

Article

Food and energy price inflation, UK: 2023

Food, energy, and core price inflation in the UK, and insights as to why UK inflation might be higher than in other advanced economies.

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1 . Main points

- In March 2023, the 12-month rate of UK Consumer Prices Index (CPI) inflation was among the highest across advanced economies; as of March 2023, there were signs that inflation was falling in Europe and the US, although this seemed less evident so far in the UK.
- UK food price inflation was among the highest across G7 economies in March 2023, second only to Germany; the high rate of annual food price inflation was in contrast with the recent decline in global food commodity prices, which likely reflected how there were lags before price shocks to filter through the supply chain.
- The 12-month rate of energy price inflation in the UK was the highest among G7 economies in March 2023, which compares with single-digit energy price inflation in most major European economies and declining energy prices in US and Canada; the regulation of utility prices in the UK explain why consumer prices were slower to react to changes in wholesale gas prices.
- The timing of the regulated energy price changes in the UK has an impact on the profile of UK CPI inflation relative to other G7 countries, which in part explain how the 12-month rate compares in March 2023 for the G7 countries.

2 . Background

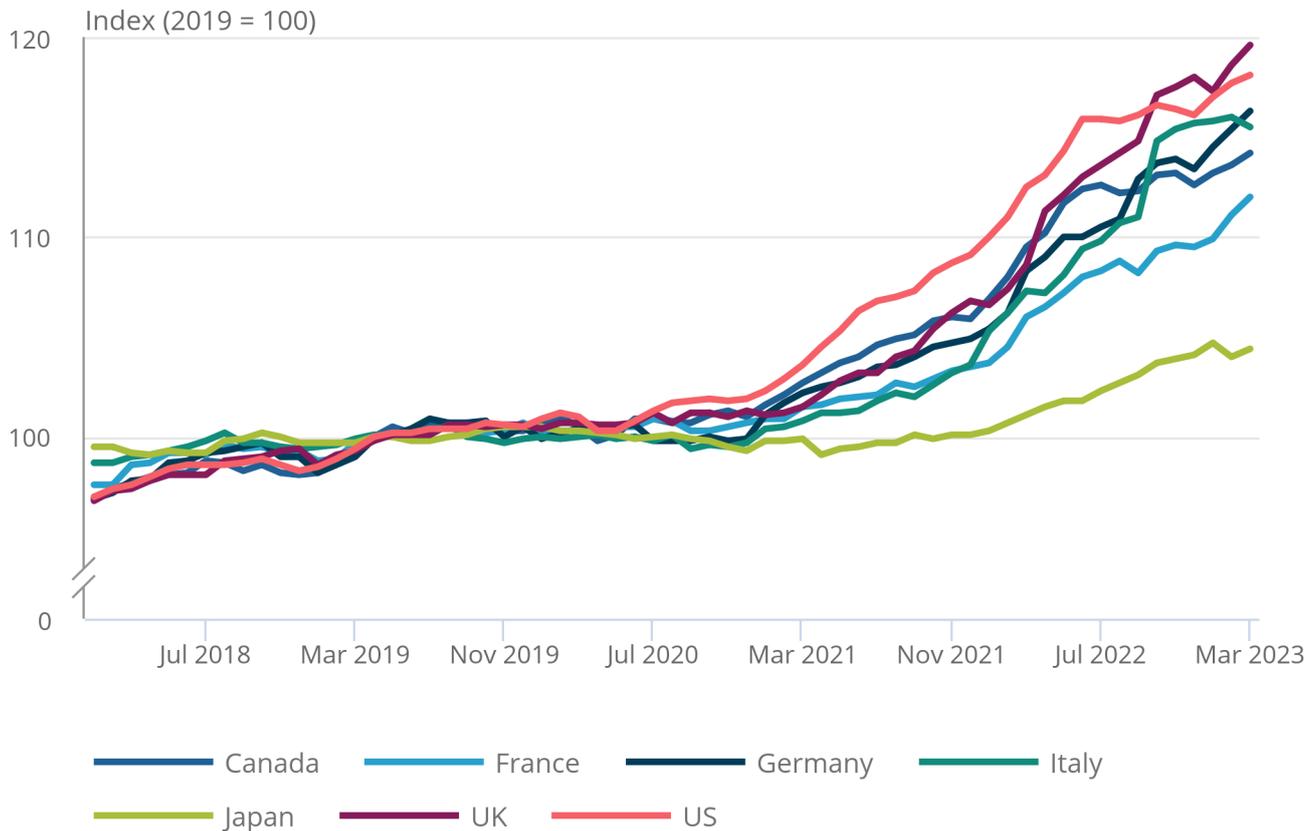
In the eight years leading up to the coronavirus (COVID-19) pandemic, Consumer Prices Index (CPI) inflation was, on average, slightly below the Bank of England's 2% inflation target. Consumer prices increased by a total of 14% over this eight-year period. In contrast, the CPI has increased by 18% over the last two years. There have been similar circumstances in other G7 countries (Figure 1) as consumer price inflation had been running at multi-decade highs in the UK and the global economy, as detailed in our [Global inflation: 1970 to 2022 article](#).

