UK Economic Outlook

April 2022

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Our latest analysis of the UK economy focuses on how the war in Ukraine may impact the outlook for GDP growth, and the labour market, as well as intensify inflationary pressures on households and businesses in the short to medium term.

Key points

1

Earlier this year, the UK economy had confidently grown beyond its pre-pandemic size and most sectors of the economy were growing. As a reflection of this, the UK labour market was running hot, with the unemployment rate dropping below 4% and the Bank of England starting to raise its base rate back to levels experienced before the pandemic.

2

However, the impact of the war in Ukraine is expected to slow growth in the UK and other advanced economies. The war is first and foremost a human tragedy. But it is a significant shock to the global economy. Russia and Ukraine make up less than 2% of global GDP but are major exporters of key commodities, such as crude oil, natural gas, metals and agricultural products. Russia accounts for 10% of global oil production and 40% of Europe's natural gas imports.

3

The war in Ukraine is expected to affect the UK economy in three key ways. Firstly, through higher commodity prices and the disruption of supplies. Secondly, through financial contagion. And finally through the trade and investment channels. Of these three key impacts, we expect higher commodity prices will have the biggest effect on the UK economy. So far, the economic impact from the financial contagion and trade and investment channels appears to be contained and relatively small.

4

The UK growth/inflation outlook has deteriorated. Our outlook is based on two scenarios with different assumptions on how our reliance on Russian crude oil and natural gas will be resolved, along with more detailed assumptions on military performance and the nature of economic sanctions. Our first scenario, of contained conflict, assumes there are no further sanctions imposed on Russia. While our second scenario, of economic escalation, assumes further sanctions are imposed on Russia - leading to a dramatic restriction of crude oil and natural gas imports into the EU.

5

Depending on the scenario, we expect UK GDP growth to average between 2.8% - 3.8% this year, compared to a previous consensus GDP growth of 4.5%. The main driver of our revision is slower household consumption which is, in turn, driven by higher commodity prices – due to its inelastic demand, this acts like a tax hike on consumers (and businesses). Real earnings are already contracting in the UK and are expected to continue to do so until at least the end of this year.

6

In our contained conflict scenario, the war in Ukraine adds an extra one percentage point to our average annual inflation projection. The main driver of this is energy prices which could lead to the largest annual fall in household living standards since records began at the Office for National Statistics (ONS) in 1956-57. Inflation is only expected to return to target in early 2024, assuming the impact of the war fades, and supply bottlenecks ease. This would see the Bank of England miss its 2% target for the Consumer Prices Index (CPI) for almost three consecutive years.

7

In our economic escalation scenario (though unlikely at present), we project UK inflation to hit a 40 year high of around 11% in Q4 2022, with the energy price cap to increase by around 75%. As the majority of the change in the inflation outlook will be driven by energy prices, lower income households will be disproportionately impacted – potentially seeing their disposable income fall by as much as £1,600 in 2022/23. This will put continued pressure on the government to provide more support for those most affected.

1. Recent performance of the economy

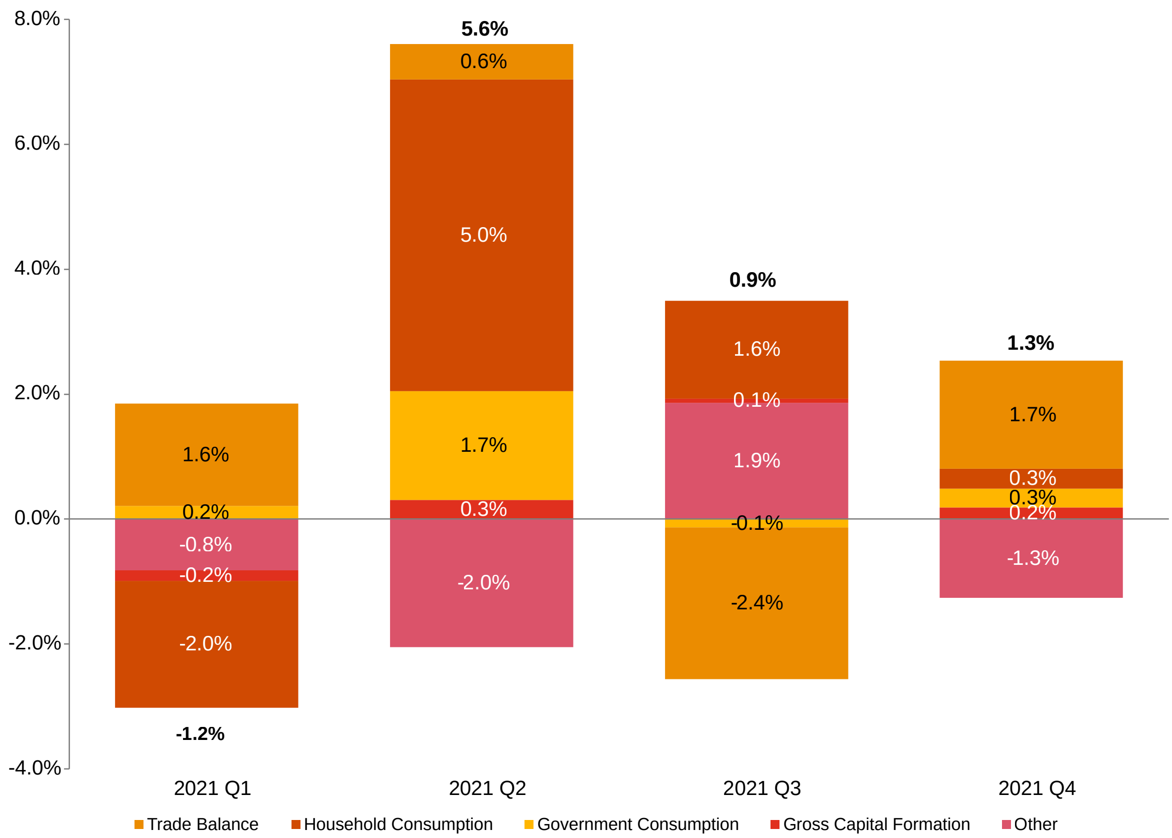
1.1. The UK economy has grown beyond pre-pandemic levels:

In January 2022, the UK economy hit a milestone by growing beyond its pre-pandemic size for the second time. The UK economic output in January was 0.8% bigger than its pre-pandemic level in February 2020.

In the last quarter of 2021, the UK economy grew at robust rates. UK GDP expanded by around 1.3% quarter-on-quarter in Q4 2021, particularly due to the stronger-than-expected performance in the services sector. The 1.5% quarter-on-quarter growth in services was mainly driven by transport and healthcare activities, thanks to a jump in deliveries of online shopping items during the festive period, and increases in the administration and support services from the likes of employment agencies and travel agents. Unlike the services sector, production output fell by 0.2% in Q4 2021 compared to the previous quarter, mainly due to a contraction in energy supply and extraction activities.

Broken down by expenditure components, UK GDP growth in the fourth quarter of last year was driven mainly by improvements in the trade balance. Compared to the previous quarter, UK net exports in Q4 2021 increased markedly by 4.9% quarter-on-quarter. However, over a longer period and relative to other advanced economies, the UK's net export performance is disappointing. The other driver of growth in the second quarter, that of household consumption, expanded by around 1.2% quarter-on-quarter, following two quarters of stronger recovery. Figure 1.1 highlights the contribution of each of the expenditure components of the national accounts to overall quarterly GDP growth.

Figure 1.1: Percentage contribution to quarter-on-quarter GDP growth by expenditure, Q1 2021 to Q4 2021



Sources: ONS, PwC analysis

The marked improvement in the UK's trade balance was the main contributor to the 1.3% quarter-on-quarter GDP growth at the end of last year. Quarter-on-quarter net exports jumped by 6.9% in Q4 2021, mostly due to an increase in the exports of goods such as fuels and chemicals. At the same time, total imports rose by 0.3% quarter-on-quarter, largely driven by a 1.1% rise in importing services such as sea transport, and other business services. This improved the trade deficit which fell from 2.8% of GDP in Q3 2021 to 1.0% of GDP in Q4 2021.

This is followed by household consumption, contributing 0.3 ppts to the GDP growth in Q4 2021. The 0.5% increase in quarter-on-quarter household consumption was driven by a jump in spending on transport, net tourism, clothing and footwear following the introduction of Plan B measures at the beginning of December. However, UK household expenditure remains 1.0% below the pre-pandemic levels.

The ongoing tightening in government expenditure saw a contribution of only 0.3 ppts to the overall output growth in Q4 2021. Spending was primarily driven by an increase in the NHS Test and Trace and COVID-19 vaccination efforts aimed at counteracting the threat of the Omicron variant, which caused quarter-on-quarter health consumption to rise by 4.6%.

