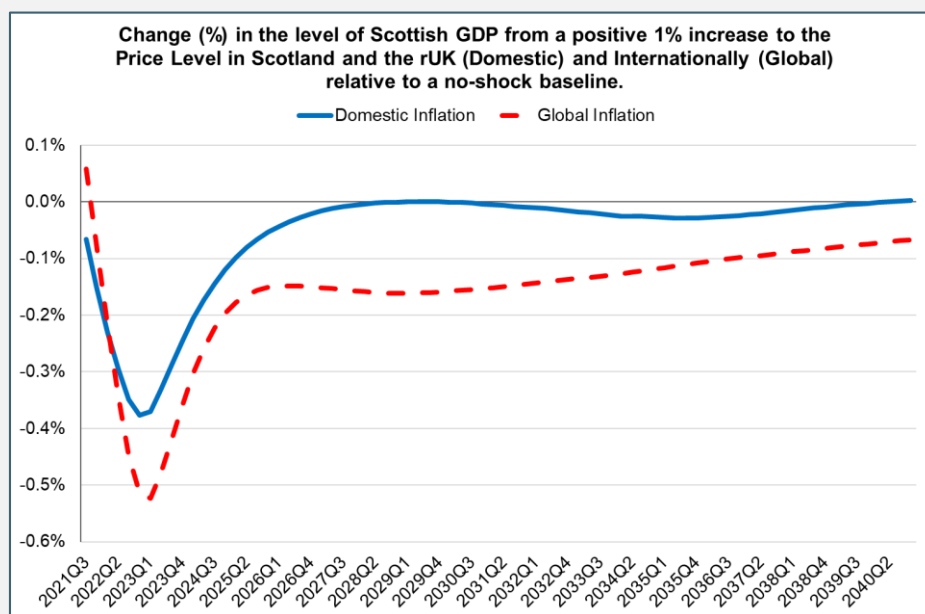
Generally, a small, stable, positive inflation rate is considered to be economically useful. However, periods of high inflation can impair the economy's long-term performance; as well as cause short-term transitory distortions which can often affect certain households disproportionately. For example, food, transport and energy prices are particularly sensitive to commodity price shocks and inflation can be relatively higher for poorer households who tend to spend more of their budgets on this type of expenditure. A recent study by the Institute for Fiscal Studies (IFS)¹⁷ noted that some households with the lowest incomes could experience an inflation rate around seven percentage points higher in October relative to households with the highest incomes.

¹⁷ [The long squeeze: rising inflation and the current government support package | Institute for Fiscal Studies \(ifs.org.uk\)](https://www.ifs.org.uk)

