

# The post-pandemic inflationary episode in advanced economies: a historical perspective

Article 01  
25/09/2023

<https://doi.org/10.53479/33773>

## Rationale

Inflation surged in the world economy from 2021 owing to a succession of shocks, including most notably the rise in energy prices. However, it appears to have peaked in many countries over the past few months, marking the start of a declining phase. This article analyses, for a group of advanced economies, the features of the current inflationary process vis-à-vis other past episodes, paying special attention to those triggered by energy shocks.

## Takeaways

- The post-pandemic surge in inflation has occurred faster than in previous inflationary periods. However, the scale of the rising inflation in the current episode is similar to that of past episodes arising from energy price increases.
- According to the historical pattern, underlying inflation reaches its peak very near the time headline inflation does. However, in the current inflationary process there is a lag of around six months and underlying inflation is more persistent.
- The synchronisation between countries regarding inflation is greater in inflationary processes caused by energy price shocks and is stronger in the current episode than in the past owing to the confluence of several global shocks.

## Keywords

Inflationary process, underlying inflation, energy shocks.

## JEL classification

E31.

---

### Authors:

**Corinna Ghirelli**  
International Economics and Euro Area  
Department. Banco de España

**Teresa Sastre**  
International Economics and Euro Area  
Department. Banco de España

**Nicolás Bonino**  
International Economics and Euro Area  
Department. Banco de España

**Luis Julián Álvarez**  
International Economics and Euro Area  
Department. Banco de España

**Daniel Santabárbara**  
International Economics and Euro Area  
Department. Banco de España

## THE POST-PANDEMIC INFLATIONARY EPISODE IN ADVANCED ECONOMIES: A HISTORICAL PERSPECTIVE

Following the pandemic, inflation surged in the world economy owing to a succession of shocks (global supply chain disruptions, the increase in oil prices, the Russian invasion of Ukraine and its impact on gas and cereals prices, and the increase in food and other commodity prices), reaching rates that exceeded the monetary policy targets in the vast majority of countries. In recent months, despite certain idiosyncratic aspects, more and more countries are seeing a decline in headline inflation. Inflation peaked between March and April 2023 in all advanced economies, but underlying inflation is declining with some delay and, by July 2023, it was only affecting 80% of them (see Chart 1).

Against this backdrop, this article analyses the current inflationary process in advanced economies from a historical standpoint, paying special attention to the episodes triggered by quick and sharp rises in energy commodity prices (energy shocks). In particular, the monthly series of the year-on-year rate of change of the overall and underlying consumer price indices since 1971 are considered for 19 advanced economies.<sup>1</sup> In order to ensure comparability between countries, Organisation for Economic Cooperation and Development (OECD) data have been used which define underlying inflation as the result of excluding food and energy from the overall index.

The historical regularities of previous inflationary processes have been characterised based on the average inflation rates observed around the local peak headline inflation in a series of episodes, selected in accordance with the criteria described in Bank for International Settlements (BIS, 2023).<sup>2,3</sup> In most countries there are at least two or three episodes that meet these criteria and can be defined as inflationary processes. The historical regularities of such processes are synthesised as the median inflation rate in each of the months preceding and following the headline inflation peak in the different episodes in the 19 economies considered. The regularities of the current episode are summarised as the median inflation by country in the months preceding and following the headline inflation peak in each country. The bands, represented by the shaded area, correspond to the interquartile range. Lastly, the comparison of the current episode with the historical regularities is based on three aspects: how fast inflation rises or falls,<sup>4</sup> the inflation level reached, and the lag between peak headline inflation and peak underlying inflation. The following results of this comparison are noteworthy (see Chart 2):

---

1 The economies included in this analysis are: Austria, Canada, Denmark, Finland, France, Germany, Greece, Israel, Italy, Japan, Luxembourg, Netherlands, Norway, Portugal, Sweden, Switzerland, South Korea, United Kingdom and United States.

