Seemingly Anchored Inflation Expectations*

Stefan Nagel†
University of Chicago,
NBER, CEPR, and CESifo

Ulrike Malmendier‡
UC Berkeley
NBER, CEPR

August 8, 2025

I. Extended Abstract

A key question for monetary policy is whether inflation expectations are anchored. If inflation expectations are well-anchored, then long-term inflation expectations should always stay close to the inflation target that monetary policy makers are aiming for. As the FOMC puts it, "longer-term inflation expectations that are well anchored at 2 percent foster price stability and moderate long-term interest rates and enhance the Committee's ability to promote maximum employment in the face of significant economic disturbances."[1] Accordingly, many central banks have adopted explicit inflation target in recent decades with the hope that this would help get inflation expectations anchored. When inflation expectations are well-anchored, it is seen as a sign of the public's trust in their central bank's ability to deliver low inflation, regardless of occasional bursts in inflation rates.

The sharp rise in inflation during the post-COVID years has brought renewed attention to the question whether inflation expectations are well-anchored. Empirically, a common approach to assess anchoring is to examine the sensitivity of long-term inflation expectations to inflation news. For example, based on the small response of long-term inflation expectations to the post-COVID rise in inflation, Williams (2022) concludes that inflation expectations remained well anchored. Relatedly, Bundick, Smith, and Van der Meer (2024) look at the response of long-term inflation expectations to high-frequency news and find similar sensitivity levels post- and pre-COVD, which they interpret as an indication that inflation expectations remained well-anchored.

In this paper, we challenge the interpretation of standard measures of anchoring. We argue that, to a large extent, seemingly anchored long-term inflation expectations reflect personal experiences with past inflation realizations, irrespective of individuals' trust in the central bank's ability to control inflation. As a result, repeated or prolonged periods of inflation can result in significant movement in long-term inflation expectations even when the trust in the central bank and quality of their communication remains unchanged.

*tbc

†University of Chicago, Booth School of Business, 5807 South Woodlawn Avenue, Chicago, IL 60637, e-mail: stefan.nagel@chicagobooth.edu

‡University of California Berkeley, e-mail: ulrike@econ.berkeley.edu

1. See the FOMC's Statement on Longer-Run Goals and Monetary Policy Strategy in `www.federalreserve.gov/monetarypolicy/files/fomc_longerrungoals.pdf`.

Our findings are consistent with and expand on Reis (2022) and Coibion and Gorodnichenko (2025) who point to measures of disagreement and uncertainty to argue that the existing evidence does not support well-anchored inflation expectations.

Our analysis proceeds in three steps.

In the first part, we show personal experiences of past inflation have significant predictive power in explain both short-term and long-term inflation expectations. That is we extend prior evidence from Malmendier and Nagel (2016) for short-term inflation expectations to long-term expectations, and more recent sample periods including the COVID and post-COVID years. The results suggest that the experience-effects framework is well-suited to address the question of anchoring.

In the second step, we show that low news-sensitivity estimates as have been found in prior literature are consistent with the experience-effect model. We lay out the mechanism driving news-sensitivity (or lack thereof), and we show that, under experience-based learning news sensitivity remains low during bursts of high inflation even when inflation, expectations are not anchored.

In the next step, we show that the explanatory power of past experiences for inflation expectations challenges the interpretation of previous anchoring analyses in several ways. First, it implies that expectations are tied to personal experiences rather than central bank communication and credibility. That is, it depends on individual lifetime histories rather than the effectiveness of monetary policy whether or not long-term inflation expectations are close to the central-bank target. Second, experience-based expectations formation allows for large differences in inflation expectations by age group, which we observe empirically, but which are inconsistent with the notion well-anchored expectations. Third, experience-based learning can explain why individuals news sensitivity does not go to zero when central bank communication and central bank credibility improves. We show empirically that the reliance on experiences did not decrease with the adaption (and modification) of inflation targets or changes in central bank communication.

In the final analysis, we expand on the implications arising from the proposed interpretation of the empirical evidence around (seemingly) anchored expectations, namely the consequences of a hypothetical repeated or prolonged burst of inflation. Experience-based learning is consistent with the continued stability in longterm inflation expectations after COVID since, during the post-COVID inflation, individuals so far experienced one relatively short burst of inflation. The reaso is that, under the learning-from-experience model, the magnitudes of inflation experienced during this episode are not sufficient to generate much movement in long-term inflation expectations. But what if another, bigger burst of inflation followed the recent one, akin to what happened in the 1970s? We show with simulations that the combined effect with the first wave of post-COVID inflation would generate a much more substantial rise in long-term inflation expectations.