Gross capital formation grew by 1.1% quarter-on-quarter in Q4 2021, contributing 0.2 ppts towards the total GDP growth. The 1.1% growth was driven by a marked increase of 33% in transport equipment investment compared to Q3 2021. Investment in dwellings also increased sharply in Q4 2021, rising by 4.7% quarter-on-quarter compared to a decrease of 0.1% in the previous quarter.

> "Quarter-on-quarter net exports jumped by 6.9% in Q4 2021."

Sharp improvement in trade was the main contributor to

1.3%

quarter-on-quarter GDP growth in Q4 2021.

Household consumption contributed about

0.3ppts

to the UK GDP growth.

Gross capital formation growth was driven by an increase of

4.7%

in investment in business dwellings.

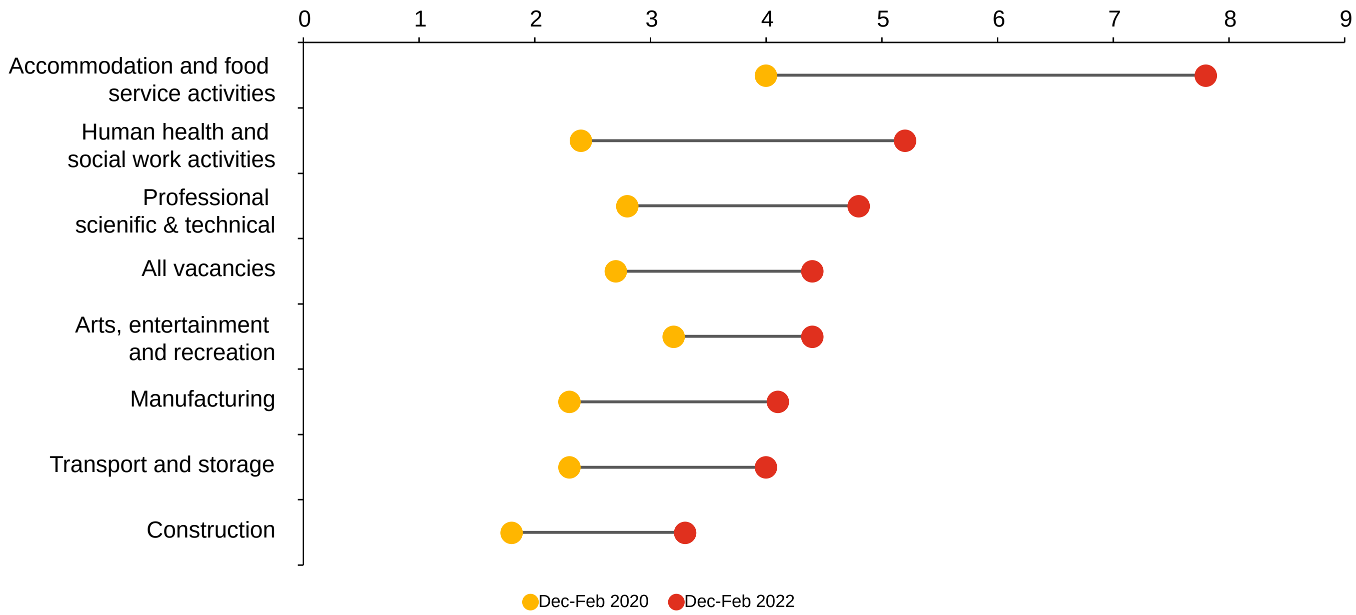
1.2. UK labour market: Running hot

Unemployment is at record low rates but employment is below pre-pandemic levels: The labour market continues to confound expectations. Recent ONS data shows the unemployment rate fell by 0.2 ppts to 3.9% for the three months to January 2022. This is a significant improvement from the 5.4% peak recorded during the pandemic and is consistent with most other advanced economies that are also experiencing very low unemployment rates compared to historical averages. However, the latest employment rate remains below pre-pandemic levels at around 75.5% which translates to around half a million less jobs.

The number of economically inactive people has risen: Despite record low unemployment rates, the economic inactivity rate remains 1.1 ppts higher than the pre-pandemic levels. At face value, this implies the workforce has potential to grow. However, a closer inspection suggests more than 90% of the increase is associated with workers above the age of 50, therefore closer to retirement age and potentially less likely to rejoin the workforce.

More than a million job vacancies remain and the vacancy to employee ratio has hit a high of 4.4 vacancies per 100 employee jobs. Latest ONS data shows the overall vacancy growth rate is slowing, growing by 8.7% in December 2021 to February 2022, compared to 17.2% in the previous three month period. However, the number of vacancies remains high. Unsurprisingly, the sectors most affected by the pandemic are the ones filling roles vacated during lockdown periods. For example, vacancies per 100 employee jobs are highest among accommodation and food services, and health and social work activities, with 7.6 and 5.2 vacancies per 100 employee jobs, respectively.

Figure 1.2: Number of vacancies per 100 employee jobs by sector, February 2020 to February 2022



Sources: PwC analysis, ONS

2. UK growth outlook: Scenarios for the future

Despite the recovery of the economy from the pandemic and the Government's move to a 'Living with COVID' plan, the impact of the war in Ukraine is expected to slow growth in the UK and other advanced economies. In this Section, we discuss the main channels via which the ongoing war and the sanctions imposed on the Russian economy will affect UK economic performance. We also present a scenario analysis for the UK economic outlook.

2.1 Main impacts of the war in Ukraine on the UK economy and businesses

The UK, alongside the rest of the G7, the EU and other advanced economies, responded to Russia's invasion of Ukraine by imposing a suite of sanctions against the Russian economy (and to a lesser extent Belarus) targeting its institutional, financial, energy, military-industrial sectors. Russia is now the world's most sanctioned economy.

Some of the measures adopted include the sanction on Russia's central bank and its wider financial sectors, which is restricting, or preventing, most Russian financial institutions from accessing international markets or payment systems, such as SWIFT.[1] Some Russian businesses and assets have also been targeted with their ability to conduct capital raising activities in the leading markets of the world prohibited.

In addition, the EU, US and UK among other countries have announced various restrictions on Russia's trade with the rest of the world by preventing exports of key technologies, goods, spare parts and more, from the large advanced economies to Russia. A wide-range of Western businesses across most sectors have also suspended their operations in Russia.

The war in Ukraine is likely to have three main impacts on the UK economy. While our analysis is predominantly focused on the UK, this approach is broadly applicable for most advanced economies.

- **Higher energy and commodity prices and disruption of supply:** For the UK and most other advanced economies, the energy and commodities industries are likely to suffer the biggest impact in economic activity. Russia accounts for around 10% of global oil production, and around 40% of Europe's natural gas imports. Russia and Ukraine are also key producers of commodities needed for car batteries, food and fertilisers. We expect the potential impacts will be concentrated around higher food and energy prices leading to higher inflation in the UK and rest of the world. Also, cost pressures are likely to build up for industries reliant on Russian commodities.
- **Financial contagion:** Higher degree of uncertainty around the political outlook can see financial markets volatile and unpredictable. In practical terms, this leads to higher risk premiums, debt yields and potential slower credit growth. Also, focusing on the exposure of Western banks to Russian assets, most have reduced their exposure to Russia since the 2014 annexation of Crimea. However, there is likely to be a relatively high concentration of financial risk in specific European banks with exposure to the Russian economy.
- **Lower trade and investment flows:** Russia and Ukraine only account for around 1.9% of global GDP so the direct impact through trade and investment is expected to be small.

> "Russia accounts for around 10% of global oil production, and around 40% of Europe's natural gas imports."

1) SWIFT stands for The Society for Worldwide Interbank Financial Telecommunication, is a Belgian cooperative society providing services related to the execution of financial transactions and payments between banks worldwide.

We provide further detail on these three points in the sections below, as well as further discussion on the future scenarios on which we base our projections. We also consider the impact on the energy and commodities industries in the inflation outlook in the next section.

There are other potential impacts, including confidence effects, labour market impacts from Ukrainian refugees, and the impact of government spending on defence and resilience. However, at this stage, we expect these to have a smaller impact on the economy.