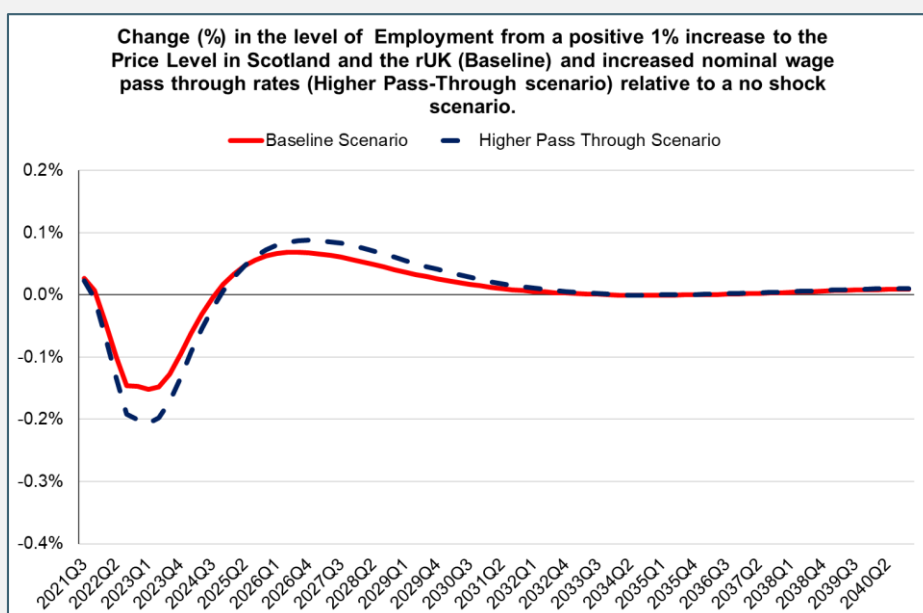
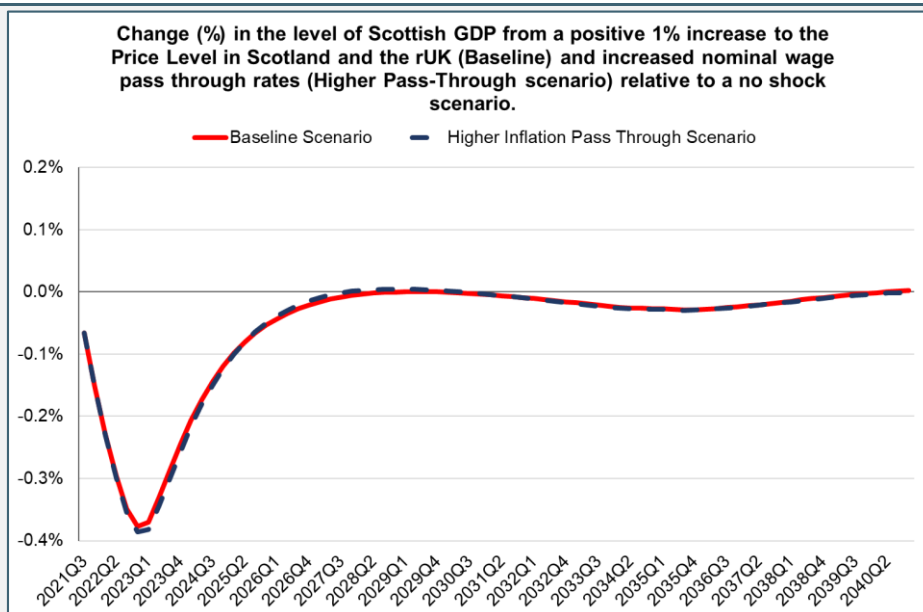
We use the Scottish Government General Equilibrium Model (SGGEM) to analyse the impact of a temporary period of higher inflation on the Scottish economy, focussing on the channels through which inflation affects the economy rather than trying to quantify the impact of the current level of inflation.

In general, the modelling shows that a temporary increase in the price level has a negative impact on the size of the economy. Although nominal wages rise in response to the inflation shock, they do not rise as quickly as prices, reducing real wages and aggregate private sector consumption at the same time as a reduction in private sector investment due to rising interest rates.

The current inflation shock is also being felt by our largest trading partners. Running a scenario where there is a global temporary inflation shock results in a bigger initial impact on the Scottish economy and a slower recovery. This largely reflects the fact that the global economy shrinks which results in lower international investment and trade compounding the negative shock to the domestic economy.



Another characteristic of the current crisis is that the economy currently has a relatively tight labour market, with high vacancies and low unemployment. As a result, most forecasters are not expecting an immediate substantial increase in unemployment in response to the shock. To examine the impact of this, we consider the sensitivity of the results to the degree of ‘pass through’ from inflation to nominal wage growth, which can be thought of as reflecting the bargaining power of employees to negotiate higher wages. Changing this assumption has a relatively marginal impact on GDP (first chart below) however, it has a more pronounced impact on the labour market (second chart below).