Figure 1: The increase in the price level since the pandemic in the UK is the highest across the G7

Consumer Price Index, 2018 to 2023

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Consumer Price Index, 2018 to 2023



Source: Organisation for Economic Co-operation and Development (OECD and the Office for National Statistics)

Notes:

1. UK figures are based on CPI inflation. Figures for other countries are based on the national measures of consumer price indices as reported by the Organization for Economic Cooperation and Development (OECD). Unlike the Harmonised Index of Consumer Prices – which is not produced by all G7 countries – there are methodological and conceptual differences between national measures.
2. Imputed rentals for housing, also referred to as owner-occupied housing (OOH) costs, are included in CPI inflation in Canada, Germany, Japan, and the US. In contrast, it is not included in the UK, France and Italy CPI inflation.
3. Including imputed rentals into French, Italian, and UK CPI inflation would be expected to lower their headline inflation rate, as these OOH costs are typically less volatile than food and energy prices. Indeed, the UK CPIH which includes OOH recorded a smaller cumulative increase than UK CPI.

There were signs that inflation had fallen in many European countries and North America, this seemed less evident so far in the UK. In March 2023, the 12-month rate of UK CPI inflation was among the highest across advanced economies, while underlying inflation was also proving to be high by historic and international standards.

We look at how food, energy, and core price inflation have evolved recently, including providing some insights as to why UK inflation today might be higher than in other advanced economies.

We explore:

- labour and non-labour input costs
- wholesale food and energy prices
- retail margins, and the pass-through to consumer prices

We also look at the role of timing effects of price changes in the profile of UK CPI inflation over the last year, which will also have an impact on how consumer price inflation evolves over the next year.

For this analysis, we have used the latest [Organisation for Economic Co-operation and Development \(OECD\) figures](#). We look at CPI estimates up to and including March 2023, which is available for all G7 economies. Some countries have already released their April 2023 estimates.

3 . Food price inflation

The annual rate of UK food and non-alcoholic beverage prices inflation increased to 19.1% in the 12 months to March 2023 – its fastest pace for over 40 years. This has primarily reflected supply disruptions over the last 18 months, factors included:

- the Russian invasion of Ukraine in February 2022, which had a major impact on the global supply of grains and fertilizers, and on European energy prices
- labour shortages, which left some crops unharvested
- droughts and cold snaps in Europe and North Africa, which led to higher imported food prices

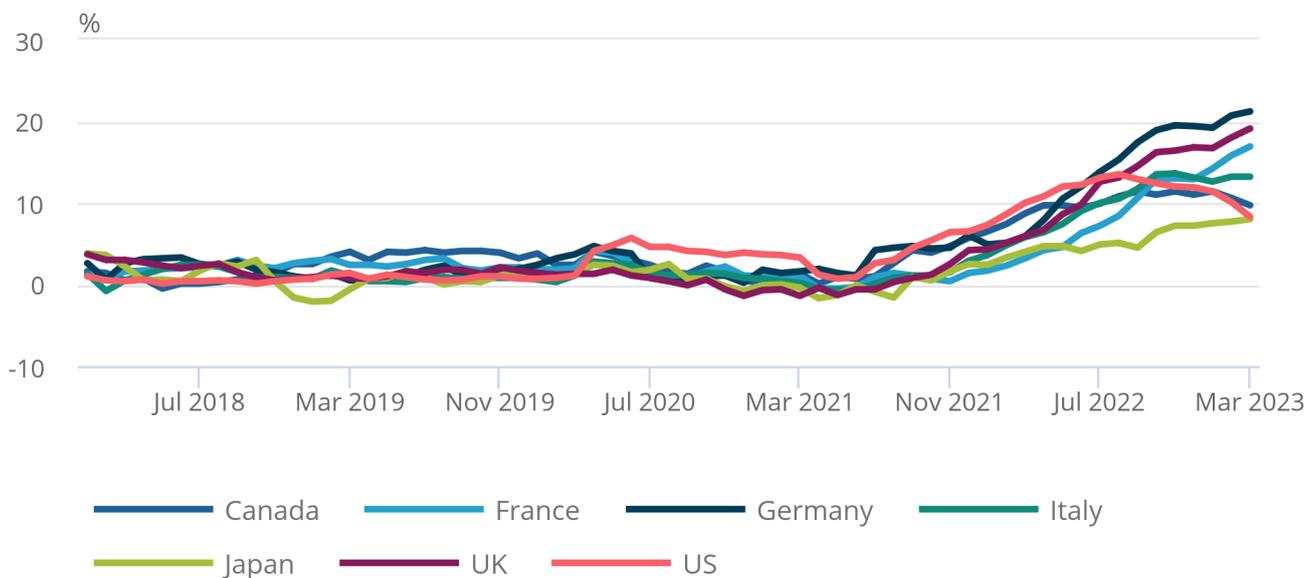
UK food price inflation was among the highest across G7 economies in March 2023, second only to Germany (Figure 2). Conversely, food prices have slowed from last year's peak in Canada and the US. However, some of this might reflect a timing effect as to when these price increases picked up. For instance, on a cumulative basis, food prices in the UK are up 26% compared with their pre-coronavirus (COVID-19) pandemic levels. This is similar with the US where food prices are up 25% since the pandemic. US food prices increased quicker initially over 2021 and 2022, but have decelerated more recently. April 2023 inflation data showed some decline in food price inflation in Europe, in particular fresh food prices. These are often correlated across European countries, however, the lags can vary.