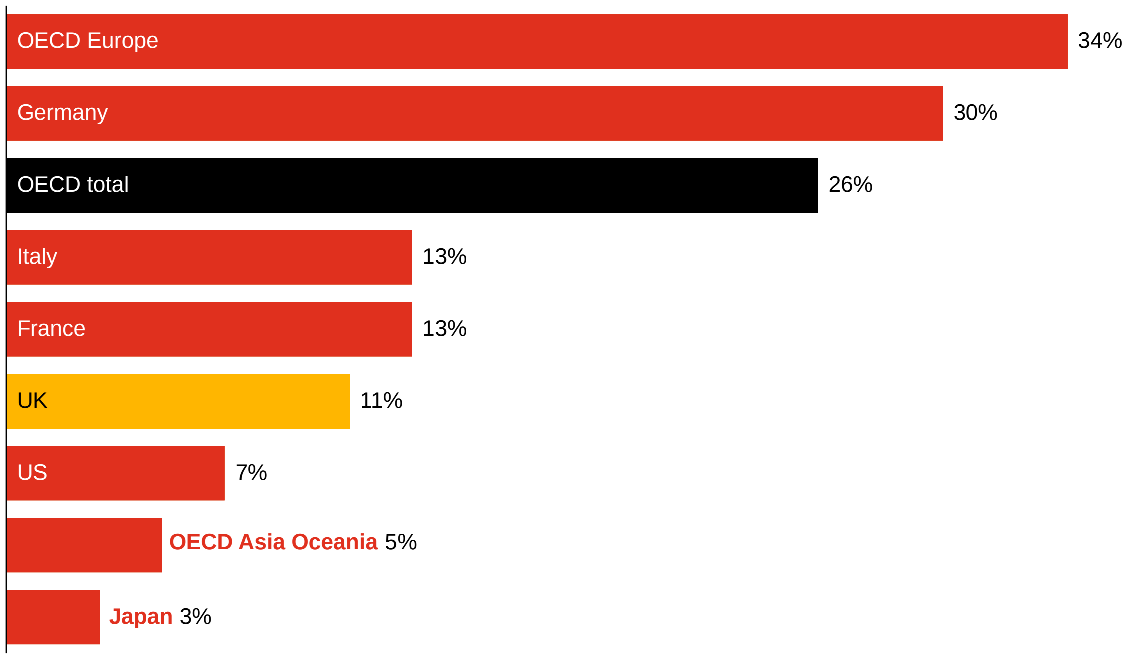
2.2. Overview of the impacts on the commodities and energy markets

Russia and Ukraine are major exporters of key commodities, such as crude oil (**see Figure 2.1**), natural gas, food, chemicals and metals.

Concerns over the current and future supply of these commodities, coupled with uncertainty around future economic sanctions has already been reflected in market prices. Where possible, businesses have started to reorient their supply chains.

The price of oil has shot up since the invasion, reflecting higher risk and uncertainty around future supply. As Figure 2.2 shows, oil prices have increased by around 10%-20% since the invasion, rising from US$95/bbl to around US$120/bbl as of the last week of March. However, prices remain highly volatile. Around 11% of UK crude oil imports in 2020 came from Russia. Meanwhile, around one third of UK road diesel imports originate from Russia – which could have additional ramifications for specific sectors of the UK economy reliant on this type of fuel (such as logistical network, construction and agriculture).

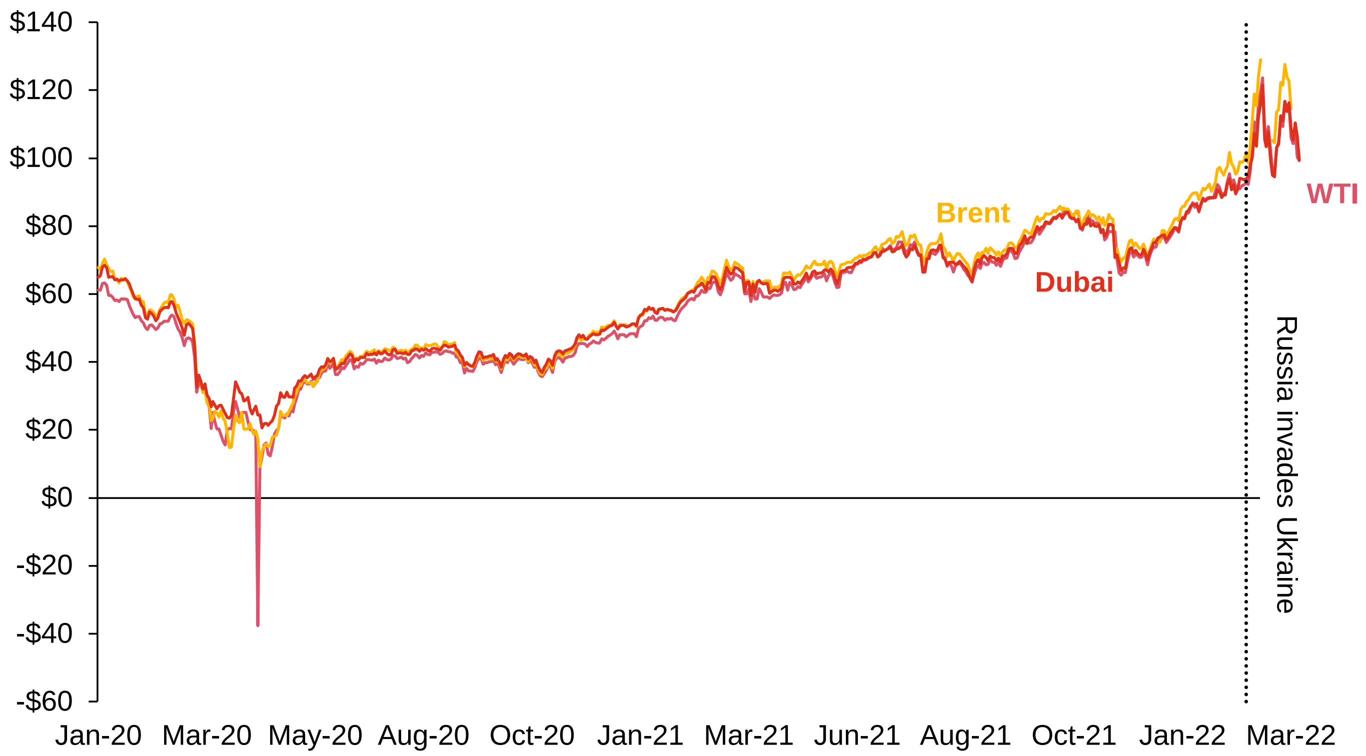
Figure 2.1: Imports of oil from Russia (% of total), by OECD country



Sources: PwC analysis, OECD

> "Only around 11% of UK crude oil imports in 2020 came from Russia."

Figure 2.2: Crude oil spot prices ($/bbl), daily, by type



Source: Refinitiv Eikon

Wholesale natural gas prices have increased significantly since the invasion. Wholesale UK natural gas prices for the day ahead increased from a pre-invasion rate of around 170p/therm to around 220p/therm at the end of March, much higher than the 56p/therm in July last year. UK natural gas prices peaked early to mid-March at around the 520p/therm mark. However, this was not immediately felt in UK households due to the temporary protection provided by the energy price cap.[2]

Europe is significantly more reliant on Russian natural gas than the UK (see Figure 2.3): Russia supplies around 40% of the EU's natural gas consumption. For example, the most recent data available shows Germany, the largest economy in the Eurozone, imported 65% of its natural gas imports from Russia in 2020. Numerous smaller, typically Eastern European countries, such as Latvia, Moldova and Czech Republic, purchased all of their natural gas imports from Russia in 2020.

With around 4% of natural gas imports from Russia, the UK is less reliant on Russian natural gas compared to the rest of Europe. However, there is a high degree of correlation between UK and European natural gas prices. For example, the UK's natural gas spot prices, commonly referred to as the National Balancing Point (NBP), is extensively used as an indicator of price for Europe's wholesale gas market alongside other metrics including the younger but quickly expanding continental European trading centres such as the Dutch Title Transfer Facility (TTF). So despite the UK not relying directly on Russian natural gas imports, European natural gas prices have ramifications on UK natural gas prices and vice versa.

2) From 1 April 2022, rise in OFGEM's price cap would see a typical UK household energy bills increasing by 54%, but the impact of further increase in natural gas prices will not be felt at least for most of this year as the energy price cap is next revised in October 2022.

Besides energy, Russia and Ukraine are also key suppliers of agricultural and food products to the global market. Both countries are agricultural powerhouses and account for a significant proportion of global exports for products ranging from sunflower oil (with a combined global export share of 78%), barley (30% global export share), wheat (28% global export share) and corn (18% global export share).