2 The selection criteria are the following: (i) the 13-month moving average of inflation is at its local peak, (ii) there are no other peaks in the preceding and the following 12 months, (iii) the peak is between 3% and 25%, (iv) the peak is at least 3 percentage points higher than the lowest troughs in the preceding and the following 12 months. Month = 0 is when the actual headline inflation value is at the highest during that particular episode. The same criteria apply in the post-pandemic inflationary process, but if headline inflation has not started to decline, it is assumed that the latest figure is the peak.

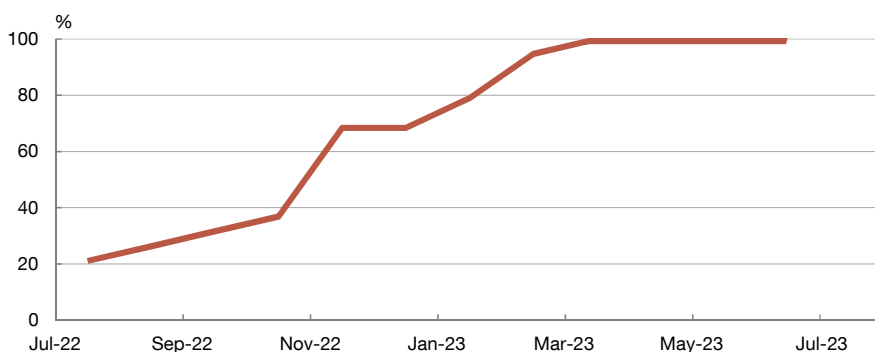
3 It is noted in BIS (2023) that the current episode resembles more closely the episodes of the 1970s than those of other historical moments, although disinflation is happening more slowly than it was then. The analysis focuses, above all, on the obstacles facing the continuation of disinflation at a good pace in the future.

4 If, over a specific number of months, inflation increases more during one inflationary process than another one, it is considered to have increased faster in the first than in the second.

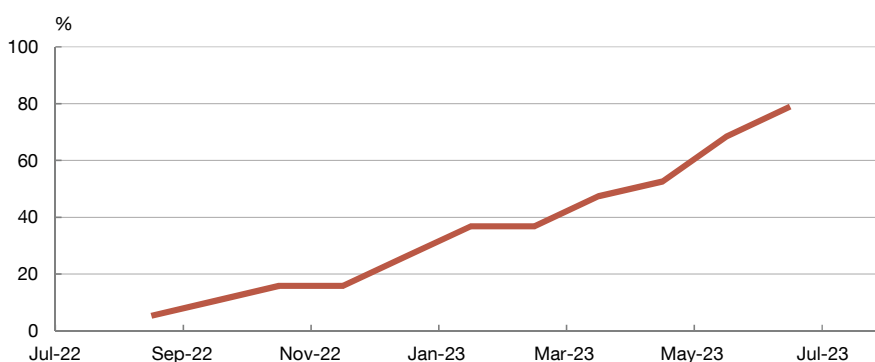
Chart 1

**The disinflation process. Percentage of countries that have passed their headline and underlying inflation peaks**

## 1.a Headline inflation



## 1.b Underlying inflation



SOURCES: OECD and Banco de España.

