Article

Global inflation: 1970 to 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.

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1 . Main points

- Consumer price inflation - the rate at which prices faced by consumers have been increasing - has been at multi-decade highs for most advanced economies in the G7 group of countries although it remains below the peaks of the 1970s, which followed two major oil shocks.

- Over two-thirds (69%) of 29 countries have "high" or "very high" inflation compared with their 50-year trends; approximately three-quarters (79%) experienced 12-month Consumer Prices Index (CPI) inflation rates above 6% in September 2022, the most prevalent global inflation has been since 2008.

- Global energy price increases have preceded most spikes in global inflation since the 1970s, including the two oil price shocks in the 1970s and the 1990, 2001, 2008 and 2011 economic events.

2 . Overview

Consumer price inflation in the UK has reached highs not seen for around 40 years. Higher tradable goods prices reflect the global recovery from the coronavirus (COVID-19) pandemic, including the effects of imbalances in product and labour markets. Food and energy prices have also increased markedly this year, particularly gas prices, largely in response to the conflict in Ukraine.

The impact of higher global food, energy and goods prices are affecting global inflation today. We look at inflationary trends for 29 economies over the last 50 years, including how these compare between and within these countries. These price distributions provide new insights into the breadth and depth of current inflationary pressures.

The Harmonised Index of Consumer Prices (HICP) is the most comparable agreed upon measure, equivalent to our Consumer Prices Index (CPI), but it is not produced for all G7 countries. For this analysis, we have used the latest Organisation for Economic Co-operation and Development (OECD) figures, which allow comparisons of a large range of countries over several decades.

There are definitional differences between the measures used by each country, especially the treatment of owner occupiers' housing costs. However, all countries include energy and food in their consumer prices, which have been the main drivers of inflation over recent months. For the UK, we use the Consumer Prices Index including owner occupiers' housing costs (CPIH), our most comprehensive measure of consumer prices and also the measure the OECD reports.

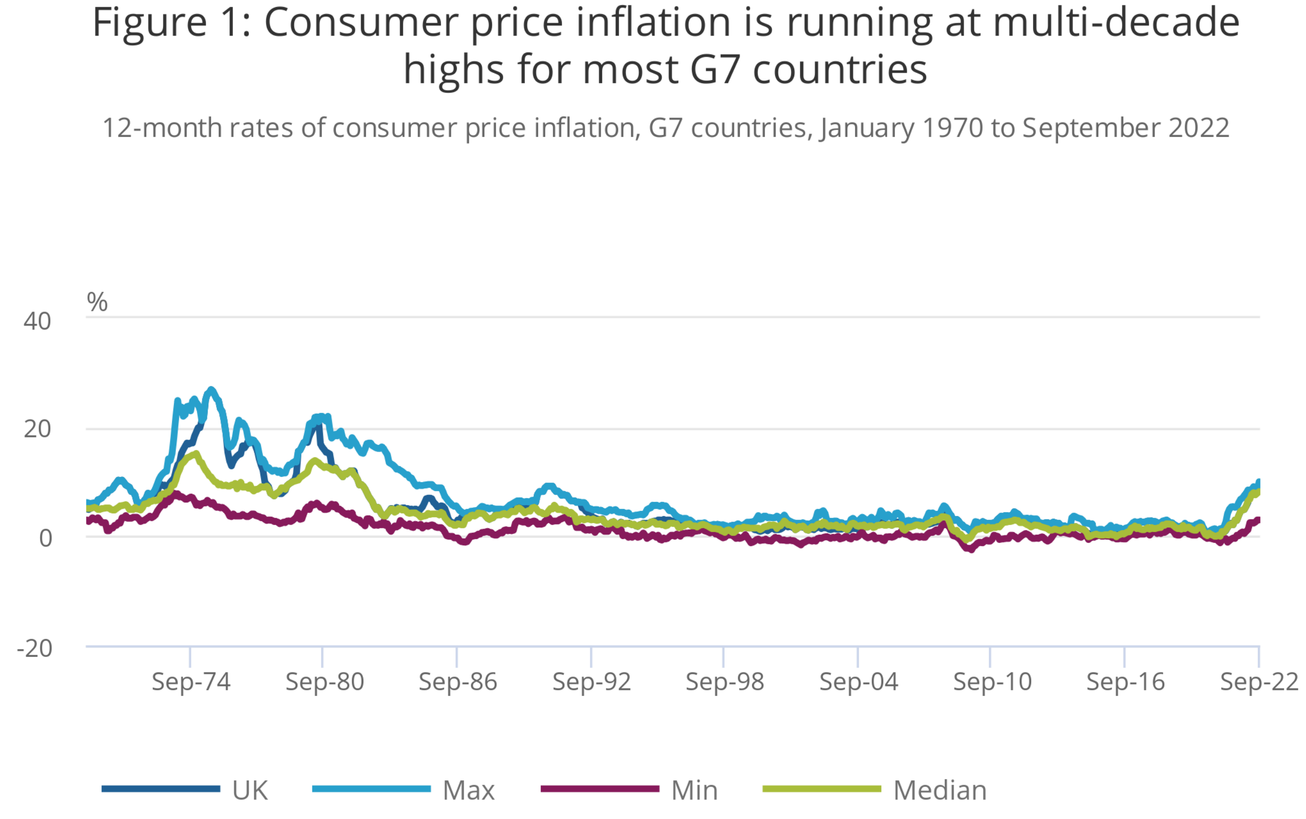
3 . Consumer and producer price inflation