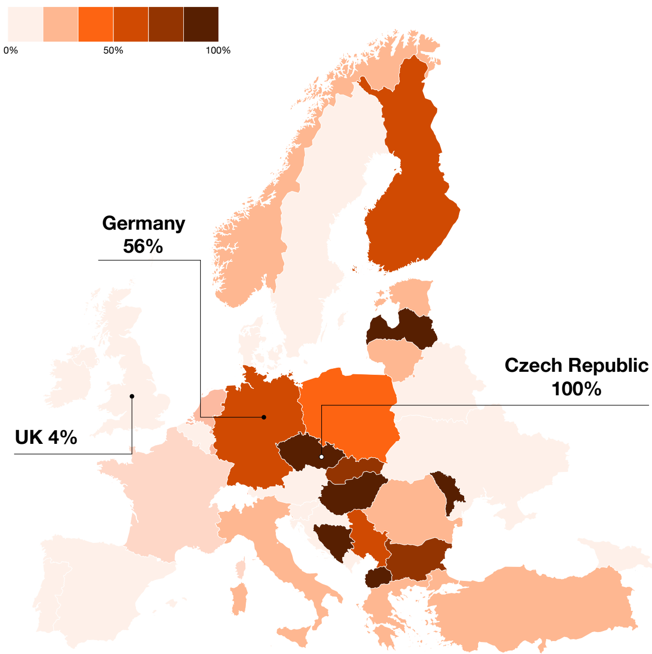
Russia is also a key global supplier of the key raw materials required to make the most-widely available NPK type fertilisers. Therefore, the war has delayed or disrupted the supply of these products to global markets, already leading to higher global food prices. For example, according to the latest data from the Food Agricultural Organization's (FAO) Food Price Index international food prices have risen by around 21% in US Dollar terms.

The impact through the financial contagion channel remains relatively limited to-date. Since the annexation of Crimea by Russia in 2014, most European countries have reduced their financial exposure to Russia. According to recent data, the combined direct exposure of foreign banks to both Russia and Ukraine amounts to $135bn, just 0.4% of average total assets owned by foreign banks.[3] This has therefore insulated most financial systems of the Western world.

Austria and Italy may face greater relative risks as the exposure of their banking systems to Russian and Ukrainian assets is in the region of around 4.5% and 2.5% of their total banking assets respectively. Some banks are being effectively wound down in Austria and Cyprus as a direct consequence of the exposure to Russia. Closer to home, the UK banking sector's exposure to Russian and Ukrainian assets is in the region of around 0.1% of total assets and lower than the Western world's average of 0.4%.

To date, we have seen limited evidence of financial contagion across the UK and Europe.

Figure 2.3: Imports of gas from Russia (% of total imported natural gas)



Sources: PwC analysis, Eurostat

The non-commodity sector of the Russian economy is not well-integrated into the rest of the global economy. Russia has around 10 trade deals with other countries, mostly with the Commonwealth of Independent States (CIS) economies, and it heads up its own customs union with Belarus, Kazakhstan and Armenia. However, Russia is not a big importer when compared to other economies and has maintained a current account surplus since 1998. For example, UK exports to Russia only account for 0.2% of the UK GDP. Therefore, lower external demand from Russia is unlikely to lead to a material impact through the trade channel.

> "UK exports to Russia only account for 0.2% of the UK GDP."

3) Sources: BIS, PwC analysis

2.3 Scenarios for the future

The war in Ukraine has led to uncertainty around the UK economic growth outlook. At times like these, we recommend our clients use scenario analysis to better understand the economic outlook and to carry out contingency planning based on these outcomes. In this section of the report we discuss two economic scenarios based on specific assumptions and the estimated impact on UK growth.

To reflect the range of likely outcomes subject to differing assumptions we designed two economic scenarios outlined below:

- **Contained conflict** scenario, in which the EU and NATO[4] continue to provide indirect military assistance to Ukraine, and where there is no limited further escalation of the current sanctions imposed on Russia.
- **Economic escalation** scenario, in which the EU and NATO continue to provide indirect military assistance to Ukraine but where the economic sanctions are intensified significantly or Russian restrictions result in the US and the EU substantially reducing or even stopping imports of Russian natural gas and crude oil. This scenario is at present unlikely with, for example, German Chancellor Scholz so far rejecting calls for curtailing imports of Russian natural gas.

We outline some of the more detailed assumptions in **Table 2.1**.

Table 2.1: Assumptions underlying the economic scenarios for the UK economy

Assumption	Contained conflict scenario	Economic escalation scenario
Military	• EU and NATO countries continue to provide indirect military assistance to Ukraine, but NATO is not directly drawn into the conflict • All NATO countries pledge to meet the 2% guideline of defence spending by the end of the 2022/early 2023. Some countries go beyond that level. • Russian military advance stalls.	• EU and NATO countries continue to provide indirect military assistance to Ukraine, but NATO is not directly drawn into the conflict • All NATO countries pledge to meet the 2% guideline of defence spending by the end of the 2022/early 2023. Some countries go beyond that level. • Russian military advance continues.
Economy	• Current sanctions imposed on Russia remain in place and no further sanctions are imposed.	• All Russian banks are cut off from SWIFT (including energy transactions). • Russia is revoked from the World Trade Organisation. • The G7 and the EU offer visas to qualified Russians to work in the West, accelerating the outflow of talent 'brain drain'. • Other countries, such as India, the UAE and Turkey, also impose economic sanctions on Russia and its financial system. China continues to remain neutral.
Crude oil and natural gas	• There are no substantial restrictions to the export of Russian oil and natural gas to the rest of the world. • The EU designs and implements a set of economic incentives, such as price controls, subsidies, tax cuts and funding, to reduce dependence on Russia energy imports.	• The US and EU stop importing Russian oil and the vast majority of natural gas. Some of this demand is replenished by Saudi Arabia, the US, Qatar, and Azerbaijan. • Additional LNG shipments could make up 15% of the shortfall. • Natural gas price rises result in a 40% October price cap rise. • Natural gas fracking expands in the US. The UK and most EU countries temporarily suspend current policies against fossil fuel power generation. • The EU accelerates a set of economic incentives, such as price controls, subsidies, tax cuts and funding, to reduce dependence on Russia energy imports.

4) NATO stands for The North Atlantic Treaty Organisation, also called the North Atlantic Alliance, is an intergovernmental military alliance between 30 member states, 28 of which are in Europe and the other two being part of North America.

2.4 Scenario based UK GDP projections

Table 2.2: Projected annual average real UK GDP growth, by scenario

Annual average real UK GDP growth	2022	2023	2024
Contained conflict scenario	3.8%	1.9%	1.8%
Economic escalation scenario	2.8%	1.0%	0.9%

Source: PwC analysis

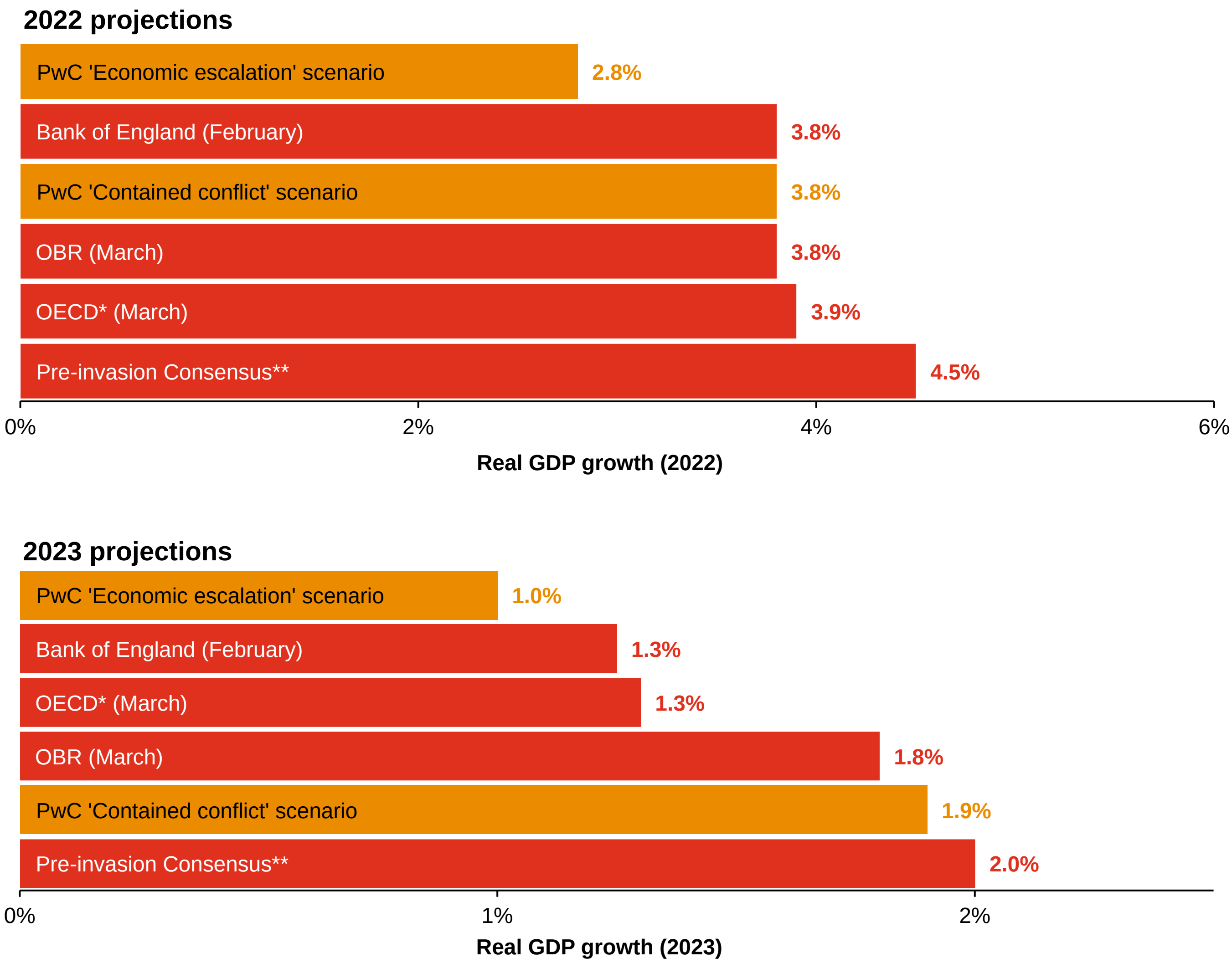
Based on our analysis (Table 2.2), we expect UK GDP to grow by between 2.8% and 3.8% in 2022, down from a pre-invasion consensus of 4.5%. The downward revision reflects slower household consumption on the back of higher inflationary pressures which is the main impact of the war in Ukraine to the UK economy. This would also see industries reliant on internationally traded commodities imported from Russia (such as crude oil and natural gas) and Ukraine (such as car batteries and agricultural goods) disproportionately affected. Energy-intensive industries are likely to be affected as well. In the economic escalation scenario, the impact on GDP is not solely through higher commodity pricing, but also through rationing of energy, particularly natural gas, requiring certain segments of the economy to reduce output (such as large industrials).