Figure 2: UK food price inflation is among the highest of the G7 economies

12-month rate of food CPI inflation, G7, January 2018 to March 2023

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12-month rate of food CPI inflation, G7, January 2018 to March 2023



Source: Organisation for Economic Co-operation and Development (OECD) and the Office for National Statistics

Notes:

1. Since 2019, food prices have increased by a cumulative 34% in Germany, 26% in the UK, 25% in the US, 23% in Canada and France, 21% in Italy, and 12% in Japan.

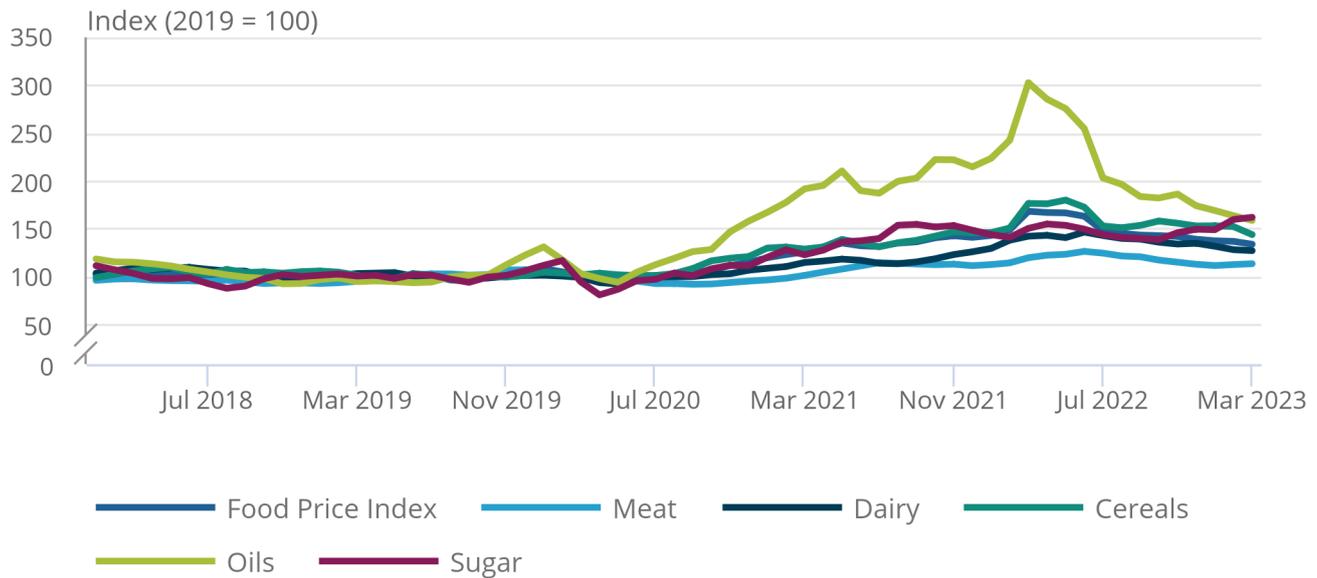
The high rate of annual food price inflation contrasts with the recent decline in global food commodity prices (Figure 3). The Food and Agricultural Organization (FAO) food price index has declined by about 21% from its peak from early last year, although it remains about 33% higher compared with pre-pandemic levels. Prices of most food commodities have been on a downward trend since the second half of 2022, including cereals, dairy, oil, and meats. However, sugar prices have started to increase again more recently. The FAO food price index is a global aggregate measure, leaving scope for individual local or market-specific factors, which are more subtle.

Figure 3: Prices of global food commodities have been on a downtrend trend since mid-2022

FAO Food Price Index, January 2018 to March 2023

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FAO Food Price Index, January 2018 to March 2023



Source: Food and Agricultural Organisation of the United Nations (FAO)

There are several possible explanations for why this has not filtered into UK consumer prices.

Transmission lags

The relationships between farmgate, producer and retail prices are not instantaneous and typically include long lags for price shocks to filter through the value chain. For example, retailers may initially reject suppliers' requests for price increases until there is sufficient evidence that the increase in the suppliers' cost base is not temporary but permanent, and vice-versa. Likewise, suppliers might be tied into long-term contracts for their own inputs, helping to calm some of the volatility in food prices.

Profit margins

Since 2021, food input prices have outpaced food output prices, which in turn have outpaced consumer prices (Figure 4). More recently, input and output prices have stabilized, but consumer prices have not yet. This could indicate that margins are being rebuilt as firms have to perhaps look to offset previous shocks and previous margin compression. The difference between input and consumer price inflation does not seem to be inconsistent compared with previous cycles.

