

Do Inflation Expectations Become More Anchored during a Disinflation Episode? Evidence for Euro Area Firms[†]

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Post-COVID-19 adjustments, the Russian full-scale invasion of Ukraine, and other factors led to a dramatic surge in inflation in the euro area. The European Central Bank's (ECB's) tight monetary policy contributed to a steep disinflation trajectory: Inflation fell from 10.6 percent in October 2022 to 2.2 percent in November 2024. However, since experiences of high inflation could have a scarring effect (Malmendier and Nagel 2016), it remains to be seen how the inflation cycle has affected the anchoring of inflation expectations. This issue is of first-order importance because “fluid” expectations can amplify future inflationary shocks and thus can result in another inflation spike, which would undermine the credibility of the central bank. To shed more light on the matter, we examine the evolution of firms' inflation expectations in the euro area during the recent disinflation episode. We document clear progress in bringing inflation expectations toward the target, but this process has not been completed yet, and thus policymakers should proceed with caution.

I. Survey on the Access to Finance of Enterprises

To analyze the evolution of inflation expectations anchoring, we use a novel survey covering firms' inflation expectations in the euro area. This survey is a new module of the Survey on the Access to Finance of Enterprises (SAFE), which is run by the ECB and the European Commission. From 2009 to 2023, the survey was conducted biannually and focused on firms' financial and economic conditions. The survey is administered by phone (for first-time participants) and online, and firms are randomly selected from several business registers stratified by country, sector, and firm-size class. Survey weights ensure that the sample is representative of the distribution of employment across countries, sectors, and firm-size classes.

The survey was enriched with questions on inflation expectations in June 2023 and has been run quarterly with these questions since December 2024. The questions cover inflation expectations at the one-, three-, and five-year horizons. The unique strengths of the SAFE include its representativeness, consistent measurement across all countries in a major monetary union, and elicitation of firms' inflation expectations at short- and longer-term horizons. The survey also includes additional questions on the risks around the five-year inflation outlook as well as on firms' plans about their prices, wages, nonlabor costs, and employment decisions that we don't use in this paper. Baumann et al. (2024) provide more details.

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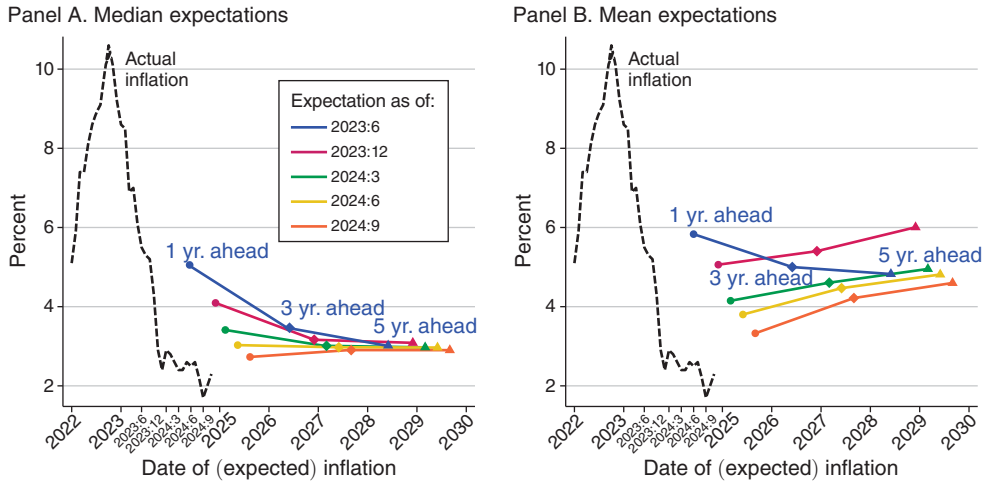


FIGURE 1. THE EVOLUTION OF FIRMS' INFLATION EXPECTATIONS IN THE EURO AREA

Notes: This figure plots firms' median and mean euro area inflation expectations by one-, three-, and five-year-ahead horizons and survey dates. Medians are computed by linear interpolation of the mid-distribution function. All statistics are computed using survey weights.

II. Average Short-Run Inflation Expectations during the Disinflation

Figure 1 shows the dynamics of firms' inflation expectations at the one-, three-, and five-year horizons throughout the disinflation episode. We examine five survey waves covering an 18-month period from June 2023 through September 2024 using survey-weighted medians (computed by linear interpolation of the mid-distribution function; panel A) and means (panel B) as our measures of average expectations.

Firms' one-year-ahead median inflation expectations stood at 5.0 percent in June 2023, when actual inflation was 5.5 percent.¹ As disinflation progressed and inflation approached 2 percent in 2024, one-year-ahead median inflation expectations declined to 2.7 percent by September 2024. Mean one-year-ahead inflation expectations also declined steadily. These results suggest that the disinflation episode helped bring inflation expectations closer to the target.² Importantly, lower inflation expectations are in turn disinflationary due to their effect on firms' price-setting behavior (Coibion, Gorodnichenko, and Ropele 2020).