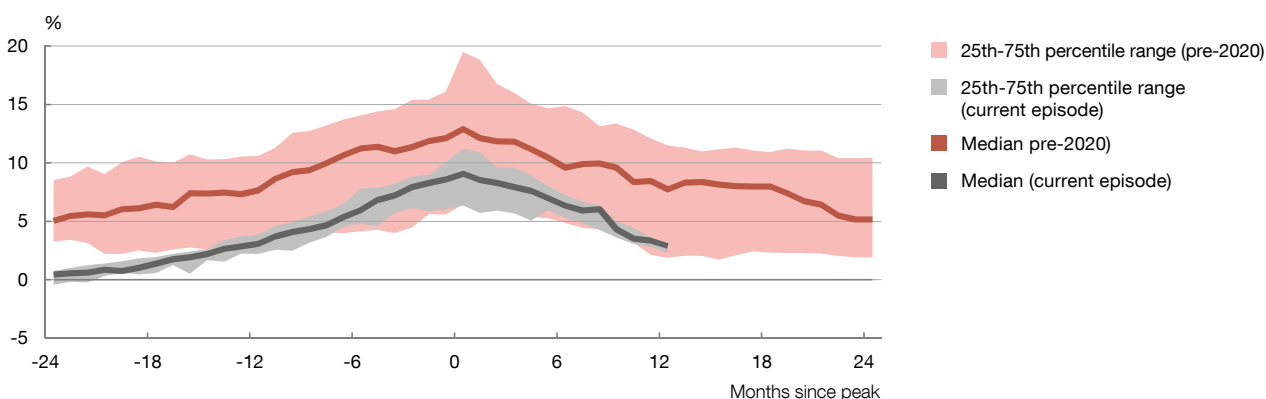


- Headline inflation during the post-pandemic episode does not differ much from the historical average in the advanced economies, despite the different shocks and the policies adopted by each country in each of the inflationary processes. However, in the most recent period inflation rose slightly faster than the historical average.
- There is, however, a substantial difference in the average inflation value which, in the most recent episode, stands below the historical pattern. The latter is an average encompassing inflationary episodes since 1971, with higher levels than those recorded in recent decades, when central banks adopted inflation targets.
- In the current inflationary process, underlying inflation has posted similar hikes to those of the past, starting from lower levels. However, of note is the lag between peak headline inflation and peak underlying inflation (around six months) in the post-pandemic episode, unlike what was seen in the past, when peak underlying inflation was contemporaneous with peak headline inflation. Nonetheless, it should be noted that the decline in underlying inflation in the current episode has yet to start in some economies.

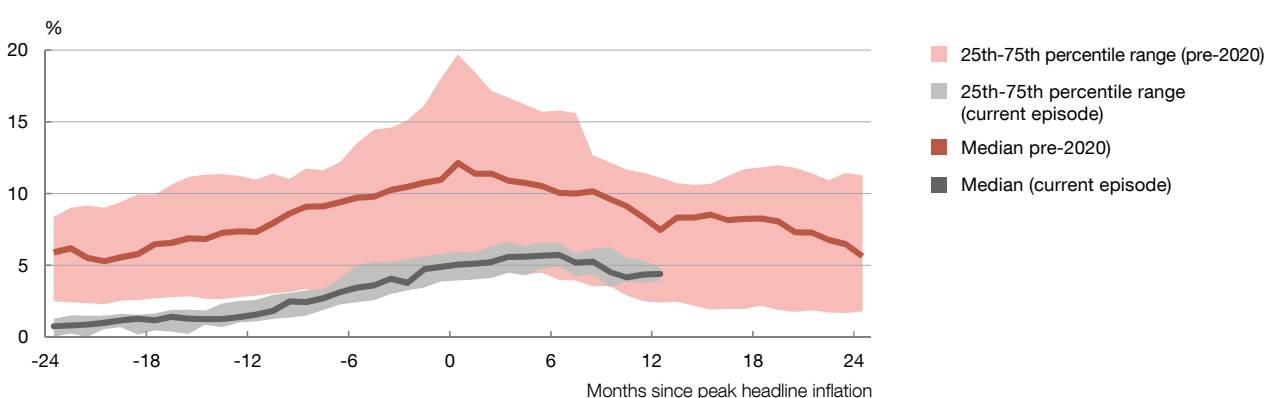
Chart 2

## Historical comparison of headline and underlying inflation during inflationary episodes

## 2.a Headline inflation



## 2.b Underlying inflation



SOURCES: OECD and Banco de España.