Import dependence

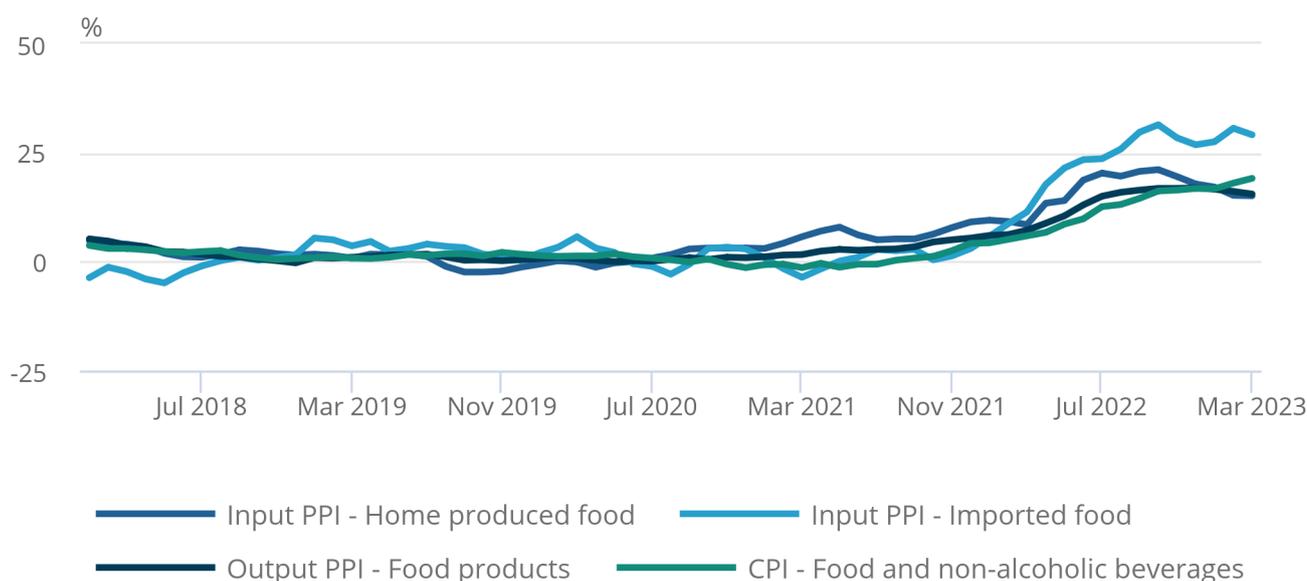
The UK is heavily reliant on food imports. The price of imported food materials has been rising at twice the rate of domestic food materials. Producer input prices for home-produced food materials rose by 15.1% in the 12 months to March 2023, while for imported food materials the increase was 29.1%. European countries, such as Italy and Spain, produce more of their own food and have seen lower food price increases.

Figure 4: UK food prices are decelerating at the early stages of the supply

12-month rate of food inflation, UK, January 2018 to March 2023

Figure 4: UK food prices are decelerating at the early stages of the supply

12-month rate of food inflation, UK, January 2018 to March 2023



Source: Office for National Statistics

It is challenging to produce an estimate of profit margins. For descriptive purposes, one proxy looks at how farmgate prices and retail prices compare. However, this is only a crude approximation as it would not reflect if there have been changes in other costs. Taking milk prices as an example, the average retail price has increased from about £0.45 per pint in 2019 to £0.70 per pint in March 2023. Meanwhile, milk prices at the farmgate are up by only £0.10 over the same period, with the remaining £0.15 explained by combined changes in firms' other costs (such as production, storage, and distribution) and profit margins further up the supply chain.

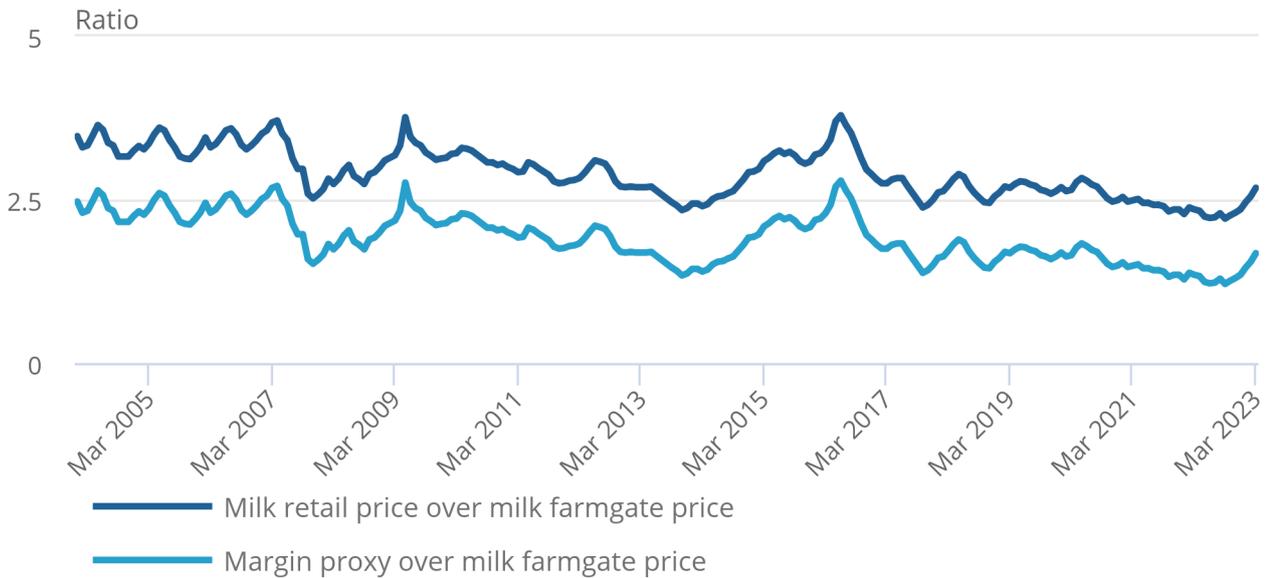
Given these measurement challenges, we cannot conclude if there has been a change in profit margins. Figure 5 shows another proxy for costs and margins within the milk supply chain by standardising the retail price and the difference between the retail price and the farmgate price, as a relative proxy markup over farmgate prices. This reflects how firms tend to set margins as a relative mark up to their cost base to preserve profitability. The ratios are within their pre-pandemic range, which means that increases in retail prices were broadly proportionate to increases in farmgate price in relative terms. However, it is important to note that this is only a crude proxy for margins, which includes changes in firms' other costs, which have also increased. There could also be a timing effect as to when changes are reflected in producer input, producer output, and consumer prices, which could also reflect transmission lags.