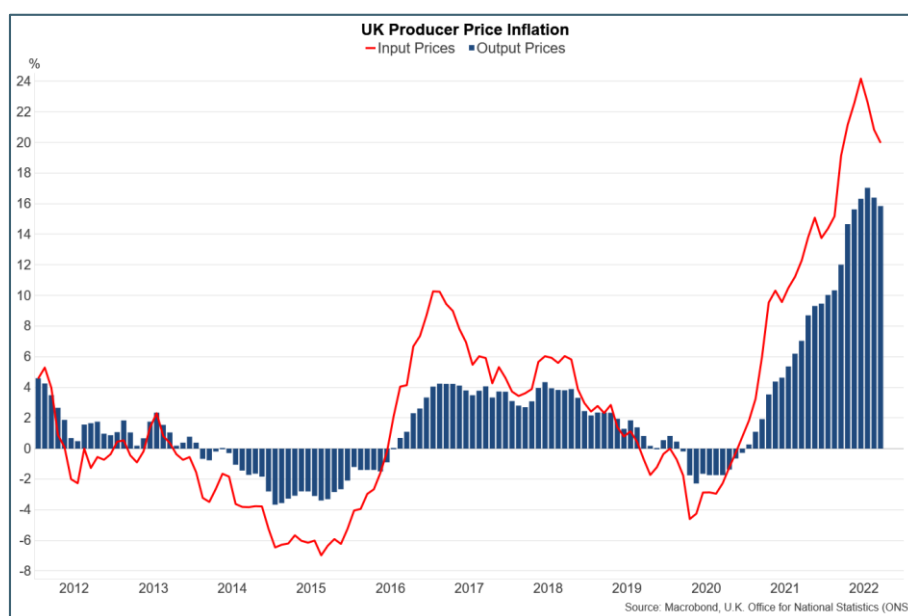


As can be seen, differences in the tightness of the labour market do not appear to have a big effect on how the size of the economy is affected by an inflationary shock. Rather, it has a larger impact on the labour market, through employment and wages. This highlights how the impacts of inflation could be unevenly felt, with those in stable employment and able to secure relatively larger pay increases potentially more resilient to the current inflationary challenges. This highlights the risks set out in the scenarios and in particular the risks to inequality from a worst case scenario of high inflation and high unemployment. A range of policies have already been announced to help households mitigate the impact of higher prices, and there is likely to be a continuing need for such intervention in the short to medium term, as the economy transitions to potentially permanently higher prices for essential commodities.

Impacts on Businesses

Rising inflationary pressures are causing a cost crisis for businesses as well as households. Business costs have risen significantly over the past year due to rising prices for energy and materials alongside rising labour costs. This has presented significant challenges for businesses and their operating models as they continue to recover from the pandemic and ensure the resilience of cash flow in the face of challenging demand conditions. Even with the energy price support in place, energy prices are significantly higher than last year and it is not clear what the long term response to prices will be nor what will happen when Government support ends. This section considers some of the implications for businesses.

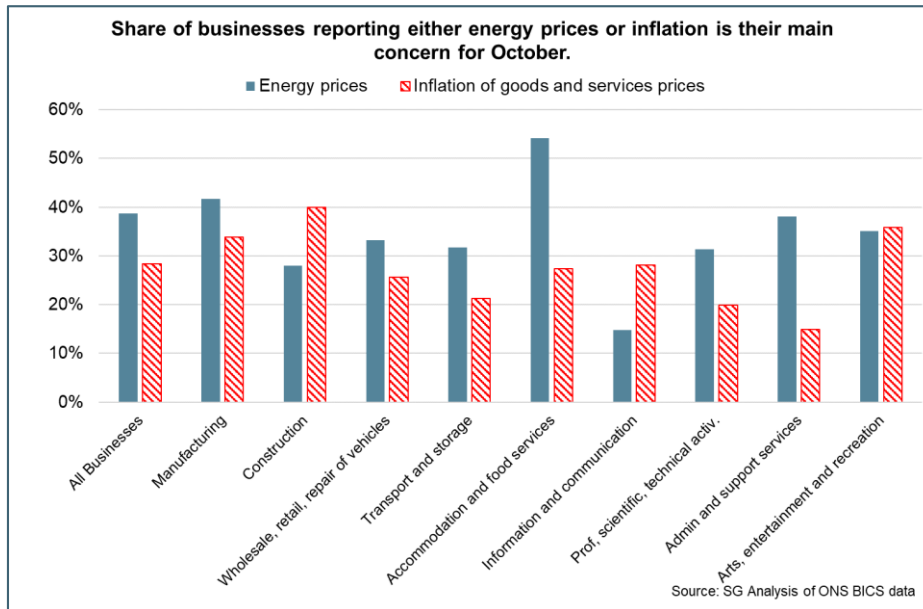
Producer input price inflation rose to a record high annual rate in June (24.1%) before easing back slightly over the third quarter to 20% in September.¹⁸