Headline GDP growth this year is still somewhat driven by base effects. Our growth projections for 2022 continue to be skewed by the fact the economy is coming off a low base due to the restrictions in economic activity in early 2021. Therefore, core underlying growth will continue to be relatively modest albeit slower than we anticipated earlier in the year.

We expect GDP growth to slow in 2023 and 2024 as the economy returns to its long term trend. By the end of 2023, the UK economy is likely to be roughly 1.4% to 3.5% above the pre-pandemic levels. The pace of economic growth in the next two years is projected to be relatively slow as base effects fall out of the annual figures. Under our two scenarios, we expect growth to range between 1.0% and 1.9% in 2023, and between 0.9% and 1.8% in 2024.

Our projections are broadly in line with other third-party projections (see Figure 2.4). Some early predictions, for example the Bank of England's and HM Treasury's comparison of independent forecasts, were published before the invasion of Ukraine began on 24 February. Therefore, their figures are likely to be revised down to reflect the uncertainties caused by the war.

Figure 2.4: Comparison of GDP growth projections, 2022 and 2023



Sources: PwC, Bank of England,, Office for Budget Responsibility (OBR) , OECD, HMT

Note: (*): OECD (March 2022) interim figures are the OECD (December 2021) forecasts adjusted for the impact of the war in Ukraine on the UK's gross output (shown in the OECD March 2022 interim report), which assumes a 20% reduction of direct and indirect imported energy inputs from fossil fuels, refined fuel products and electricity and gas supply. The calculations use input-output tables for 2018.

(**): HMT comparison of independent forecasts (February 2022) – average of new forecasts made in the previous month.

Below we outline some opportunities and challenges for both businesses and households presented by the revised growth outlook.

Opportunities:

- **Business investment:** As businesses continue to build resilience in their supply chains and start to shift key parts of their operations from 'just in time' to 'just in case', business investment could be an area for opportunities. This could be further supported by three other factors. Firstly, continued low unemployment rates which mean businesses need to invest more in capital. Secondly, relatively low cost of capital. And thirdly, the continued super-deduction to business investment which is likely to be replaced by a capital allowance system later on.

- **Sectors hit hard from COVID-19 bouncing back:** ONS data shows significant sectors of the UK economy, including accommodation and food services, education, arts, entertainment and recreation are still operating below pre-pandemic levels. These sectors were hit hard as they require face-to-face interaction with consumers. As the government removes all remaining COVID-19 restrictions we could see these sectors fully return to normality and pre-pandemic levels of output.

Challenges:

- **High inflation environment cuts back household spending:** As UK households enter a high inflationary environment, coupled with a significant real earnings squeeze, we have downgraded our projections for household consumption. Household consumption is typically the largest driver of economic growth in the UK and with the saving ratio buffer gradually being depleted – with the Q4 2021 savings ratio at a rate of around 6.8% compared to a pre-pandemic average of around 4.5% – there is relatively little buffer for households to maintain growing their spending patterns.

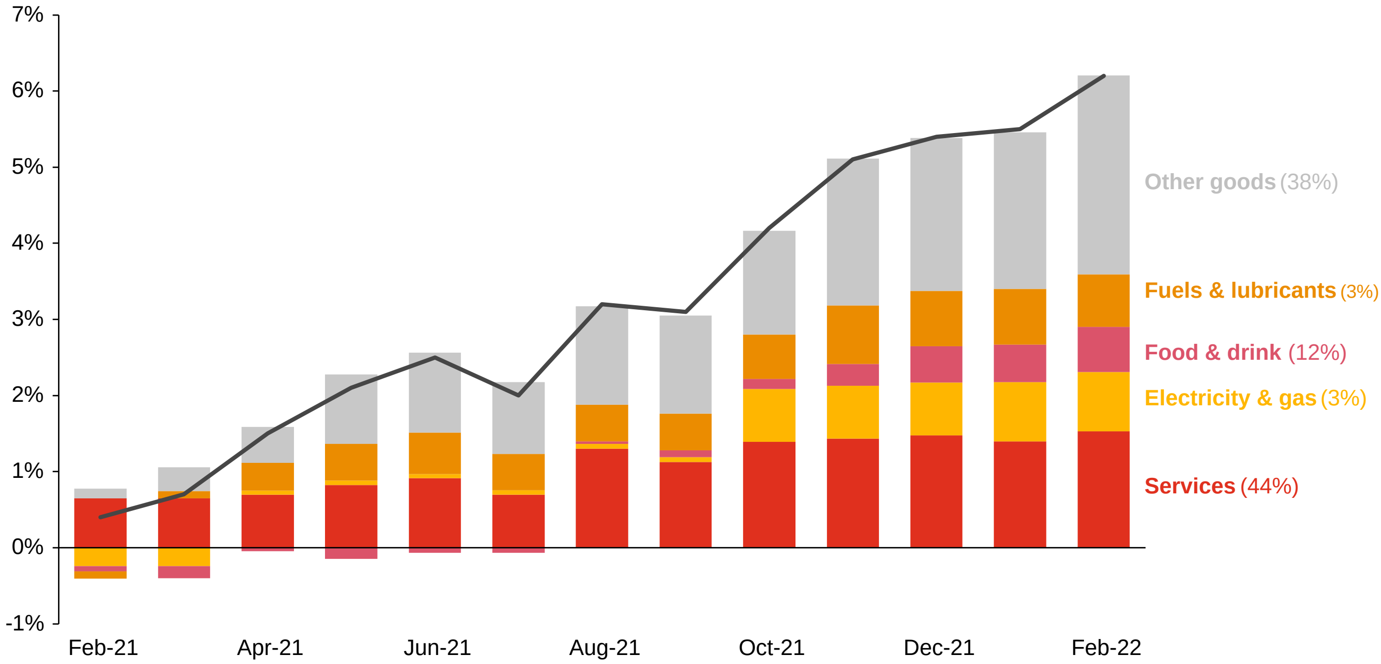
- **Taxes on workers and businesses are expected to continue to rise.** Specifically, the rate of corporate profit tax is expected to increase from 19% to 25% from April next year. In addition, the 1.25 ppt increase in National Insurance (NI) in April 2022, both on employers and employees, and other tax rises will probably weaken economic activity posing a drag on economic growth.

- **Global supply chain disruptions continue:** The recent lockdowns in large urban manufacturing centres in China (including parts of Shenzhen and Shanghai) could also exacerbate the supply chain issues in some of the Western economies during 2022. Prolonged trade uncertainty, worsened by the war in Ukraine and rising shipping costs are expected to be a key risk to the UK economic growth in the medium term.