Figure 5: The relative markup of milk retail prices over milk farmgate prices has recently increased, although it is within its pre-coronavirus pandemic range

Multiple of milk retail prices and markups over milk farmgate prices, January 2004 to March 2023

Figure 5: The relative markup of milk retail prices over milk farmgate prices has recently increased, although it is within its pre-coronavirus pandemic range

Multiple of milk retail prices and markups over milk farmgate prices, January 2004 to March 2023



Source: Agriculture and Horticulture Development Board (AHDB) and the Office for National Statistics

We have observed similar dynamics in relative proxy markups for other food items, such as beef and pork; it is possible that other food items have different dynamics. Similarly, the [Monetary Policy Report - May 2023 from the Bank of England](#) recently highlighted that “food producers purchase inputs on fixed-term contracts which may take time to reprice” and that “fertilisers will typically be purchased in the autumn for the harvest the following year”. This could explain why there might be some persistence in food Consumer Prices Index (CPI) inflation.

4 . Energy price inflation

UK annual energy price inflation was the highest among G7 economies in March at about 40.5%, mainly led by gas prices. This compares with single-digit energy price inflation in most major European economies, and declining energy prices in US and Canada (Figure 6). One factor is the longer lags between wholesale prices and consumer prices in the UK.

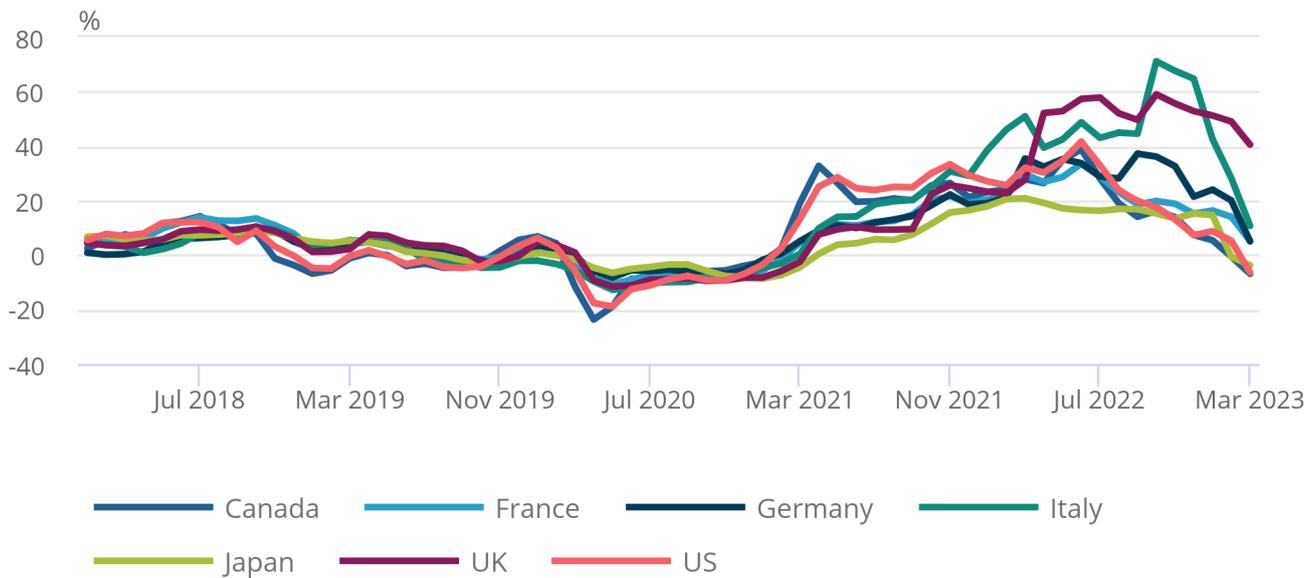
The previous structure of the Office of Gas and Electricity Markets (Ofgem) price cap – which was previously updated every six months – meant that utility prices were slower to react to changes in wholesale gas price following the war in Ukraine. Electricity and gas prices were updated more frequently in some other G7 countries. Each country will have its own framework for regulating energy prices, which have been revisited since the increase in energy prices, such as the reform to the Ofgem price cap to include quarterly updates to prices.