Given that inflation's post-pandemic growth and subsequent decline were largely driven by energy price shocks, we posit a historical pattern based on the overall inflation processes caused by energy shocks.<sup>5</sup> When the current episode is compared against this historical pattern, the following stylised facts can be observed (see Chart 3):

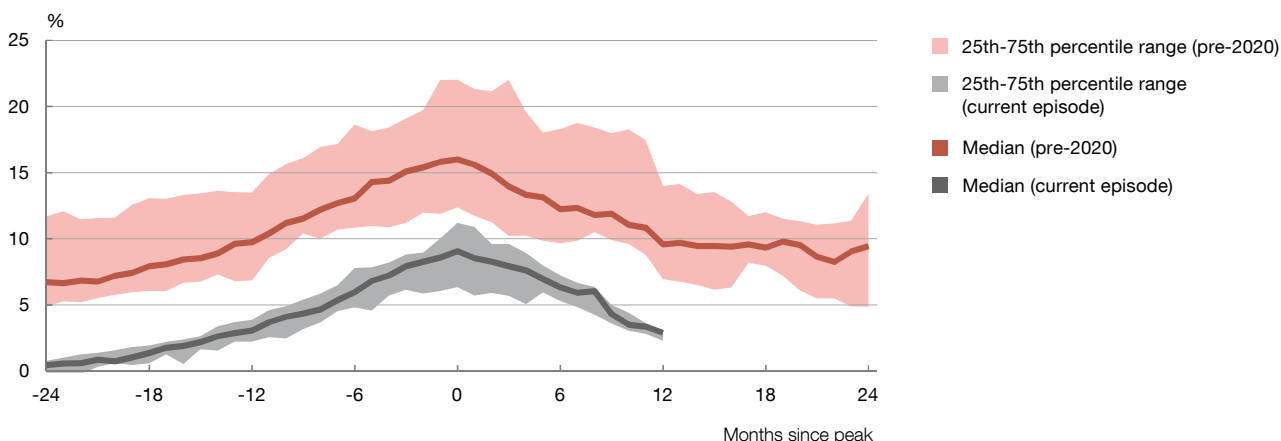
- The post-pandemic episode has seen jumps in inflation similar to those seen in historical inflationary episodes linked to energy price shocks. It is also worth noting that episodes linked to energy price shocks have headline and underlying inflation levels above historical inflation processes overall (including those associated with energy price shocks).
- The disinflationary phase of the current period appears to be occurring at a similar pace to previous inflationary periods linked to energy price shocks owing to the performance

<sup>5</sup> Episodes of inflation caused by energy prices are defined as those in which headline inflation reached a peak in the 12 months after the following shocks: (i) 1973 – Saudi Arabian oil crisis, (ii) 1979 – Iranian Revolution, (iii) 1990 – Gulf War, (iv) 2005 – OPEC cuts, and (v) 2022 – Russian invasion of Ukraine. With the exception of the last item, these energy market shocks were identified in Kilian (2009).