The recent increase in price inflation has been a global feature, where higher producer prices have been feeding through into consumer prices. In recent months, consumer price inflation has been at multi-decade highs for all G7 countries, except Japan, which remains an outlier (Figure 1).

Consumer price inflation was considerably higher in the 1970s following the two major oil shocks. There was a fourfold increase in oil prices following the Yom-Kippur War of 1973, while oil prices more than doubled following the 1979 Revolution in Iran. The prevalence of second-round effects through higher wage and price inflation feeding one another and the energy intensity of these economies also help explain why inflation was much higher in the 1970s.

Figure 1: Consumer price inflation is running at multi-decade highs for most G7 countries

12-month rates of consumer price inflation, G7 countries, January 1970 to September 2022



Source: Organisation for Economic Co-operation and Development

Notes:

1. The 12-month rates for consumer price inflation in the G7 countries (CPIH for the UK) from January 1970, showing the highest and lowest inflation rates each month over this period and the median.

2. Comparisons are based on the national measures of consumer price inflation 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.

3. Figures for Japan are only available from January 1971.

Domestic output producer price inflation has also been very high in France, Germany, Italy and the UK, with recent peaks exceeding those seen for several decades. These reflect prices of products sold as they leave the producer and tend to feed through into consumer prices, where cost-push inflation is a factor. This explains why changes in PPI tend to precede similar, if more muted, changes in consumer price inflation at these times. PPI has fallen back slightly in recent months, which may point to an easing of these inflationary pressures.

Energy prices tend to be a main driver of producer price inflation, which have direct and indirect impacts on costs for most businesses. They also contribute to the distribution and retail costs that feed into the difference between output producer prices and consumer prices. Food products have also been a main driver of output producer price inflation in recent months, reflecting the same factors driving consumer price inflation. These increases in producer prices imply that costs are contributing to increases in consumer prices. As costs increase, firms may respond by increasing prices or by absorbing additional costs into their margins. However, where margins are tight, firms are more likely to pass additional costs on to consumers.

Output producer price inflation peaked around May this year. The latest figures show that there was a slight falling back in producer price inflation in the UK, Germany, France and Italy in August 2022, driven by falling prices for petroleum products. For instance, the price of Brent crude oil is now at $93 (US dollars) per barrel, having been as high as $120 in June. There is uncertainty around the timing and the extent of pass-through to consumer prices but, although producer prices remain elevated, this fall back in producer price inflation could point to consumer price inflation coming off its peak in the coming months.