Figure 6: UK energy price inflation was the highest across major advanced economies in March 2023

12-month rate of energy CPI inflation, G7, January 2018 to March 2023

Figure 6: UK energy price inflation was the highest across major advanced economies in March 2023

12-month rate of energy CPI inflation, G7, January 2018 to March 2023



Source: Organisation for Economic Co-operation and Development (OECD) and the Office for National Statistics

Notes:

1. Since 2019, energy prices are up by a cumulative 69% in the UK, 63% in Italy, 47% in Germany, 37% in France, 30% in the US, 25% in Canada, and 10% in Japan.

It is important to note that wholesale gas markets are often segmented across countries. For example, non-European countries did not experience an equivalent rise in gas prices, in comparison with European countries. In the UK, gas futures prices more than quadrupled in 2021. However, the Ofgem cap increased from £1,042 to £1,277 between winter 2020 and 2021 to winter 2021 and 2022 (up 23%). The wholesale price was only fully reflected in the regulated price cap in early 2023, when it was increased to £4279 (Table 1). Non-wholesale costs have also risen and play a part in setting the price cap. The impact on households, and therefore on inflation, was reduced by the government's energy price guarantee (EPG), which was set at £2,500. While the regulated cap includes combined gas and electricity usage, the UK electricity mix is amongst the most exposed to gas prices across the G7, together with Germany and Italy, which has added to utility costs.

Table 1: Energy Price Guarantee has influenced how wholesale energy prices contribute to regulated consumer prices in the UK

| | Ofgem price cap and EPG, UK, summer 2020 to June 2023 | | | | | | | |
|--|---|-------------------|----------------|-------------------|----------------|--------------------|--------------------|---------------------|
| | 2020 summer | 2020/21 winter | 2021 summer | 2021/22 winter | 2022 summer | Oct to Dec 2022 | Jan to Mar 2023 | Apr to June 2023 |
| Default tariff price cap (direct debit) | £1,126 | £1,042 | £1,138 | £1,277 | £1,971 | £3,549 | £4,279 | £3,280 |
| Energy Price Guarantee (EPG) | - | - | - | - | - | £2,500 | £2,500 | £2,500 |

Source: Ofgem

The impact of the recent decline in wholesale gas prices will only filter into utility prices in July 2023, following the next update on the Ofgem price cap. The new price cap for the three-month period of 1 July to 30 September 2023 will be announced in late May 2023. If this is lower than the EPG, this would reduce the price that consumers pay.

5 . Core inflation

Higher food and energy prices have underpinned this increase in consumer price inflation in the UK economy. The UK is a net importer of food and energy and so has underpinned the large fall in the terms-of-trade in 2022, as detailed in our article [The purchasing power of GDP, UK: 2022](#), where higher import prices have contributed to higher producer and consumer prices in the UK.

Exposure to a price shock is a function of the share in expenditure and the price rise. Food and energy comprised of a slightly lower level of expenditure in UK Consumer Prices Index (CPI) inflation relative to most G7 economies. This implies that the UK is less exposed to large food and energy price increases from an expenditure perspective (Table 2). The cumulative increase in the food and energy price level itself has been higher relative to most other advanced economies because of a comparatively higher exposure to gas prices in the energy mix, among other factors.

Table 2: Food and energy comprise a slightly lower level of expenditure in UK CPI inflation relative to other G7 economies

CPI Expenditure weights, G7, 2022

| | Food and non-alcoholic beverages | Energy | Imputed Rentals for Housing | Other items | All items |
|----------------|---|---------------|------------------------------------|--------------------|------------------|
| Japan | 20.8 | 7.1 | 15.8 | 56.2 | 100.0 |
| Italy | 17.1 | 10.1 | - | 72.8 | 100.0 |
| France | 14.4 | 8.9 | - | 76.6 | 100.0 |
| Germany | 11.9 | 7.4 | 10.4 | 70.3 | 100.0 |
| Canada | 11.1 | 7.5 | 13.1 | 68.3 | 100.0 |
| UK | 11.6 | 6.7 | - | 81.7 | 100.0 |
| US | 8.3 | 8.2 | 24.0 | 59.5 | 100.0 |

Source: Organisation for Economic Co-operation and Development (OECD) and the Office for National Statistics

Notes

1. UK figures are based on CPI inflation. Figures for other countries are based on the national measures of consumer price indices as reported by the OECD. Unlike the Harmonised Index of Consumer Prices – which is not produced by all G7 countries – there are methodological and conceptual differences between national measures.

