



BOX I.3:

Longer duration of high inflation

CPI inflation continues to be very high, in both the total measure and its core —non-volatile— component. On the one hand, this may be because the type, size and sequence of shocks that have affected inflation have been different than usual (“inherited” persistence). On the other, it is possible that upward shocks have generated more prolonged effects via internal propagation mechanisms (“intrinsic” persistence)^{1/}.

This box explores some hypotheses that could explain the longer duration of high inflation. Among them: (i) that the shocks that explained the increase in inflation were unusually large and consecutive. This would have contributed to compressing business margins, mitigating the initial impact of these shocks on prices, but making it more lasting; (ii) that second-round mechanisms —via indexation and inflation expectations of different agents— also contribute to slowing down the fall in inflation.

The longer duration of local inflation and its causes

A common way to measure inflation persistence is to estimate what is known as the “half-life” of shocks. That is, how long it takes for half of their effect on inflation to dissipate^{2/}. [Barrero et al. \(2023\)](#) show that the estimated half-life of core inflation shocks has increased considerably since the second quarter of 2022. In that time frame, it went from about six months to about twelve months. Initially, the greater persistence was more associated with goods inflation, but more recently it is services that account for the bulk of the increase. In fact, the latter has risen sharply since the end of 2022, and shows no signs of stabilizing (figure I.25). This methodology, while useful for formalizing the concept of the protraction of the inflationary problem, does not allow us to establish its root causes; in particular, whether these changes are the result of inherited or intrinsic persistence.

To assess the importance of the inherited persistence component in the longer duration of inflation, [Barrero et al. \(2023\)](#) estimate a monetary time series model that allows for changes in the dynamics of disturbances affecting the economy, and decomposes inflation into supply, demand, and monetary policy shocks. They find that supply shocks associated with problems in global supply chains and increases in commodity prices were unusually strong during the second and third quarters of 2022, but have been dissipating recently.

It is also observed that, since mid-2021, demand shocks have been significantly stronger and more frequent than usual, reflecting the successive demand stimulus measures. The upward revisions to private consumption show that demand pressures have been higher than previously estimated (Box I.2), and at the margin they have moderated more slowly. Overall, the shocks explaining the rise in inflation have been larger and more frequent (figure I.26), and with a longer half-life than usual.

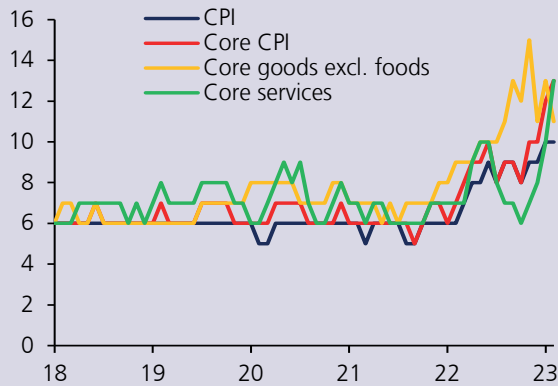
The behavior of business margins has also contributed to the high inflationary persistence. The sharp rise in costs during 2021 was only partially passed on through to prices, consistent with a marked compression of margins ([Box I.3 in June 2022 MP Report](#)). However, these margins have been recovering since the second quarter of 2022 (figure I.27), which is associated with a lower pass-through to prices of the most recent cost reductions ([Acevedo et al., 2023](#)). This explanation is the counterpart, for example, of the low degree of pass-through to prices of the recent significant exchange rate appreciation (Box I.4). In other words, the adjustment of margins mitigates the initial impact on prices of the different shocks, but tends to prolong their effects on inflation.

^{1/} For a discussion on the concepts of “intrinsic” and “inherited” inflationary persistence, see for example [Fuhrer \(2010\)](#).

^{2/} The “half-life” of the shocks is calculated using the roots of the polynomials of autoregressive models (see [Barrero et al., 2023](#)).



FIGURE I.25 AVERAGE LIFE OF SHOCKS TO THE CPI (months)



(*) Bands are percentiles of 25 and 75%.
Source: [Barrero et al. \(2023\)](#).

FIGURE I.26 ESTIMATED DEMAND SHOCKS (*) (standard deviations)

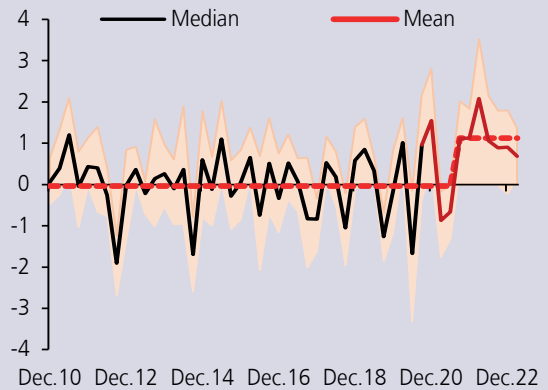
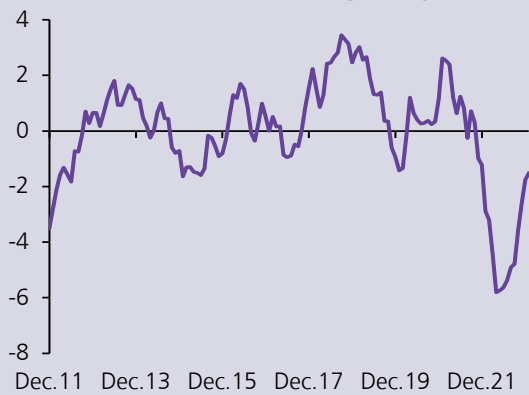


FIGURE I.27 CYCLICAL COMPONENT OF AGGREGATE MARGINS (three-month moving average, percent)



Source: [Acevedo et al. \(2023\)](#).

Finally, regarding the intrinsic part of persistence, second-round mechanisms could have contributed to the longer duration of high inflation. On the one hand, inflation expectations of firms and households have remained high for a prolonged period of time, which may be a mechanism that increases inflation persistence beyond what is consistent with its fundamentals ([Box V.1 in March 2022 MP Report](#)). As from March 2022, the Central Bank's inflation projections have factored in an additional persistence effect associated with this phenomenon. Some measures of inflation expectations have been returning to the 3% target, suggesting that the relevance of this second-round mechanism is diminishing at the margin. On the other hand, although there is no clear evidence of a greater degree of indexation in the items most sensitive to past inflation, the fact that it is high also slows down the convergence to the 3% target.

Conclusions

Prolonged high inflation has been the main focus of concern for the Central Bank in recent quarters. The reasons behind this include the size and sequence of demand and supply shocks, the dynamics of business margin adjustments and second-round effects. In the central scenario of this Report, the upward revision of headline and core inflation is explained to a greater extent by a smaller adjustment in the gap and private consumption. The elements discussed in this box, however, motivate some of the scenarios of sensitivity and risk of higher inflation levels considered in this Report.