In conclusion, the paper investigates the anchoring question through the lens of an experience-based learning framework. The documented empirical success of the learning-from-experience model is largely inconsistent with the notion that long-term inflation expectations are well-anchored. Our evidence and re-interpretation of existing sensibility estimates imply significant vulnerability to extended exposure of high inflation rates.

II. Additional Details

Our empirical analysis employs the experience-effect approach first proposed in Malmendier and Nagel (2016) and show that experience-based learning continues to explain inflation expectations

in recent years, following the end of the sample period used in Malmendier and Nagel (2016). In addition, we show that experience-based learning also explains five-year inflation expectations.

Malmendier and Nagel (2016) (MN) focus on one-year inflation expectations in household survey data from the Michigan Survey of Consumers, find that inflation expectations are strongly related to individuals life-time experiences of inflation. MN work with an adaptive learning model where each birth-year cohort of individuals estimates, based on an AR(1) perceived law of motion, the long-run mean and short-run persistence of inflation from data experienced during their lifetimes so far, and with higher weight on recently experienced data. This model is able to explain very well the data on cohort-level inflation expectations. For example, the experience-based model goes a long way in explaining why younger individuals (below age 40) had around three percentage points higher one-year inflation expectations than older individuals around 1981 following the Great Inflation in the 1970s, and why older individuals had higher inflation expectations than younger people in the two decades leading up to the COVID period.

We start our analysis by showing that the experience-based learning model continues to have high explanatory power out-of-sample, in data beyond 2009, the end of the sample in MN, with similar parameter estimates for the learning gain and for the pass-through from experience-based expectations to measured survey expectations as in the original sample. Figure I shows the actual expectations (dots) and the forecasts implied by the learning-from-experience model (solid lines) aggregated for three age groups. The figure underscores the continuing good explanatory power after the end of the original sample in 2009. We also find that controlling for the effects of political partisanship in expectations that has become more pronounced in recent years further enhances the similarity of the out-of-sample estimates with the original estimates.

MN focused on one-year expectations data in their empirical analysis. For the anchoring question, long-term expectations are most relevant. Here we present the new result that 5-year inflation expectations are also consistent with the learning-from-experience framework. Calculating the five-year forecast implied by each cohort's experience-based estimates of the long-run mean and short-run persistence of inflation, we find that this experience-forecast explains cohort-level inflation expectations about as well as one-year expectations, and with similar learning gain and pass-through parameters. This new evidence on long-term expectations suggests that the learning-from-experience model is well suited for analyzing the inflation expectations anchoring question.

However, when long-term inflation expectations are formed based on experience, expectations also can appear relatively well-anchored when in fact they are not. Specifically, the observed sensitivity of long-term inflation expectations to news can be low, but at the same time the risk that inflation expectations could deviate far from the central bank's inflation target in the future could still be high. This is relevant for the interpretation of empirical estimates of inflation expectations anchoring in the literature.

In the learning-from-experience model, the sensitivity of 5-year inflation expectations to news can come from two sources. First, the medium-term component of 5-year inflation expectations can be sensitive to news when individuals anticipate, based on their past experiences, that inflation will have high short-run persistence. Based on our estimated model, we find that the younger generation moved from virtually zero perceived persistence prior to COVID to perceived quarterly autocorrelation of around 0.4 after the post-COVID inflation, which is around the same level that the older generation had for a long time due to the lingering experiences of the high-persistence 1970s in their memories. Nevertheless, unless perceived short-run persistence moved much higher, this is not the main source of news-sensitivity of 5-year inflation expectations.

Instead of perceived short-run persistence, most of the news-sensitivity comes from changes of the perceived long-run mean of inflation in response to news. In the learning-from-experience