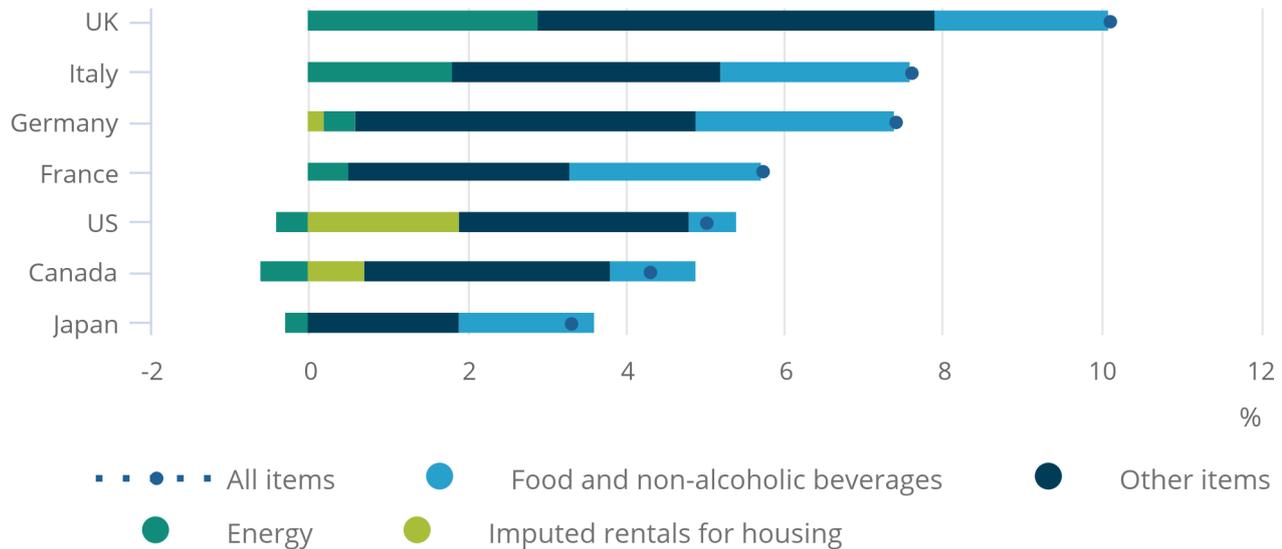
However, there have also been broader price increases in other goods and services. Core inflation is a proxy of the underlying inflationary pressures in the economy, shown in our [New estimates of core inflation, UK: 2022 article](#), which excludes the more volatile price movements in a month. UK core CPI inflation increased by 6.2% in the 12 months to March, excluding food, energy, alcohol, and tobacco prices.

Figure 7: UK CPI inflation was the highest among G7 economies in March 2023

Contributions to the 12-month rate of CPI inflation, G7, March 2023

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Contributions to the 12-month rate of CPI inflation, G7, March 2023



Source: Organisation for Economic Co-operation and Development (OECD) and the Office for National Statistics

Notes:

1. Imputed rentals for housing, also referred to as owner-occupied housing (OOH) costs, are included in CPI inflation in Canada, Germany, Japan, and the US. In contrast, it is not included in the UK, France and Italy CPI inflation.
2. Including imputed rentals into French, Italian, and UK CPI inflation would be expected to lower their headline inflation rate, as these OOH costs are typically less volatile than food and energy prices.

This broadening of inflationary pressures is reflected in our [The dispersion of price changes in the Consumer Prices Index: 2022 article](#). Figure 8 shows the 12-month price changes in the 85 goods and services that comprise the CPI in the 12 months to March 2023. This captures how food and energy prices have shown some of the largest price increases over the last year. For example, gas prices are up around 130% on the year.

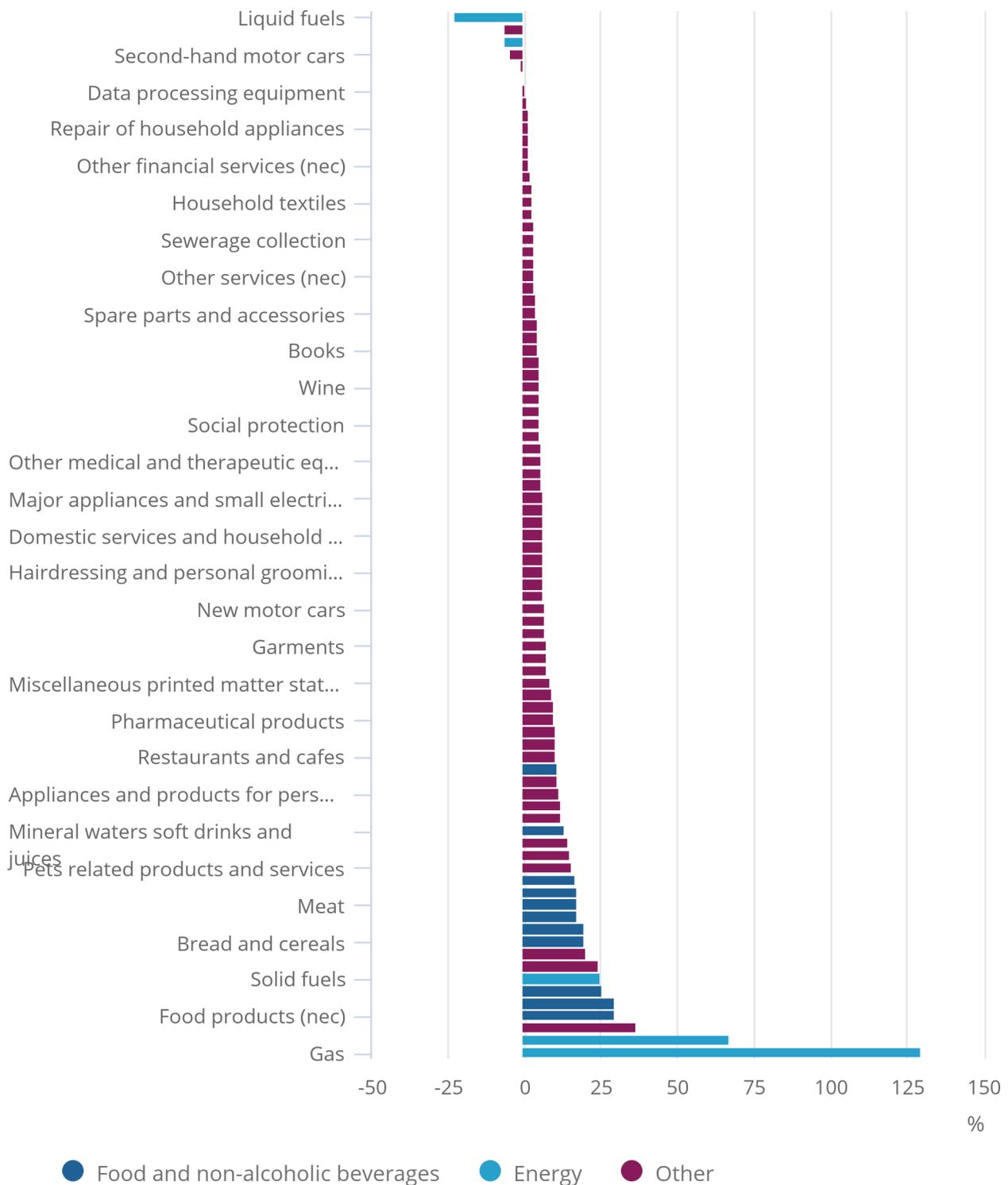
Similarly, the annual inflation rate for many food items is in double digits, often reaching or exceeding 20% on the year. There have been broader price increases in other goods and services. For example, over 70% of these 85 items have experienced consumer price inflation of over 4% in the last year, a record high, some non-energy items are likely being pushed up by higher energy prices because of high energy intensity. More information can be found in our [The energy intensity of the Consumer Prices Index:2022 article](#).