The rise in input prices has been broad based across product groups. Crude oil (54.2%) and fuel (48.6%) have had the largest increases reflecting the rise in energy prices driving cost pressures, however metals and non-metallic minerals provided the largest upward contribution to the annual rate of input price inflation in September. Business surveys indicate that the pace of input cost increases have eased slightly in recent months, however remain significantly elevated, and a key concern for businesses. The Business Insights and Conditions survey reported that the main concerns for businesses for October 2022 were energy prices (38.7%) and inflation of goods and services (28.4%).¹⁹

¹⁸ [Producer price inflation, UK - Office for National Statistics \(ons.gov.uk\)](https://ons.gov.uk/producer-price-inflation-uk)

¹⁹ [BICS weighted Scotland estimates: data to wave 66 - gov.scot \(www.gov.scot\)](https://www.gov.scot/bics-weighted-scotland-estimates-data-to-wave-66)



In addition to the direct costs of higher energy prices to businesses, they also face the risk of secondary impacts from those on households which may take the form of reduced demand, particularly in consumer facing sectors that depend on ‘discretionary’ spend, or in the form of higher wage claims.

Businesses have been responding to the increased energy costs by adjusting their output prices, absorbing costs through reduced profits, and seeking to make efficiency savings where possible. However, the extent to which sectors and businesses are more or less exposed to the rising costs of doing business depends in part on their energy intensity (see Box C).

Box C – Energy Intensive Sectors

There are different measures of energy intensity. ONS published detailed analysis of energy spending using a definition of energy intensity based on energy purchases as a share of total purchases.²⁰ Alternative definitions are consumption based. Both are presented below.

The table below shows energy intensity based on energy purchases as a share of total purchases by sector for businesses in Scotland. Transport and storage is the most energy intensive sector with 17.5% of all purchases spent on energy. Accommodation and food sector is also one of the most energy intensive with 7.2% of all purchases spent on energy. Other services, which includes personal service activities (e.g. hairdressing), also has a relative high energy intensity with 10.1% of all purchases spent on energy.

²⁰ [Business energy spending: experimental measures from the Office for National Statistics' business surveys - Office for National Statistics \(ons.gov.uk\)](https://www.ons.gov.uk/business/businessenergy/businessenergy/spending/businessenergy/spending)

Energy Intensity based on purchases by sector (Scotland)	No. of Units	Total Employment (000's)	Total Purchases of Goods and Services (£ million)	Purchases of goods bought for resale (£ millions)	Purchases of energy supplied for own consumption (£ millions)	Energy Intensity
Scotland	192,826	1,858	142,222	52,505	4,788	5.3%
Primary Industries	6,161	77	19,072	5,990	923	7.1%
Manufacturing	10,226	169	22,428	1,925	829	4.0%
Construction	21,818	132	12,169	407	256	2.2%
Wholesale, retail and repairs	35,197	345	49,154	39,796	570	6.1%
Transport and storage	7,558	106	7,544	1,080	1,133	17.5%
Accommodation and food service activities	17,595	210	3,412	459	213	7.2%
Information and communication	11,482	77	4,240	770	74	2.1%
Real estate activities	6,761	38	1,055	24	43	4.2%
Professional, Scientific and Technical Activities	33,602	184	10,364	1,266	229	2.5%
Administrative and support service activities	16,945	187	5,746	465	148	2.8%
Education, human health and social work activities	9,958	227	2,512	67	160	6.6%
Arts, entertainment and recreation	6,292	66	3,248	92	96	3.0%
Other service activities	9,231	41	1,279	165	113	10.1%

Note: Scotland Total excludes financial sector, parts of agriculture and the public sector.