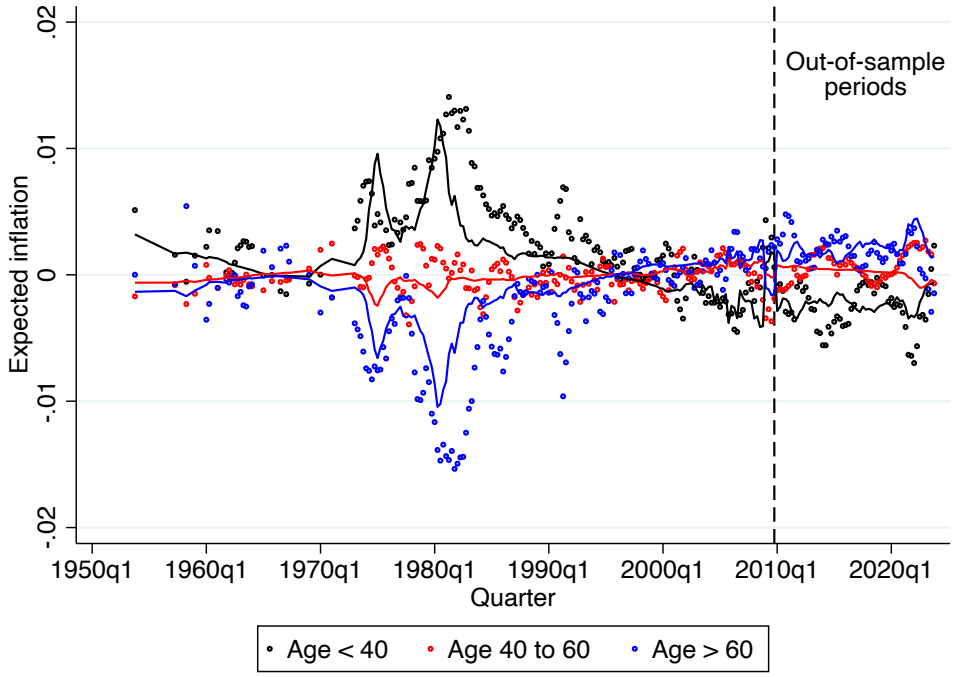


FIGURE I
Comparison of Learning-from-Experience Forecasts with One-Year Inflation Expectations from the Michigan Survey of Consumers

Four-quarter moving averages for individuals below age of 40, between 40 and 60, and above 60, shown as deviations from the cross-sectional mean expectation. The solid lines show the learning-from-experience forecast multiplied with the estimated pass-through coefficient. The dashed line indicates the end of the sample in MN's data set.

model, this perceived long-run mean in turn is a weighted average of experienced life-time inflation rates where the weight on the last quarterly inflation rate is roughly between around 1% for the oldest age groups and around 3% for the young. The incremental effect of one observation of current inflation news on this weighted average is small. We show, based on the estimated model, that low news-sensitivity estimates of 5-year inflation expectations as they have been found in the literature are quantitatively consistent with the learning-from-experience model. Moreover, in this model, the sensitivity also does not change when the economy goes through a high inflation period, which means that it is consistent with the evidence in Bundick, Smith, and Van der Meer (2024) even though inflation expectations are not anchored. At the same time, the learning-from-experience model also explains why the sensitivity has not gone to zero as one may have hoped if the central bank target is well communicated and credible.

However, low news-sensitivity does not imply that long-term inflation expectations are well-anchored. Whether inflation expectations stay in a close neighborhood of the central bank's inflation target depends on the path of inflation that individuals experience. Prolonged periods of substantial inflation can generate big movements in experience-based long-term inflation expectations. During the post-COVID inflation, individuals so far experienced one relatively short burst of inflation. In the learning-from-experience model, the magnitudes of inflation experienced during this episode are not sufficient to generate much movement in long-term inflation expectations. The fact that 5-year

inflation expectations in the Michigan Survey increased only by a small amount in response to the post-COVID inflation is therefore consistent with the learning-from-experience model. But what if another, bigger burst of inflation followed the recent one, akin to what happened in the 1970s? We show with simulations that the combined effect with the first wave of post-COVID inflation would generate a much more substantial rise in long-term inflation expectations.

By the same token, the learning-from-experience model is also consistent with the fact that 5-year inflation expectations had become a lot more stable in the decades leading up to the COVID period. This is explained by the fact that realized inflation had relatively low volatility and few persistent deviations from the central bank target. When individuals experience such data, their long-term inflation expectations will be stable over time, even though they are not well anchored.

References

Bundick, Brent, Andrew Smith, and Luca Van der Meer, 2024, "Maintaining the Anchor: An Evaluation of Inflation Targeting in the Face of COVID-19," Working paper, Federal Reserve Bank of Kansas City.

Coibion, Olivier, and Yuriy Gorodnichenko, 2025, "Inflation, Expectations and Monetary Policy: What Have We Learned and to What End?," Working paper, National Bureau of Economic Research.

Malmendier, Ulrike, and Stefan Nagel, 2016, "Learning from Inflation Experiences," *Quarterly Journal of Economics* 131, 53–87.

Reis, Ricardo, 2022, "Losing the Inflation Anchor," *Brookings Papers on Economic Activity*.

Williams, John C, 2022, "A Steady Anchor in a Stormy Sea," Working paper, Remarks at SNB-FRB-BIS High-Level Conference on Global Risk, Uncertainty, and Volatility, Zurich, Switzerland.