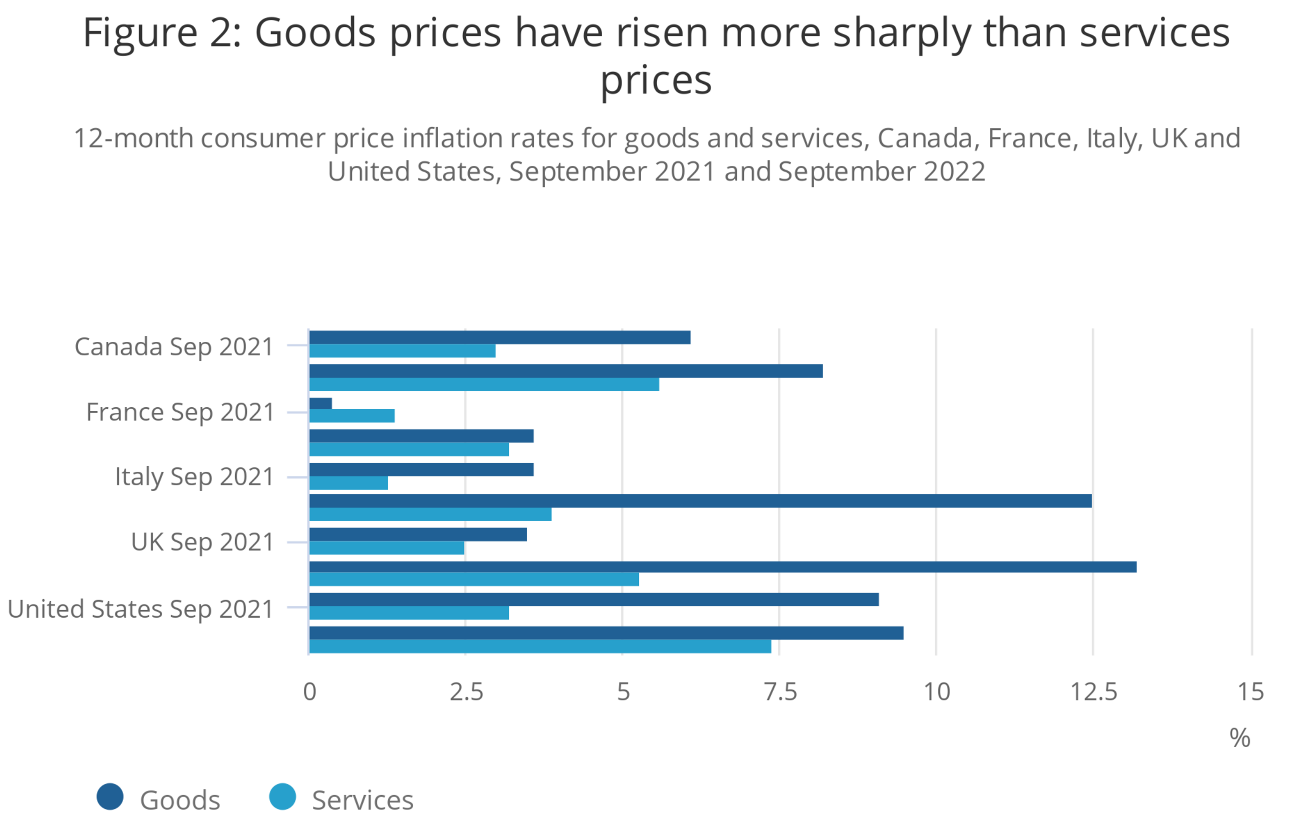
4 . Goods and services price inflation

One feature of these inflationary trends has been the underlying price trends for goods and services, specifically how goods price inflation has increased by more over the last year (Figure 2).

Goods tend to be more traded than services, so goods price inflation is considered as a proxy of global prices pressures, while services price inflation is more of a proxy of domestic prices pressures. These price increases have been stronger for goods, in part reflecting that food and energy prices are recorded as goods, but also the effects of supply bottlenecks as the global economy continues to experience the lingering effects of widespread global shutdowns at the beginning of the coronavirus (COVID-19) pandemic.

Figure 2: Goods prices have risen more sharply than services prices

12-month consumer price inflation rates for goods and services, Canada, France, Italy, UK and United States, September 2021 and September 2022



Source: Organisation for Economic Co-operation and Development

Notes:

1. Comparisons are based on the national measures of consumer price inflation 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 that may limit comparisons

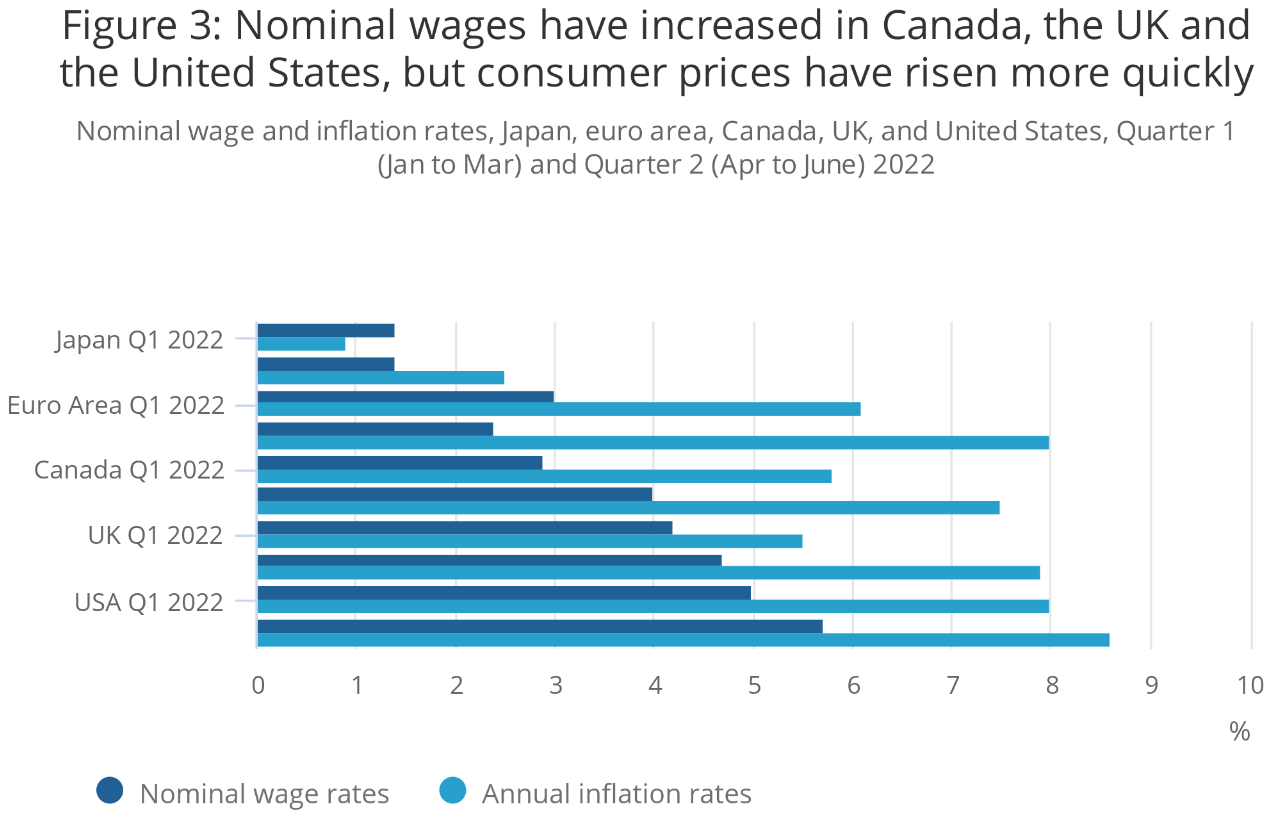
2. Comparable figures for Japan and Germany are not available for the relevant periods.