Note: Energy Intensity = energy purchases / (all purchases - purchases bought for resale).

These findings are in line with the ONS analysis for the UK which found:

- The most energy intensive industry section was electricity, gas, steam and air conditioning supply, with 24% of the industry's total purchases of energy, materials, goods and services spent on energy.
- Transportation and storage was the second most energy intensive, with 21% of total purchases spent on energy.
- At the more detailed industry group level, the three most energy intensive groups in 2019 were sea and coastal freight water transport (38%), passenger air transport (36%) and freight transport by road and removal services (31%).
- The majority of businesses in residential care activities spent more than 10% of their total purchases on energy in 2019.

The ONS study also found that the smallest "micro" businesses with 0 to 9 employees were much more likely than larger businesses to have a very high energy intensity of more than 20% of total purchases being spent on energy in 2019.

The majority of businesses in electricity, gas, steam and air conditioning supply had low energy intensity, despite this being a very energy intensive industry on aggregate. This implies that a few large purchasers of energy are driving the aggregate result in this industry.

The next table below shows energy intensity based on consumption with energy use of more than 1 GWh/£ million GVA. Energy Intensive Industries tend to be sectors such as steel, chemicals, engineering and brick making industries where energy usage makes up a significant part of production costs. These sectors consume a higher proportion of energy and so are more exposed to energy price increases. It shows manufacturing and transport to be highly energy intensive in terms of consumption.

Ranking of Most Energy Intensive Industries based on Consumption		
Scotland: GWh/£ million GVA		
1	Mining and quarrying, excluding support activities	42.7
2	Manufacture of coke, refined petroleum and chemicals	22.2
3	Manufacture of other non-metallic mineral products	10.2
4	Fishing and aquaculture	6.6
5	Electricity, gas, steam and air conditioning supply	6.2
6	Water transport	5.4
7	Manufacture of paper products	4.7
8	Land transport	3.4
9	Agriculture and hunting	3.0
10	Manufacture of wood products, except furniture	1.9
11	Air transport	1.8
12	Manufacture of textiles	1.7
13	Waste Management and Remediation Activities	1.6
14	Manufacture of rubber and plastic products	1.5
15	Manufacture of food products	1.2
16	Manufacture of beverages and tobacco products	1.1
Note: Energy use of more than 1GWh/£ million, 2018 data		
Source: Air and energy accounts for Scotland (climatexchange.org.uk)		

Broader inflationary pressures, rising interest rates and a weak exchange rate increasing import costs risks are still set to place considerable new cost pressures on businesses, at a time when they are continuing to recover from the pandemic.

Conclusion

Economic conditions have weakened rapidly since the start of the year with inflation rising to its highest rate since the early 1980s, causing a cost and wellbeing crisis for households and businesses, giving rise to new economic risks and raising the prospect of recession.

The economic risks are already presenting themselves in the data with output growth slowing into the third quarter and consumer and business confidence weakening. Labour market conditions remain tight with low unemployment, however the rise in inflation is resulting in falls in median real incomes, while businesses continue to face rising cost pressures.

The outlook for the economy is particularly complex with the different factors impacting the economy and labour market, and the emerging fiscal and monetary responses to support businesses and households, and enable inflation to fall sustainably back towards its target rate.

The heightened scale of uncertainty and risk in the economy has most recently been reflected in significant market volatility. The full scale of the economic downturn is yet to emerge, however our scenarios work highlights that risks are increasingly weighed towards a more prolonged disruption to output and economic activity.



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