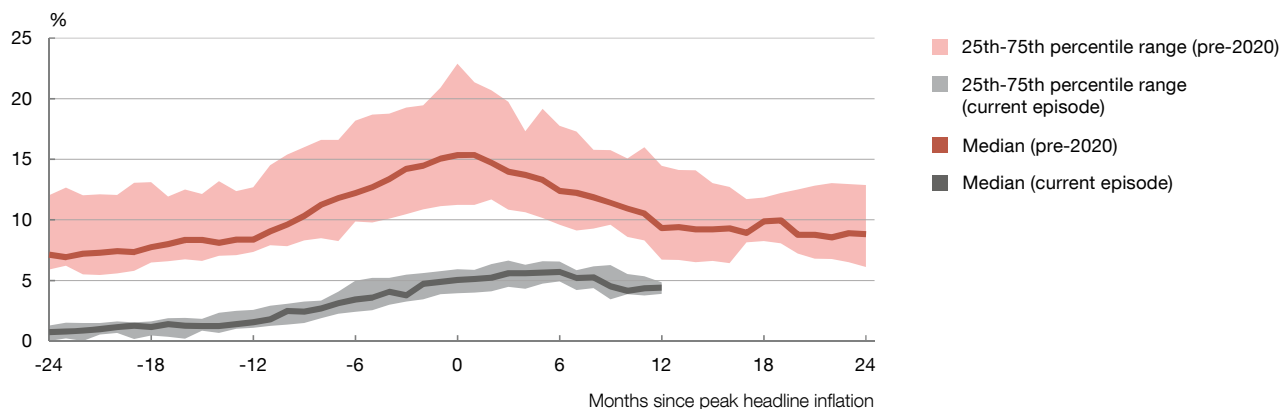
Chart 3

**Historical comparison of headline and underlying inflation in high-inflation periods and energy supply crises**

## 3.a Headline inflation



## 3.b Underlying inflation



SOURCES: OECD and Banco de España.



of the more volatile components that are excluded from the calculation of underlying inflation.

- Underlying inflation seems stickier in the post-pandemic period, having fallen only slightly from peak levels and relative to the highest levels of headline inflation (around six months earlier).

Taken together, these findings suggest that the post-pandemic inflation process is not, in general, very different from previous historical episodes, especially those triggered by energy price rises. However, the dynamics of underlying inflation do show some significant differences, above all in terms of the speed with which it rises and falls – appearing to be slower in the current post-pandemic inflation process. The reasons for this change are still the subject of debate, although it may be linked to some idiosyncratic features of the post-pandemic period. First, global supply chains were disrupted by successive waves of the pandemic and the labour market tightened around the world, with very

low rates of unemployment.<sup>6</sup> Second, some analyses suggest that strong demand for services, which is propping up inflation in these components, along with the recovery in mark-ups following the declines seen during the pandemic, could be relevant in explaining the persistence of underlying inflation.<sup>7</sup> Lastly, rising food commodity prices constitute a novel differential input in the recent inflation process when compared with historic energy price shocks.<sup>8</sup> Their input is contributing to persistent price buoyancy in some items of underlying inflation.

In any case, the heterogeneity across countries in these and other developments may also be echoed in the widening differences between economies in terms of the pass-through of shocks to headline and underlying inflation, which could entail changes in the degree of inflation's synchronisation across countries. To delve further into this aspect, we examine inflation's cross-country variability and the degree of synchronisation in various inflationary periods from a historical perspective.

In the last two decades of the 20th century, the cross-country dispersion of underlying and headline inflation narrowed in the advanced economies (see Chart 4) and has stayed narrow since then, especially in the post-pandemic period (see Chart 2). A range of factors may lie behind this stylised fact. First, the process of globalisation in recent decades and its impact on supply chains may have been conducive to greater international homogeneity in the diffusion and the pass-through of fluctuations in the prices of commodities and other intermediate inputs. Second, the monetary policies of different economies have been converging and euro area countries have shared a currency since 1999, which could partly explain the decline in inflation rates, and thus the smoothing of differences across economies. Third, it is possible that global shocks, such as wild oil price fluctuations, are growing in importance relative to other, more idiosyncratic, shocks.<sup>9</sup> This is the case for the post-pandemic inflationary episode, in which several global shocks have coincided to affect all economies to a greater or lesser extent – namely price hikes of oil, gas and food, and global supply chain disruptions.

A co-movement indicator (based on the methodology in Álvarez, Gadea and Gómez-Loscós (2021))<sup>10</sup> is used to assess whether shocks common to several economies, besides reducing inflation variability across countries, also boosted the synchronisation of inflation rates across advanced economies. According to the results obtained, periods with energy price shocks show more synchronised changes in headline and underlying inflation than the average historical inflationary episodes without energy price shocks (see Chart 5). Furthermore, this synchronisation is most marked in the most recent episode, which saw multiple global shocks converge.<sup>11</sup>

---

6 Labour market tightening can be seen through other variables, such as wage increases, and a labour supply shrinking for reasons not mitigated by wage rises (e.g. illness, retirement and declining migratory flows) (Leduc, Wilson and Zhao, 2023).