Global factors still tend to have more of an impact on "core" goods prices - which exclude food and energy. This reflects the higher import intensity of goods, which will be more exposed to international price movements, given that this will feed through more to their cost of production. Goods are also typically more tradable between countries, so will be more influenced by international factors in how higher costs feed through to consumer prices.

Services inflation is more likely to reflect domestic price pressures, such as how much slack there is in the labour market, where lower spare capacity would be expected to lead to higher labour costs. Unemployment rates have continued to fall for the G7 countries, particularly in the UK and United States, where nominal wage inflation has increased in the first half of 2022, albeit at a slower pace than inflation (Figure 3).

Figure 3: Nominal wages have increased in Canada, the UK and the United States, but consumer prices have risen more quickly

Nominal wage and inflation rates, Japan, euro area, Canada, UK, and United States, Quarter 1 (Jan to Mar) and Quarter 2 (Apr to June) 2022



Source: Organisation for Economic Co-operation and Development

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1. Comparisons are based on the national measures of consumer price inflation 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 that may limit comparisons.

5 . Food, energy and “other” price inflation

The recent increase in food and energy prices explains much of recent global inflation. How much these have contributed to the 12-month consumer price inflation rate for the G7 countries in the year to September 2022, including how these contributions have changed over the previous year, is shown in Figure 4.

The war in Ukraine has put pressure on prices for food commodities such as vegetable oil and grain. These are important inputs into a lot of food production and therefore have a wider impact than price rises for other types of food products.

The UK has had the highest rate of energy price inflation in recent months, peaking at around 58% in July. While energy price inflation has remained elevated in the UK, Italy and Germany, it has fallen back in the United States, Canada and France more recently.

Energy prices are playing more of a role in inflation in the UK and Europe, given the higher dependency on Russia supplying gas to Europe. The energy contribution to consumer price inflation in a country depends on the relative amount of consumption expenditure that is on energy and the extent of pass-through from energy price movements to consumer energy prices. The weight of energy in the German Consumer Prices Index (CPI) basket (104.1 parts per thousand) was almost double the energy weight in the UK basket (54 parts per thousand) in 2021. Energy plays a more important role in consumer price inflation in the European economies of France, Germany and Italy than is the case with Canada and the United States.