III. Did Expectations Become More Anchored during the Disinflation?

Is a convergence of average expectations sufficient for central banks to claim victory over high inflation? While short-run expectations close to target are crucial for a successful disinflation, a large literature argues that *anchored inflation expectations* are instrumental for the successful conduct of inflation-targeting monetary policy. In the following, we use the SAFE data to assess how the anchoring of inflation expectations has changed over the disinflation cycle.

¹ Inflation in the euro area is measured by the change in the Harmonized Index of Consumer Prices (HICP) compiled by Eurostat and national statistical institutes.

² Figures 1 and 2 in the Supplemental Appendix show that the decline in short-term inflation expectations is broad-based across firm-size classes, sectors, and countries.

We consider three notions of anchoredness in inflation expectations (Kumar et al. 2015). Although there is no unique definition of anchored expectations, these three notions capture distinct aspects of anchoring, which we can analyze with our survey data: (i) firms expecting inflation to converge to the inflation target over the longer run; (ii) limited dispersion in expectations; and (iii) the insensitivity of longer-run expectations to short-term expectations.

A. Longer-Term Inflation Expectations Have Fallen Slightly

The first notion of anchored inflation expectations posits that expectations are anchored if agents, on average, believe that inflation will approach the central bank's target in the medium to long run, even when current inflation and short-run expectations deviate. This aligns with central banks' policy objectives, particularly the ECB's medium-term inflation-targeting framework (ECB 2021).

Panel A of Figure 1 shows that even in 2023, when inflation still was far above target, median longer-run inflation expectations stood at 3.0 percent, significantly lower than short-run expectations. This downward-sloping term structure indicates that the median firm indeed expected inflation to decline toward the 2 percent target. Over time, median five-year-ahead inflation expectations fell slightly from 3.0 percent in June 2023 to 2.9 percent in September 2024. Despite the gap to the 2 percent inflation target of the ECB, the continuous decline in median longer-run inflation expectations suggests convergence over time. Moreover, survey biases may warrant some caution in interpreting levels of expectations in isolation.

At the same time, mean inflation expectations (panel B of Figure 1) paint a more nuanced picture. The profile of the term structure of mean expectations in June 2023 conveyed that firms project inflation to fall but not as dramatically as suggested by median expectations. More importantly, the slope of the term profile for mean expectations flipped from negative to positive. For example, in December 2023, average inflation expectations predicted a rise of inflation from roughly 5 percent in 2024 to almost 6 percent in 2025. This upward-sloping profile has been shifting down over time, and the inflation projected for 2030 fell to 4.5 percent.

While this development suggests that the anchoring of inflation expectations has strengthened, the difference between median and mean expectations reflects the skewness of inflation expectations, particularly the mass of firms with very high inflation expectations. This warrants attention, as Reis (2021) documents that the right tail in the distribution of inflation expectations can be a leading indicator of future increases in inflation and a higher sensitivity of inflation to incoming information and shocks.

For comparison, professional forecasters in the euro area project inflation to converge to the 2 percent inflation target in 2025 and stay there for years to come (Supplemental Appendix Figure 4). There is also little difference between their median and mean inflation expectations. The contrast between firms and professional forecasters underscores the value of surveying firm managers for informing policymakers about the inflation outlook.

B. Disagreement in Inflation Expectations Has Not Fallen Further

The second notion of anchored inflation expectations posits that dispersion in expectations should be low under anchored expectations, as anchoring for all agents implies low disagreement about expected inflation outcomes.

Figure 2 plots disagreement over time, measured as the standard deviation or interquartile range of firms' inflation expectations for each of the three horizons. In general, disagreement is higher for longer horizons. Since 2023, one-year-ahead disagreement has modestly declined. However, relative to median expectations, short-run disagreement has increased (Supplemental Appendix Figure 3). Disagreement at the three- and five-year-ahead horizons has remained stable. Taken together, these observations suggest that firms' inflation expectations have not become more anchored during the disinflation.

Again, disagreement among professional forecasters is not only much lower but also decreasing over time (Supplemental Appendix Figure 5). In effect, their disagreement largely converged to the pre-COVID-19 levels.