3. UK inflation outlook: Higher for longer

Inflation reaches new heights but the worst is yet to come. CPI inflation surged to a three decade high of 6.2% in February, more than four percentage points above the Bank of England's 2% target inflation rate (see Figure 3.1). Around half of the contribution to the headline inflation was driven by fuel, food and electricity prices. In the next few months, households and businesses will need to brace for further price increases, as the war in Ukraine adds to existing inflationary pressures. We expect inflation to average 7.4% in 2022, with a peak of around 8.4% in Q2. We discuss our projections in more detail below.

Figure 3.1: CPI inflation, year-on-year, by component



Sources: ONS, PwC analysis

Inflation outlook: War in Ukraine intensifies inflationary pressures

In our last UK Economic Outlook December 2021, we set out our view that rising energy prices – alongside other domestic and global price pressures – would see inflation reach a three-decade high of around 7% in the first half of 2022. Since then, the Russian invasion of Ukraine has seen natural gas prices increase significantly, and crude oil prices increase by around a third – in just over a week after the invasion started. Prices for these commodities have come down since then but remain significantly above levels seen before the war began.

Despite efforts to decarbonise, the UK economy remains significantly reliant on natural gas and crude oil to meet its energy needs. As a result, we expect that higher energy prices will add significantly to inflationary pressures in the UK. In turn, we could see the greatest fall in real wages since the 1970s, and the biggest fall in living standards since ONS records began in 1956-57 – creating a cost-of-living crisis for households across the UK. As a result, PwC's Consumer Sentiment Index has recorded the biggest sustained fall since the financial crisis of 2008, reaching the levels last seen during the first UK lockdown.

However, there is still significant uncertainty around the inflation outlook. It is unclear the extent to which domestic and global price pressures, which existed even before the invasion of Ukraine, will persist. We therefore use our scenario narrative from the previous section and outline the key assumptions used to develop our inflation projections summarised below.

Table 3.1. Inflation projection scenario assumptions

Assumption	Contained conflict scenario	Economic escalation scenario
Winter 22 energy price cap	**£2.7k** (36% rise from Summer 22 cap)	**£3.5k** (75% rise from Summer 22 cap)
Brent crude oil prices (monthly)	Peak at current level of **$116** a barrel (20% rise from Feb-22 levels)	Peak at **$150** a barrel (55% rise from Feb-22 levels)
Global food prices	**10%** rise from Feb-22 levels	**40%** rise from Feb-22 levels

In both scenarios we assume that:

- Global supply bottlenecks gradually ease over 2022 and return to pre-pandemic levels by 2023.
- Marginally higher nominal wage growth compared to pre-pandemic growth rates – around 4% per annum compared to around 3% per annum historically, due to labour market tightness.
- Higher inflation does not become embedded in consumer expectations as reflected in longer-term consumer survey based measures.

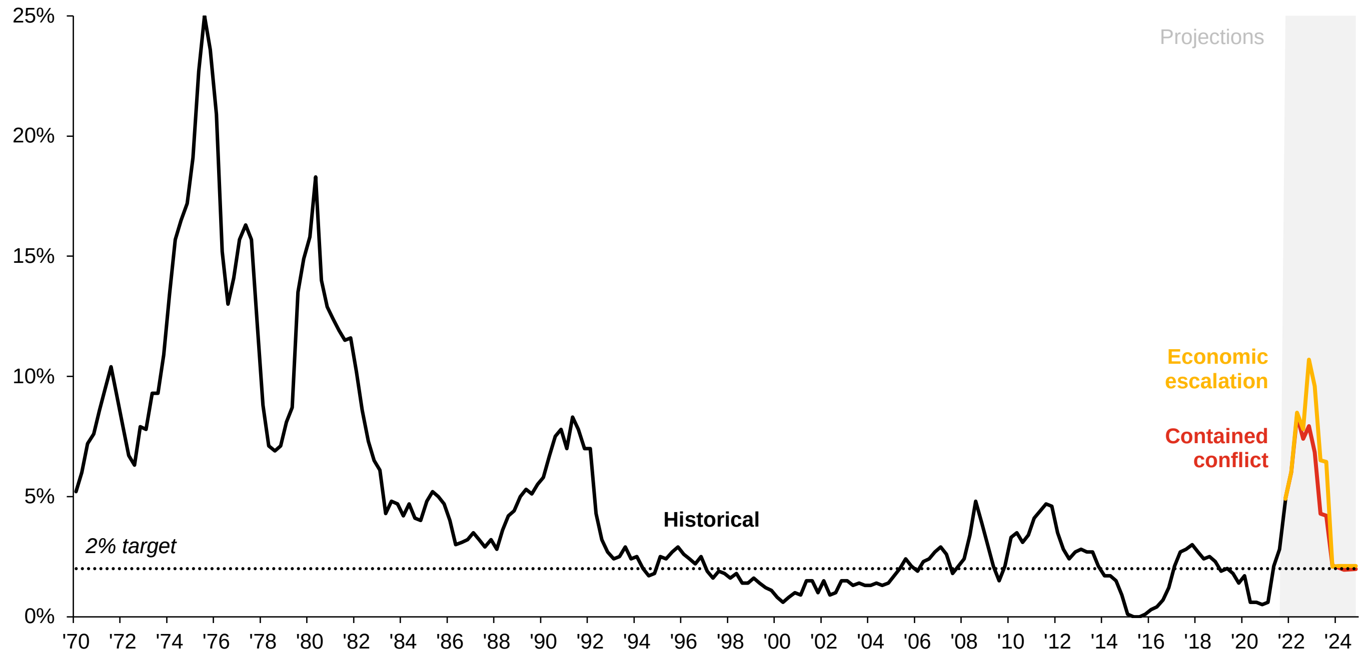
Scenario based Inflation projections

Table 3.2: Projected annual average UK CPI inflation rate

Annual average UK CPI inflation rate	2022	2023	2024
Contained conflict scenario	7.4%	4.4%	2.0%
Economic escalation scenario	8.3%	6.2%	2.1%

Source: PwC analysis

Figure 3.2: CPI inflation, year-on-year, 1970 Q1 to 2024 Q4

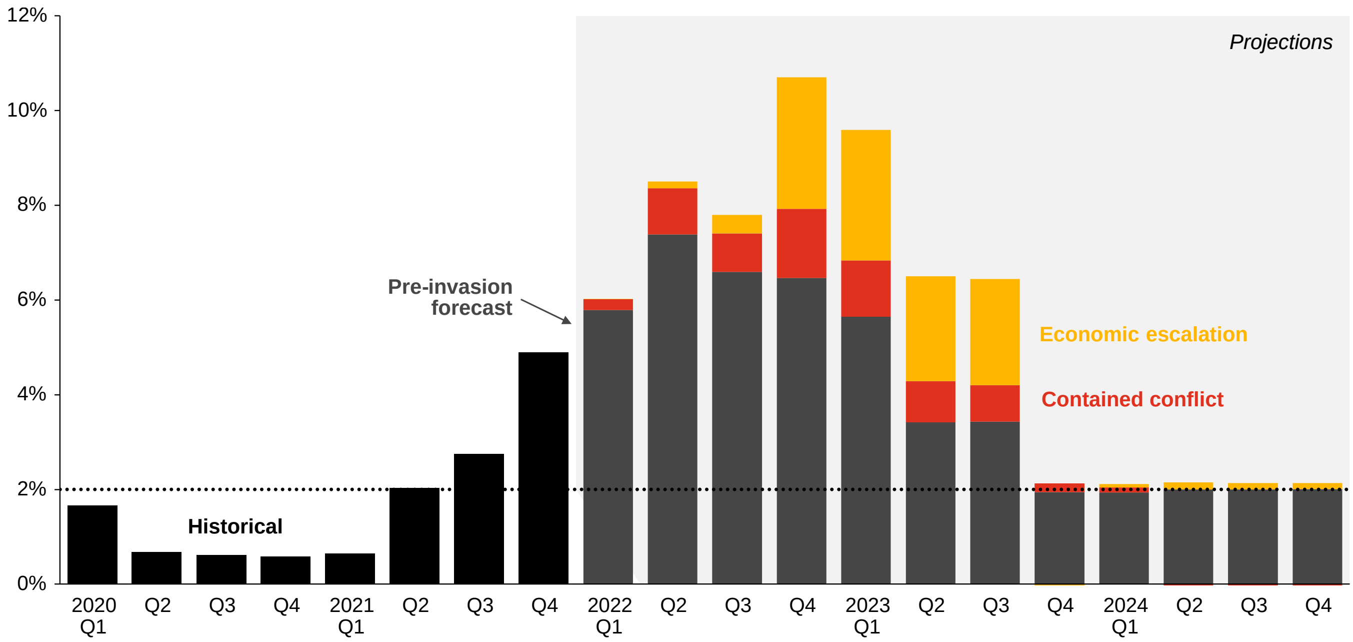


Sources: ONS, PwC analysis

In the contained conflict scenario inflation could peak at 8% in Q2 2022, as the war in Ukraine adds around 1 percentage point to 2022 CPI (see Figure 3.2). It is rare for inflation to reach such heights – the most recent occasion being in the early 1990s, and before that the early 1980s. As Figure 3.3 shows, inflation is only expected to return to target in early 2024, assuming the impact of the war fades, and supply bottlenecks have eased. This would see the Bank of England miss its 2% target for CPI for almost three consecutive years.