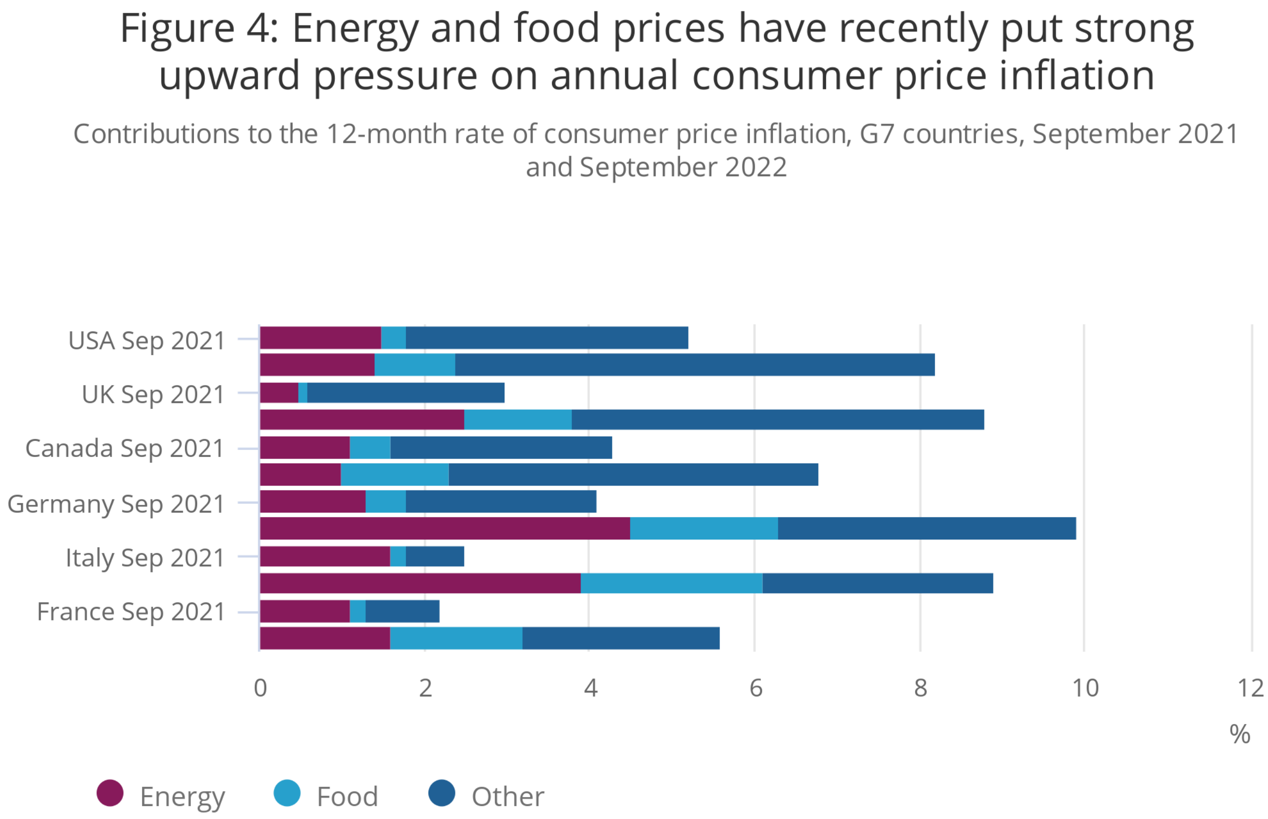
Typically, the pass-through of gas and electricity prices to consumer prices is less straightforward than that of the pass-through of oil prices. It not only reflects how electricity is produced but the frequency of these price changes, depending on how these prices are regulated. For example, in the UK, the Office of Gas and Electricity Markets (Ofgem) energy price cap means that, until recently, prices made step changes every six months when the price cap changed. As such, UK energy price inflation remained relatively stable between October 2021 and March 2022, as they increased in the rest of Europe. However, UK energy price inflation then rose more sharply when the new energy cap rate was introduced in April 2022.

More recently, there has been a range of fiscal policy responses to the energy crisis, which will have an impact on consumer price inflation in these countries. Recent findings show that these cover reduced taxes, a change in the regulation of retail and wholesale energy prices, and transfers to the more vulnerable groups.

The extent to which these directly impact on inflation depends on the mechanism through which they are delivered. For instance, direct payments such as vouchers to vulnerable households may constitute a payment transfer rather than a price adjustment and not directly impact on price quotes - this was the case with the Energy Bills Support Scheme in the UK. Price caps, such as the Energy Price Guarantee, work directly through prices and thereby keep inflation below the level it otherwise would have been without intervention.

Figure 4: Energy and food prices have recently put strong upward pressure on annual consumer price inflation

Contributions to the 12-month rate of consumer price inflation, G7 countries, September 2021 and September 2022



Source: Organisation for Economic Co-operation and Development

Notes:

1. The energy weight in the consumer prices baskets for 2021 are for Canada (74.7 parts per thousand), France (92.3) parts per thousand), Germany (104.1 parts per thousand), Italy (92.5 parts per thousand), UK (54.0 parts per thousand), and the United States (71.6 parts per thousand). Comparable figures were not available for Japan.

2. Comparisons are based on the national measures of consumer price inflation 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 that may limit comparisons.

It is not only these more volatile price movements that have increased over the last year, indicating that there have also been broader inflationary pressures playing a role. Core inflation - that is, excluding food and energy prices - has picked up for the G7 economies. This highlights that there is more to these inflationary trends, such as the impact of the recovery from the initial stages of the coronavirus (COVID-19) pandemic on tradable goods prices as well as tightening labour markets.

The 12-month rates for core components of CPI in September 2021 and September 2022 for each of the G7 countries are shown in Figure 5. This excludes food and non-alcoholic beverages, housing and household services, and transport, which contain energy components. The clustering provides some insight as to whether there are any global co-movements in the price changes of these core components of CPI inflation.

There have been particularly large global price movements in furnishings, household equipment and routine household maintenance, and restaurants and hotels, which would have been impacted by the response to the tightening and easing of pandemic restrictions in place for 2020 and 2021.

Figure 5: Domestic inflationary drivers have varied between countries

12-month rate for consumer price inflation, G7 countries except Japan, September 2021 and September 2022, %

Notes:

1. Comparable figures for Japan are not available for the relevant periods.
2. Comparisons are based on the national measures of consumer price inflation 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 that may limit comparisons.