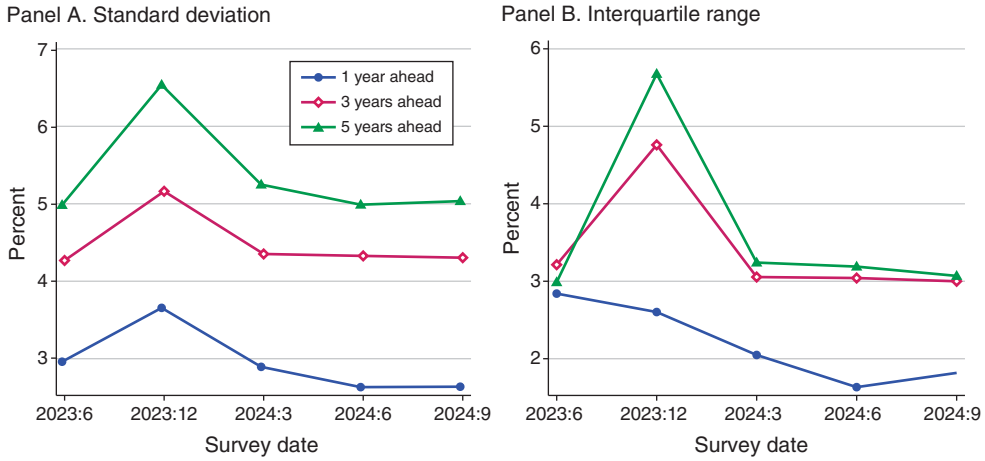


FIGURE 2. DISAGREEMENT IN FIRMS' INFLATION EXPECTATIONS

Notes: This figure plots the standard deviation and the interquartile range of firms' euro area inflation expectations at the one-, three-, and five-year-ahead horizons for each survey date. Quartiles are computed by linear interpolation of the mid-distribution function. All statistics are computed using survey weights.

C. Sensitivity of Longer-Run Inflation Expectations Has Increased

The third notion of anchored inflation expectations postulates that firms' longer-run expectations, which should be mostly pinned down by the inflation target, should not be related to their short-run inflation expectation, which is subject to transitory business cycle shocks. This implies a low correlation between short- and longer-run expectations in the cross-section of firms.

Figure 3 presents binned scatterplots relating individual firms' one-year-ahead inflation expectations to their three- and five-year-ahead expectations in June 2023 and September 2024. The sensitivity of longer-run to short-run expectations increased between surveys: The regression coefficient increased from 0.38 (SE = 0.01) to 0.67 (SE = 0.01) for the case of five-year-ahead expectations, with similar increases for three-year-ahead expectations. That is, firm managers projecting inflation in 1 year to be 1 percentage point higher than other firms expect, on average, inflation in 5 years to be 0.67 percentage points higher. Similarly to the disagreement among firms documented above, the heightened sensitivity of longer-run inflation expectations suggests that firms' inflation expectations have not become more anchored.

For comparison, when we regress five-year inflation expectations on one-year inflation expectations for professional forecasters, we find that the estimated slope was relatively stable at 0.15 (Supplemental Appendix Figure 6). Furthermore, as of 2024:III, the estimated slope is not statistically different from zero.

IV. Conclusion

Inflation in the euro area has fallen rapidly. However, there are signs that the battle is not over yet. Unlike professional forecasters, firms' managers appear to harbor concerns about future inflation. There is a thick tail of managers expecting inflation to increase over the longer run. Managers show much disagreement in their outlook and especially so for longer horizons. Finally, there is a strong correlation between long-term and short-term inflation expectations. These indicators of limited anchoring in inflation expectations may warrant attention during the "last mile" of the disinflation and suggest that more time is needed to fully align inflation expectations with central bank objectives.

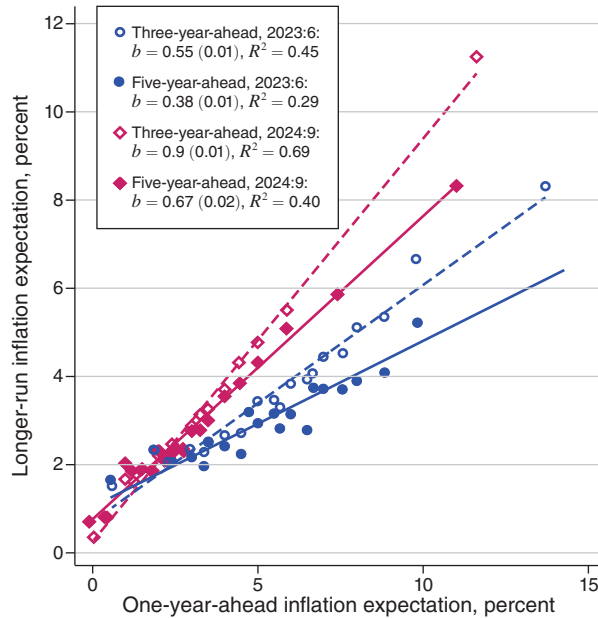


FIGURE 3. TIME-VARYING SENSITIVITY OF LONGER-TERM INFLATION EXPECTATIONS

Notes: This figure plots binned scatterplots relating firms' one-year-ahead inflation expectations to their three-year-ahead (hollow markers) and five-year-ahead expectations (full markers) for the surveys in June 2023 (blue) and September 2024 (red). The lines represent linearly fitted lines with regression statistics reported in the respective legends.

Our analysis highlighting the differences between firms' and professional forecasters' inflation expectations underscores the importance of monitoring the expectations of all types of economic agents. Therefore, the access to firms' inflation expectations in the euro area through the SAFE is key for a comprehensive assessment of where inflation expectations are in the economy.

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