Energy prices are expected to continue to drive headline inflation rates. The energy price cap is due to rise by 54% in April and our in-house model suggests it could rise by at least a further third in October. As a result, by the end of this year household energy bills could be almost twice as high as last year. Meanwhile, petrol and diesel prices could surge to 165 pence per litre at the end of this year, up from around 130 pence per litre before the pandemic. Combined, energy and fuel prices are expected to account for around a quarter of the peak inflation rate.

Figure 3.3: CPI inflation (year-on-year), 2020 Q1 to 2024 Q4



Sources: ONS, PwC analysis

The economic escalation scenario could lead headline inflation reaching double digits (see Figure 3.3). If the EU joins the US in banning imports of both Russian natural gas and crude oil (the UK is currently only committed to phasing out oil imports), then global price pressures on energy-related commodities would increase significantly. We expect this could lead to inflation peaking at a 40 year high of around 11% in Q4 2022.

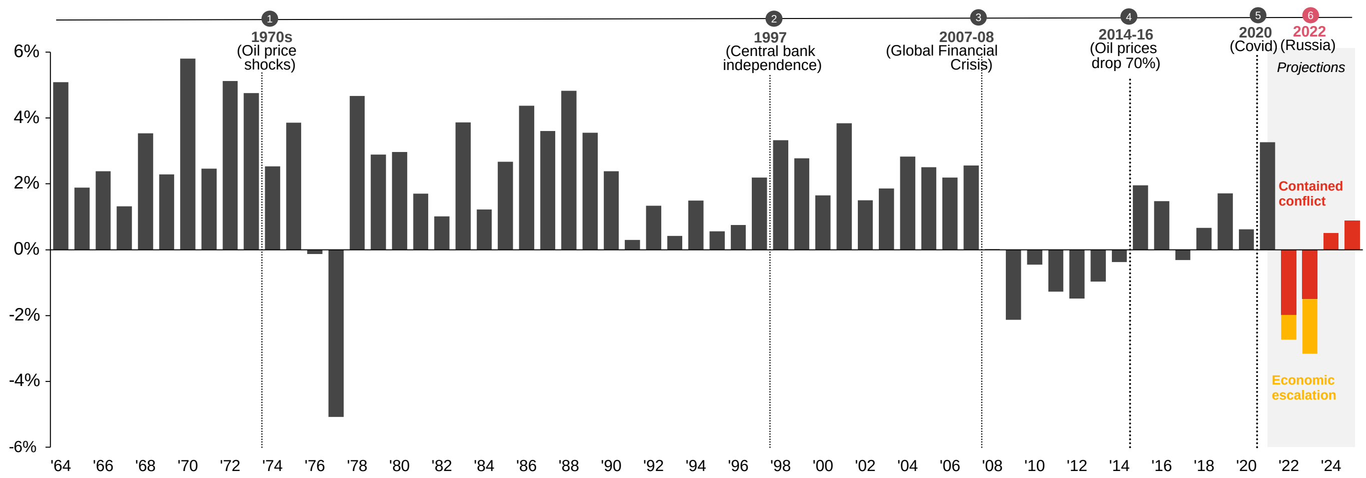
Real wages could fall by around 2% in 2022, as nominal pay rises are unable to keep up with surging inflation rates (see Figure 3.4). This would be the largest annual fall in real wages since the oil price shock in 1977. We expect rising prices could see the average UK household paying an extra £2,500 in 2022/23 for the same goods and services bought in 2021/22. Nominal pay is also expected to rise, but not by enough to fully compensate workers for the sharp price rises to goods and services.

This could leave the average UK household around £900 worse off this year, with low-income households hit the hardest (Figure 3.5). Lower-income households are more affected by food and energy price rises, as they spend a higher share of their income on necessities. As these two components are expected to see large price increases over the next year, our analysis suggests the lowest earners could see their incomes fall by as much as £1,300, while the incomes of the highest earners would remain relatively constant. As a result, an additional two million households could be pushed into fuel poverty.[5]

> “This would be the largest annual fall in real wages since the oil price shock in 1977.”

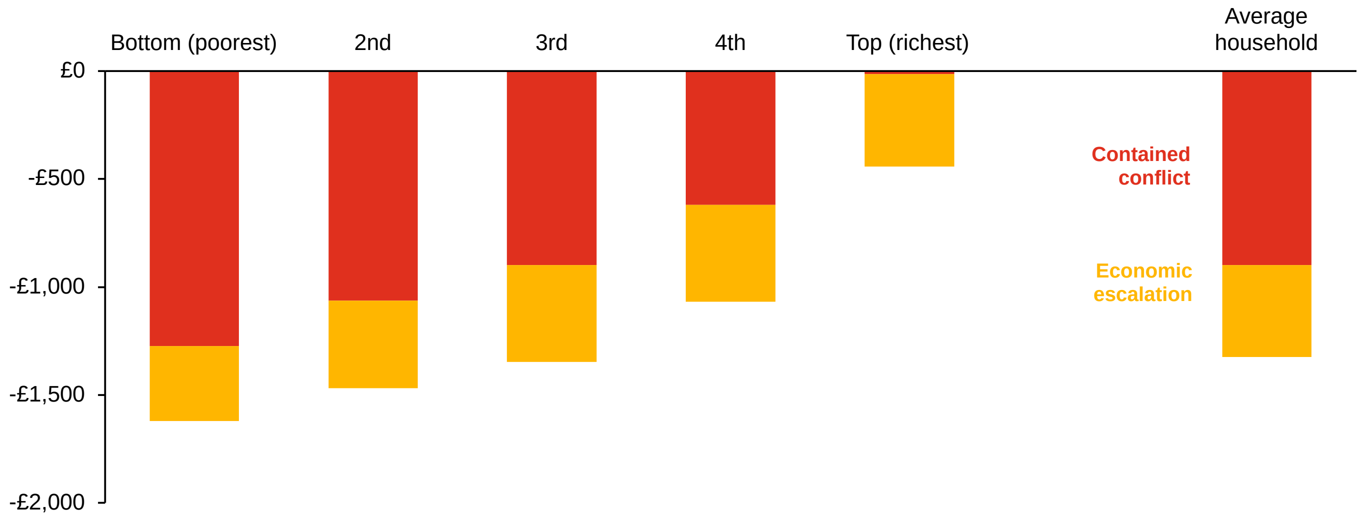
5) Source: National Energy Action

Figure 3.4: Real pay growth, year-on-year, deflated using CPI



Source: ONS, OBR, PwC analysis

Figure 3.5: Projected change in household disposable income by household income quintile, from 2021/22 to 2022/23



Source: ONS, OBR, PwC analysis

Our 'economic escalation' scenario predicts

11%

inflation peak in Q4 2022.

Workers would expect

2%

fall in real wages in 2022.