Download the data

.xlsx

6 . Is there a common underlying trend in global consumer prices inflation?

A widely held view among economists is that the rate of inflation prevailing in a particular country is a combination of global and domestic factors. The global component reflects inflation trends that are common across a wide number of countries, while the domestic component reflects the drivers of inflation that are specific to that individual country.

The relative importance of global and domestic inflation drivers is likely to reflect the degree of correlation between the inflation rates seen across countries. A high correlation infers that inflation patterns across countries are more likely to reflect global drivers common to all. Likewise, a low correlation would infer that the common or global drivers of inflation were relatively weak, and that the inflation rates seen in individual countries more strongly reflects domestic drivers specific to each country.

Principal components analysis is a statistical technique that enables us to detect the degree of correlation in inflation rates across countries and construct indicators of the common trends seen in inflation. If the correlation in inflation rates is strong, then inflation rates across countries will show a high degree of co-movement, reflected in the first principal component, which is the common or global trend in inflation across countries.

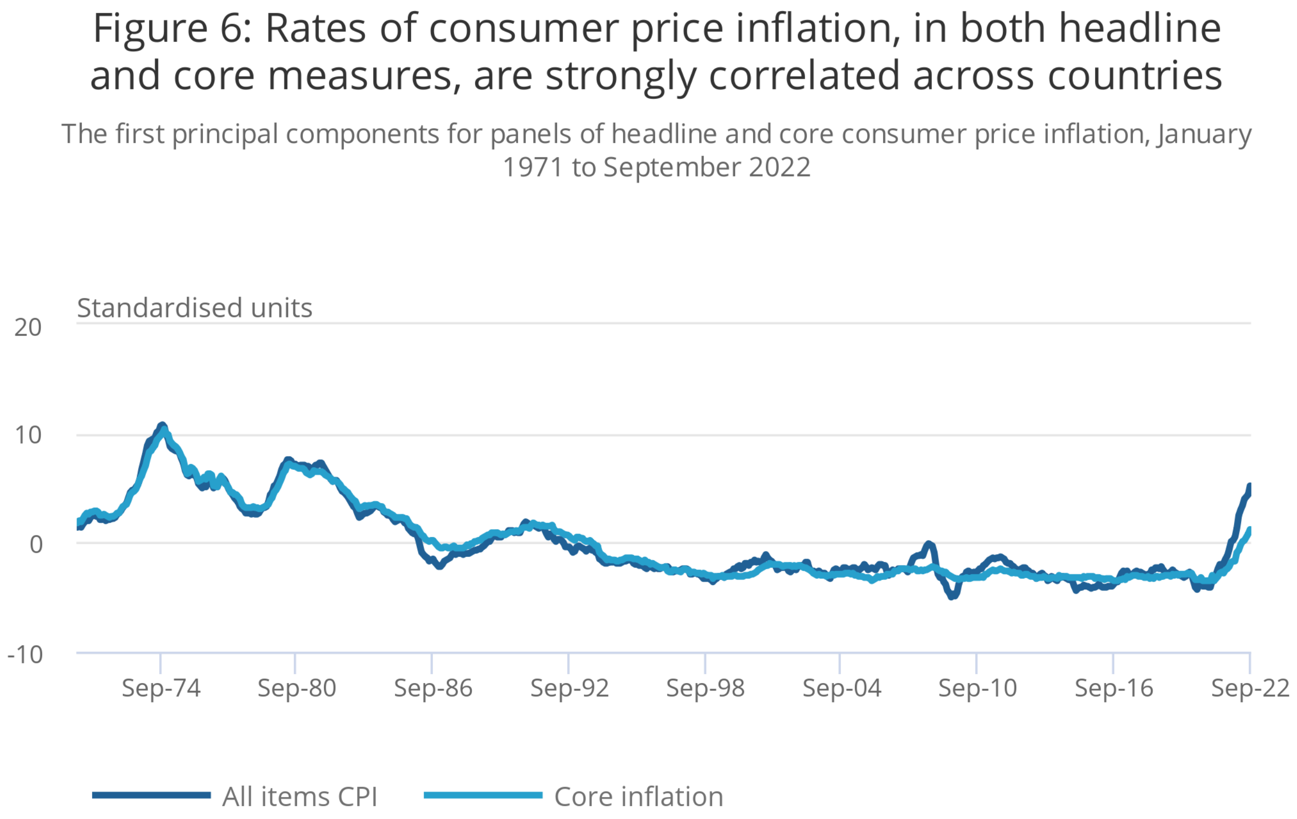
Using a panel of consumer prices inflation rates for 17 countries (Austria, Canada, Denmark, Finland, France, Germany, Greece, Israel, Italy, Japan, Luxembourg, the Netherlands, Portugal, Sweden, Switzerland, UK and the United States) from January 1971 to September 2022, we find that the first principal component accounts for 74.4% of the total co-movement. This reflects a high degree of correlation across countries and is clear indication of a common underlying trend in global consumer prices inflation.