7 BIS (2023).

8 Borrillo, Cuadro-Sáez and Pérez (2022).

9 Cicarelli and Mojon (2010).

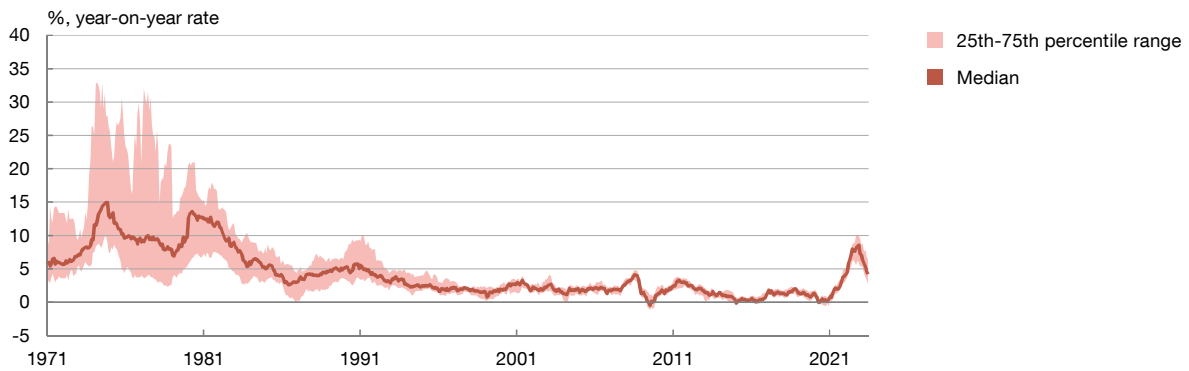
10 The indicator is the arithmetic mean of the simple correlation coefficients of all the advanced economy pairs considered. For more details, see Álvarez, Gadea and Gómez-Loscós (2021), who include a detailed study of inflation co-movements.

11 This evidence is consistent with that put forward by Álvarez, Gadea and Gómez-Loscós (2021), who show that inflationary episodes' degree of interconnectedness across countries was especially marked in the case of energy and food products. This could consequently be seen in headline inflation, while it is less pronounced in the components of underlying inflation.