Households may see

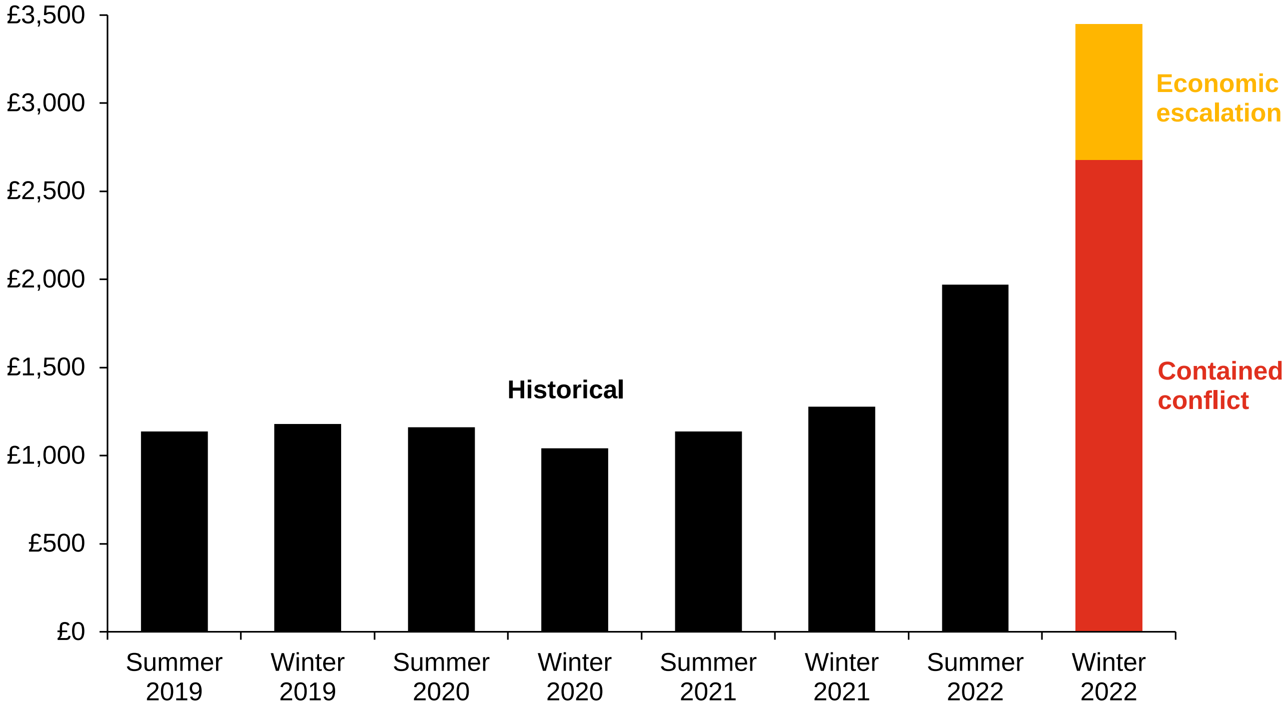
£900

average fall in UK household spending power in 2022.

Box A: An explainer – The household energy price cap

Following changes in government legislation, an energy price cap was introduced in early 2019 by the energy regulator, Ofgem. It places limits on the tariffs paid by households and is calculated every six months, based on the estimated costs to suppliers of providing gas and electricity to households over the period when the price cap is in force. Crucially, this means the cap is not set based on what is affordable for households. Over the past year, turbulence in international energy markets has sent suppliers' costs soaring – increasing the energy price cap by 54% in April 2022. As a result, household energy costs could account for around a quarter of the headline inflation rate for Q2 2022, despite only making up around 3% of the CPI basket.

Figure A.1: Household energy price cap, from launch in Summer 2019 to Winter 2022 (projected)

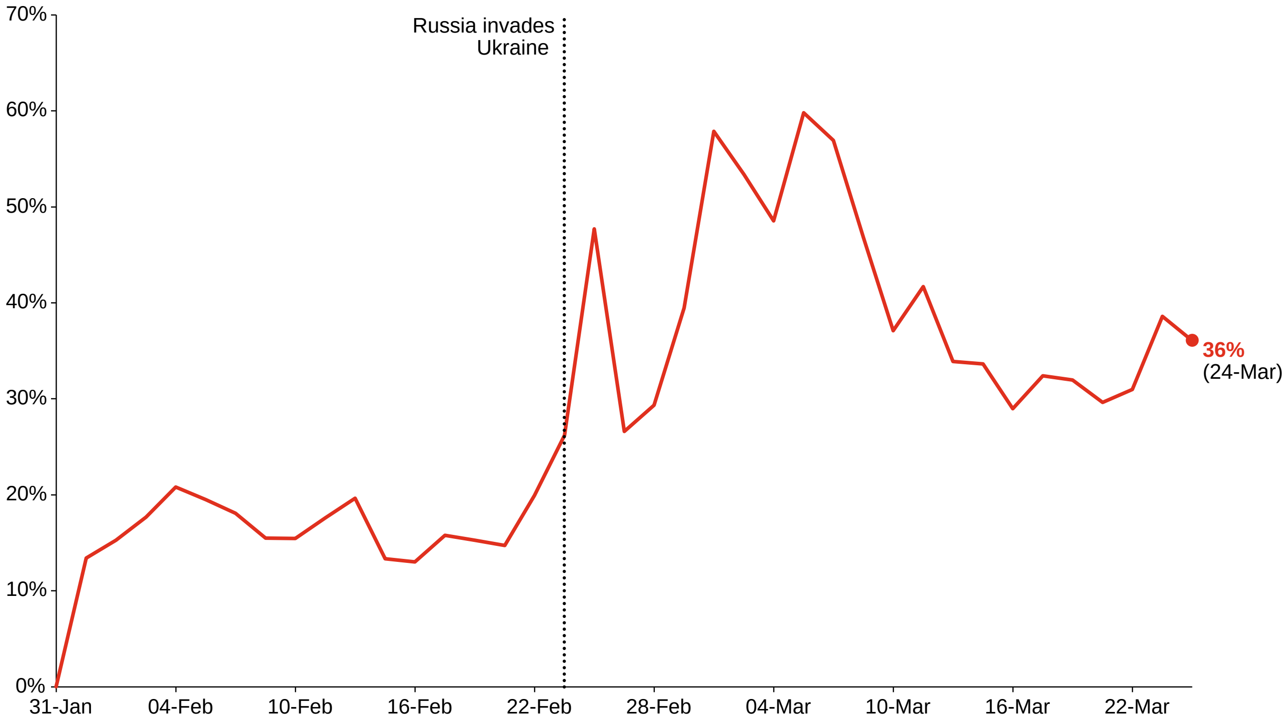


Source: Ofgem, Refinitiv Eikon, PwC analysis

Our in-house price cap model suggests the cap could rise significantly again in October 2022 to around £2,700. This is equivalent to a 36% increase from its current levels, and more than double the cap in place last year. However, there remains significant volatility surrounding this projection. **Figure A.1** shows how our forecast for the percentage change in the energy price cap has changed over the past couple months.

In the initial weeks after Russia invaded Ukraine, our model predicted an eye-watering 60% increase in the cap, which would bring household energy bills above £3,000 a year. Since then, international energy markets have settled, and our model now predicts around a 36% increase in the cap. However, in the event the UK and the EU join the US in banning imports of Russian natural gas (economic escalation scenario) we expect the cap could potentially rise by an additional 75%.

Figure A.2: Projected October 2022 rise in the energy price cap, by date



Sources: Ofgem, Refinitiv Eikon, PwC analysis

Box B: Sensitivity analysis of energy and food prices to the headline CPI rate

Developments in global energy and food prices are expected to continue to drive headline inflation rates over the next couple years. To get a better understanding of the direct impact higher crude oil prices and natural gas prices could have on the headline inflation rate, we carry out a sensitivity analysis which we describe below. Our analysis has two main components:

a) An increase in natural gas prices which has a direct implication on the October 2022 energy price cap. In our sensitivity analysis we assume this ranges from no change to a 40% uplift in October 2022. We use these assumptions to form a view on the impact it could have on electricity and gas subindices of the headline CPI index.

b) An increase in crude oil prices to the level indicated for the remainder of the year. In our sensitivity analysis we use Brent crude assumptions which vary from remaining at a level of $120/bbl up to $150/bbl for the remainder of the year. We use these assumptions to form a view on the impact crude oil prices have on the liquid fuel and fuels and lubricants subindices of the headline CPI index. To do this we carry out a multivariate analysis with crude oil prices and the domestic price index holding all other factors, including exchange rates constant.

The results of our analysis are summarised in **Table B.1** below and show the impact of higher crude oil prices and an additional uplift in the energy price cap could increase the direct contribution of the energy sub-categories of the headline CPI from our baseline of around two percentage points to around four percentage points.

Table B.1: Matrix of direct contributions of energy and fuel categories to headline CPI in 2022

Winter 22 price cap		$70	$120	$130	$140	$150
	No uplift	2.2%	2.9%	3.0%	3.1%	3.3%
	+10%	2.4%	3.0%	3.1%	3.3%	3.4%
	+20%	2.4%	3.0%	3.1%	3.3%	3.4%
	+30%	2.6%	3.3%	3.4%	3.5%	3.7%
	+40%	3.1%	3.7%	3.8%	4.0%	4.1%

Sources: Refinitiv Eikon, PwC analysis

Notes: Excludes second-order and exchange rate effects

This estimate only considers the direct effect of higher energy prices on UK energy inflation. Additional effects that could change these results include:

- **Foreign exchange rates:** The UK is a net energy importer. Any changes to the GBP/USD could therefore lead to direct changes in domestic energy prices.
- **Second-order effects:** Fuel, electricity and energy in general is a key input cost to virtually all businesses. In the absence of productivity gains, businesses will likely pass cost pressures through to their sales price of intermediate goods of retail prices, contributing to further inflation.
- **Policy measures:** These are difficult to predict and could dampen the increase in retail energy prices either via tax changes or direct subsidies

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