Figure 6 shows the first principal component for this panel. It has been constructed with a mean of zero, so highlights when the common trend in global inflation is relatively high or low compared with the average inflation rate over the sample period. For instance, the economic events resulting in very high inflation in the 1970s, the long period of low inflation between 1990 and 2020, and the sharp acceleration in inflation over the last year and a half can be recognised as common trends in consumer prices inflation across the 17 countries.

Similar analysis can also be done on a panel of core inflation measures for the same 17 countries. This also shows a high degree of correlation over the sample period, with the first principal component accounting for 74.0% of the total variance in the panel. Figure 6 shows that the common global trend in core inflation has broadly moved in line with that for headline inflation. However, in some instances movements in the global trend for core inflation have been less pronounced than the corresponding trend in headline inflation. This has been the case recently, where the acceleration in core inflation, although marked, appears slower than for headline inflation.

Figure 6: Rates of consumer price inflation, in both headline and core measures, are strongly correlated across countries

The first principal components for panels of headline and core consumer price inflation, January 1971 to September 2022



Source: Organisation for Economic Co-operation and Development

Notes:

1. Comparisons are based on the national measures of consumer price inflation 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 that may limit comparisons.

2. The 17 countries used for this analysis are those for which core inflation data are available back to 1971.

7 . Breadth and depth of global inflation

The recent increase in global inflation has been sudden and widespread by historical standards. Of 29 countries with comparable inflation figures, including 26 of the 38 Organisation for Economic Co-operation and Development (OECD) countries and India, Indonesia and South Africa, 79% of these countries had inflation above 6% in September 2022 - down slightly from a recent peak of 83% in July 2022, the highest proportion for several decades before the recent economic events (Figure 7).

The previous peak of 28% in late 2008 and early 2009 was when the global economy was last hit by large increases in food, commodity and energy prices. Amid high global demand, Organization of the Petroleum Exporting Countries (OPEC) producers had not raised their oil production quotas, while there was reduced crude oil output non-OPEC producers. This was coupled with geo-political tensions in Venezuela, Iraq and Nigeria, as well as strike action in the UK North Sea oil production.

The recent change in this distribution has also been more extreme than in 2008 and 2009. However, this remains lower than was seen during the 1970s, when all 29 countries had inflation above 6% from December 1973 to November 1974, and over half of the countries had inflation above 6% for over a decade from April 1972 to December 1984.

Figure 7: 79% of 29 countries have inflation above 6% in September 2022

Distribution of annual consumer price inflation rates, January 1971 to September 2022

Notes:

1. Comparisons are based on the national measures of consumer price inflation 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 that may limit comparisons.

Download the data

.xlsx

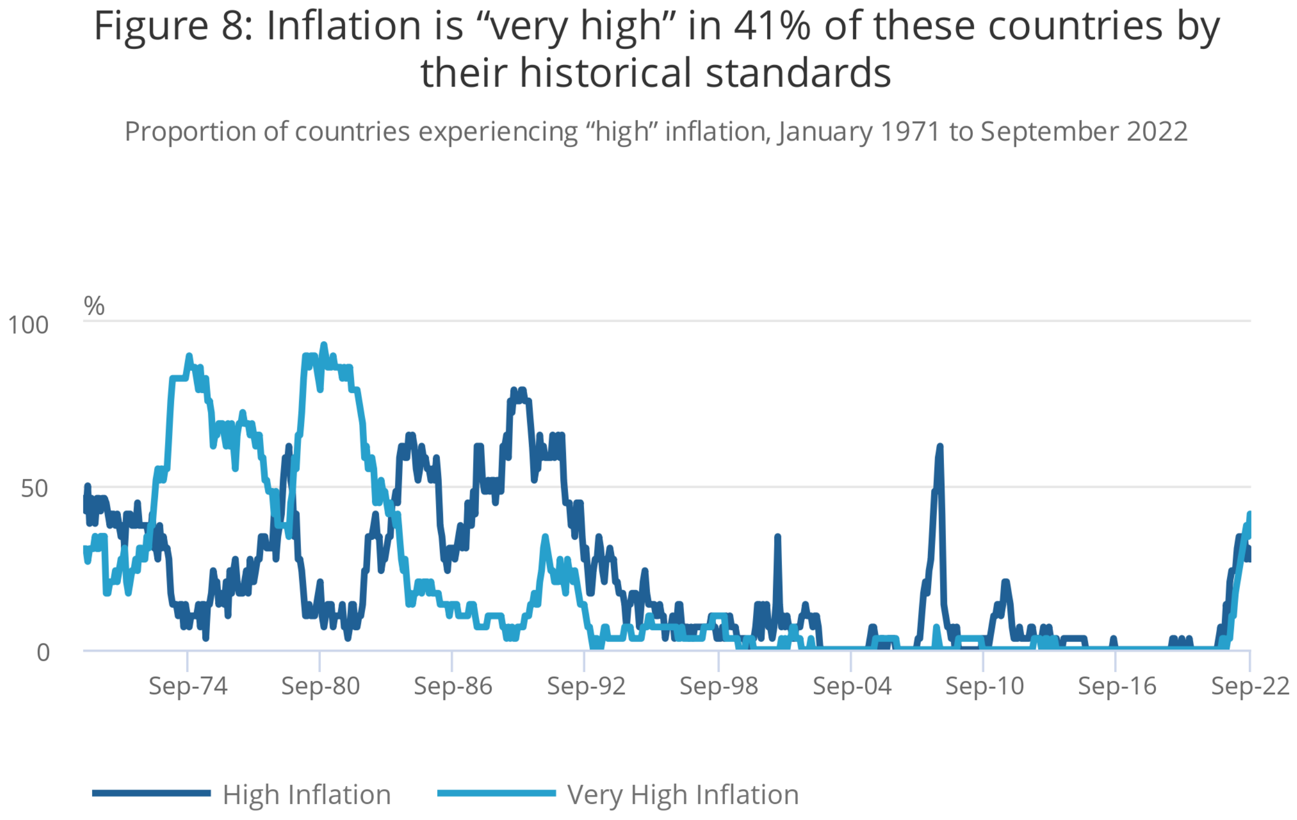
We also look at whether inflation in these 29 individual countries is running above its historical trends. We consider a country to be experiencing "very high" inflation if the 12-month rate of inflation is above its 80th percentile from January 1971 to December 2019 and "high" inflation if it is between its 60th and 80th percentile over that same period.