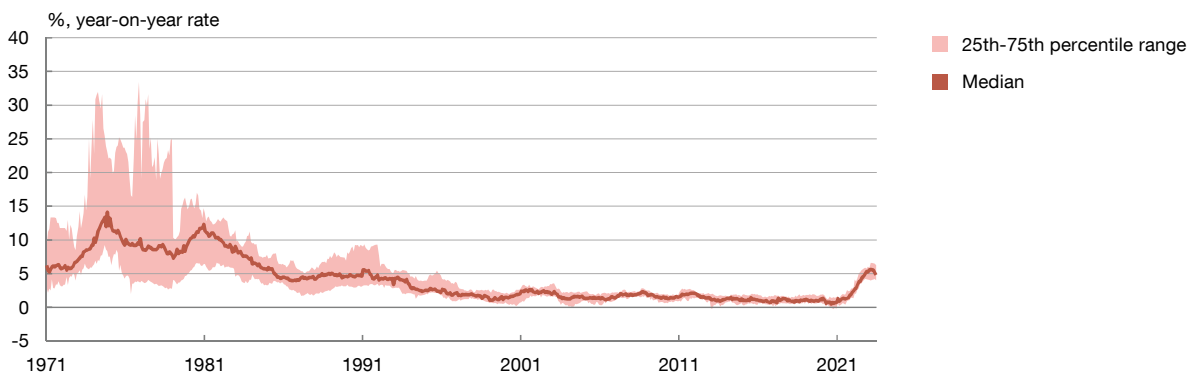
Chart 4

**Historical comparison of headline and underlying inflation**

4.a Headline inflation



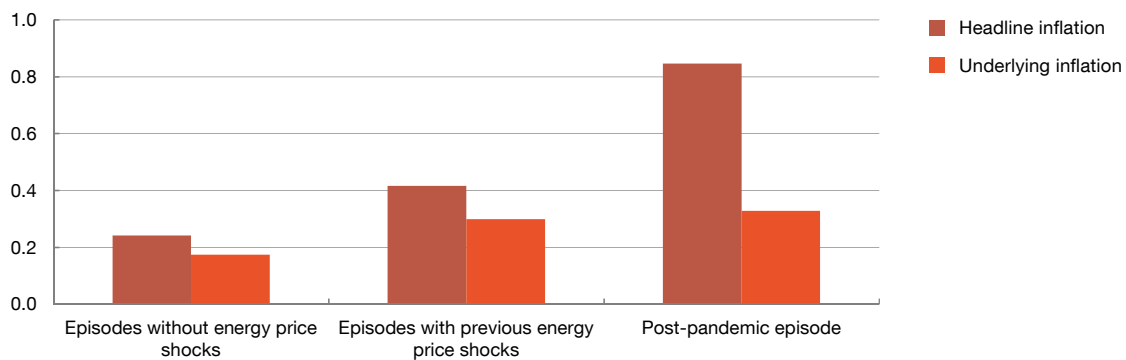
4.b Underlying inflation



SOURCES: OECD and Banco de España.

Chart 5

**Inflation synchronisation**



SOURCES: OECD and Banco de España.

However, underlying inflation did not become more synchronised during the recent inflationary episode relative to past energy price shocks. This evidence points to the persistence of factors affecting the underlying inflation rate that are unique to each country and whose relevance has not declined over time. More work is needed to better understand their nature.

## REFERENCES

- Álvarez, Luis J., María Dolores Gadea and Ana Gómez-Loscos. (2021). "Inflation comovements in advanced economies: Facts and drivers". *The World Economy*, 44(2), pp. 485-509. <https://onlinelibrary.wiley.com/doi/full/10.1111/twec.13053>
- Bank for International Settlements. (2023). "Navigating the disinflation journey". *BIS Annual Economic Report 2023*. <https://www.bis.org/publ/arpdf/ar2023e1.htm>
- Borralló, Fructuoso, Lucía Cuadro-Sáez and Javier J. Pérez. (2022). "Rising food commodity prices and their pass-through to euro area consumer prices". *Economic Bulletin - Banco de España*, 3/2022, Analytical Articles. <https://repositorio.bde.es/handle/123456789/22925>
- Ciccarelli, Matteo, and Benoît Mojon. (2010). "Global inflation". *The Review of Economics and Statistics* 92(3), pp. 524-535. <https://www.jstor.org/stable/27867556>
- Kilian, Lutz. (2009). "Not All Oil Price Shocks Are Alike: Disentangling Demand and Supply Shocks in the Crude Oil Market". *The American Economic Review* 99(3), pp. 1053-1069. <https://www.jstor.org/stable/25592494>
- Leduc, Silvain, Daniel J. Wilson and Cindy Zhao. (2023). "Will a cooler labour market slow supercore inflation?". *Federal Reserve Bank San Francisco Economic Letter*, 2013-18. <https://www.frbsf.org/economic-research/publications/economic-letter/2023/july/will-cooler-labor-market-slow-supercore-inflation/>

## How to cite this document

Ghirelli, Corinna, Teresa Sastre, Nicolás Bonino, Luis Julián Álvarez and Daniel Santabárbara. (2023). "The post-pandemic inflationary episode in advanced economies: a historical perspective". *Economic Bulletin - Banco de España*, 2023/Q4, 01. <https://doi.org/10.53479/33773>

Reproduction for educational and non-commercial purposes is permitted provided that the source is acknowledged.

© Banco de España, Madrid, 2023

ISSN 1695-9086 (online edition)