Figure 8: In the year to March 2023 over 70% of CPI items experienced a price increase of at least 4%

12-month rate of CPI inflation, 85 items in the UK CPI basket, March 2023

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12-month rate of CPI inflation, 85 items in the UK CPI basket, March 2023



6 . The profile of CPI inflation

The path of Consumer Prices Index (CPI) inflation over time will reflect the change in the annual inflation rate from one month to the next. This can be approximated by looking at the month-on-month change in the current month (the instantaneous inflation rate) and the month-on-month change twelve months ago (the [base effect](#)). That is, for a 12-month rate of CPI inflation, past changes in inflation matter as much as those today. These base effects have been particularly pronounced for food and energy price inflation over the last year and will be over the next year too. It is important to understand the timing of these base effects in comparing inflation between countries, particularly when there are large price movements. Therefore, it matters how energy prices have been regulated over this period, as these timing effects have an effect in comparing CPI inflation to other countries.

UK inflation has increased in 2021 and 2022 owing to the increase in the instantaneous inflation rate. Unless these increases are repeated this year, the annual inflation rate will mechanically decline owing to base effects weighing on the year-on-year comparison. However, falling inflation is not to be confused with a fall in prices – it is reflecting that prices are still increasing, although not by as much.

In comparison with other G7 countries, base effects have been less prominent in the UK up to March 2023. In the 12-months ahead, base effects will pull back inflation in Italy, Germany and the UK, while becoming less of a factor in France, Canada, and the US. Even though professional forecasters expect inflation to fall markedly over the remainder of 2023, a fall in inflation is not the same as a fall in the price level.

7 . Data sources and quality

More information about UK Consumer Prices Indices (CPI) methodology is available in our [Consumer price indices, a brief guide: 2017](#) and our [Consumer Price Inflation \(includes all 3 indices – CPIH, CPI and RPI\) Quality and Methodology Information \(QMI\)](#).

More information about UK [producer price inflation methodology](#) is available in our [Producer price indices QMI](#).

8 . Related links

[Consumer price inflation, UK: March 2023](#)

Bulletin | Released 19 April 2023

Price indices, percentage changes and weights for the different measures of consumer price inflation.

[New estimates of core inflation, UK: 2022](#)

Article | Released 10 October 2022

Measures of consumer prices inflation excluding the items that record the more volatile price changes each month.

[Global inflation: 1970 to 2022](#)

Article | Released 22 November 2022

Examining trends in consumer price and producer price inflation in the global economy over the last 50 years, including the main drivers and the extent of co-movements.

[Demand and supply factors in CPI inflation, UK: 2021 to 2022](#)

Article | Released 9 March 2023

Insights into the effects of the re-opening of economies and supply bottlenecks on Consumer Prices Index (CPI) inflation in 2021 and 2022.

[The dispersion of price changes in the Consumer Prices Index: 2022](#)

Article | Released 16 March 2023

Measuring the dispersion of inflation rates across the individual goods and services that make up the Consumer Prices Index including owner occupiers' housing costs (CPIH).

[The energy intensity of the Consumer Prices Index: 2022](#)

Article | Released 17 April 2023

Estimates of the direct and indirect energy intensity of the Consumer Prices Index.

9 . Cite this article

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