Figure 8 shows that 41% of the countries are currently experiencing "very high" inflation, while another 28% are experiencing "high" inflation. The proportion of countries experiencing either "high" or "very high" inflation has been sustained at over 50% for the last eight months, a trend not seen since the early 1990s. That said, it remains lower than the levels seen in the 1970s, which highlights that the global economy is not experiencing the same inflationary environment of that time where second round effects was more of a concern.

It also shows that other energy shocks have preceded each of the spikes seen in global inflation over the period over the last 50 years - 1990, 2001, 2008 and 2011. This reflects some specific features of the global energy market - that energy components are of high importance for all economies and have relatively inelastic demand, prices are typically set globally so most economies are subject to price shocks at the same time, and that supply of energy commodities is also relatively inelastic. Energy supply has also been subject to global geo-political factors such as the Yom-Kippur war and the Iranian revolution in the 1970s, Iraq's invasion of Kuwait in 1990 and, more recently, the Russian invasion of Ukraine in 2022.

Figure 8: Inflation is “very high” in 41% of these countries by their historical standards

Proportion of countries experiencing “high” inflation, January 1971 to September 2022



Source: Organisation for Economic Co-operation and Development

Notes:

1. We consider a country to be experiencing “very high” inflation if the 12-month rate of inflation is above its 80th percentile over the period January 1971 to December 2019. We consider a country to be experiencing “high” inflation if the 12-month rate of inflation is above its 60th and below its 80th percentile over the period January 1971 to December 2019.

2. Comparisons are based on the national measures of consumer price inflation 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 that may limit comparisons.

8 . Glossary

Consumer price inflation

Consumer price inflation is the rate at which the prices of goods and services bought by households rise or fall. It is estimated by using price indices.

Consumer Prices Index including owner occupiers' housing costs (CPIH)

CPIH is the most comprehensive measure of inflation in the UK. It extends the Consumer Prices Index (CPI) to include a measure of the costs associated with owning, maintaining and living in one's own home, known as owner occupiers' housing costs (OOH), along with Council Tax. Both are significant expenses for many households and are not included in the CPI.

Consumer Prices Index

The CPI is a measure of consumer price inflation produced to international standards and in line with European regulations. The CPI is the inflation measure used in the UK government's target for inflation.

G7 countries

Canada, France, Germany, Italy, Japan, the UK and the United States.

Output prices

The factory gate price (output price) is the amount received by producers for the goods that they sell to the domestic market. It includes the margin that businesses make on goods, in addition to costs such as labour, raw materials and energy, as well as interest on loans, site or building maintenance, or rent.

Producer price inflation

Changes in the prices of goods bought and sold by manufacturers, including price indices of materials and fuels purchased (input prices) and factory gate prices (output prices).

9 . Data sources and quality

More information about UK Consumer Prices Indices methodology is available in Consumer price indices, a brief guide and the CPI Quality and Methodology Information report.

More information about UK producer price inflation methodology is available in the PPI Quality and Methodology Information report.

10 . Related links

Consumer price inflation, UK: October 2022
Bulletin | Released 16 November 2022
Price indices, percentage changes, and weights for the different measures of consumer price inflation.

Producer Price Inflation, UK: October 2022
Bulletin | Released 16 November 2022
Changes in the prices of goods bought and sold by UK manufacturers including price indices of materials and fuels purchased (input prices) and factory gate prices (output prices).

11 . Cite this article

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