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Anchoring of inflation expectations: has
past progress paid off?

Tirupam Goel and Kostas Tsatsaronis

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Anchoring of inflation expectations: has past progress paid off?

Key takeaways

- *In the decade before the pandemic, inflation expectations became less volatile worldwide, as well as more consistent with inflation targets and less sensitive to inflation surprises.*
- *This progress has paid off for many economies during the past year's surge in inflation: long-term expectations have remained largely anchored, but with notable exceptions.*
- *Anchored expectations provide room for monetary policy manoeuvre, but how strongly they remain anchored will depend on central banks keeping inflation in line with their stated objectives.*

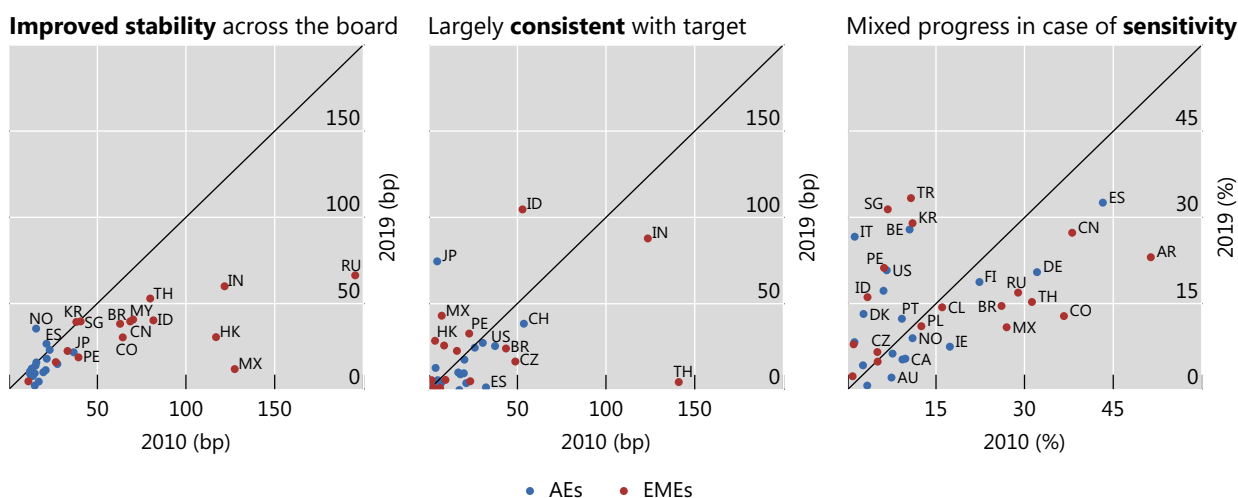
Inflation has risen in economies around the world. While the debate revolves around inflation drivers, such as supply bottlenecks and shortages, pent-up demand and the conflict in Ukraine, an important determinant of the inflation trajectory will be how far inflation expectations remain anchored. Expectations anchored close to the inflation objective will support the efforts of monetary policymakers to manage the business cycle. But if expectations become unanchored, wage-price spirals may force central banks to tighten policy early in order to convince price-setters that inflation will remain under control (D'Acunto and Weber (2022)). In fact, both academics and central bankers have stressed the need to keep an eye on expectations.

In this bulletin, we ask how firmly inflation expectations are anchored in several advanced (AE) and emerging market economies (EMEs). We first look back to assess the progress made in these economies before the pandemic and then examine whether that progress has paid off during the past two years. In doing so, we use expectations derived from surveys of professional forecasters. In addition to helping shape the inflation outlook for price-setters, these surveys are available on a consistent basis for many economies, letting us gauge the behaviour of inflation expectations over a longer period of time.

Looking back: three metrics for anchoring

Taken together, three properties of inflation expectations encapsulate the notion of anchored expectations, as understood by central bankers (eg Bernanke (2007), Schnabel (2021)) and researchers (eg Bems et al (2021), Moessner and Takáts (2020), Mehrotra and Yetman (2018)). The first property is *stability*, or the low variability of expectations. The second is *consistency* of expectations with the policy goal. The third is low *sensitivity* to surprises in current inflation, ie economic agents with anchored expectations "see through" temporary jumps in inflation, either because these fluctuations arise from short-lived economic drivers or because the economic agents trust that the central bank can lean effectively against inflationary pressures.

We quantify these three properties using an empirical model, as set out in the online appendix. In essence, we estimate a three-variable time-series model of inflation, together with short-term expectations (STEs, 12-month horizon) and long-term expectations (LTEs, six to 10 years horizon), over a 15-year window. We measure stability as the volatility of LTEs that is not captured by the estimated joint dynamics of the three variables, namely by the in-sample variance of the difference between actual LTEs and the fitted value of LTEs based on the model. This metric captures the total effect that the various shocks in the



¹ Metrics estimated over a 15-year windows with 2010 and 2019 being the endpoints of the windows. For economies without an inflation target, we consider the mean LTE as the benchmark.

Sources: Consensus Economics; national data; BIS calculations.

model have in terms of perturbing LTEs. Consistency is measured by the absolute value of the difference between the model-implied steady-state value of LTEs and the central bank’s inflation objective.

Depending on how the policy framework has been specified in each country, we determine the objective as the inflation target or the mid-point of the target range. For the few economies without a target, we consider the mean LTE before the pandemic as the benchmark. The metric abstracts from the short-lived deviations of expectations from the target and tests whether they gravitate towards the latter.

Finally, we measure sensitivity by the share of the variance of projections of LTEs over a two-year horizon that is attributed to inflation shocks. This metric helps identify the degree to which an unexpected change in inflation is passed on to LTEs. Note that we compute the three metrics using LTEs because STEs are by nature more sensitive to shocks and, hence, less useful as a gauge for anchoring.

Graph 1 distills the progress made along the three metrics of anchoring during the decade before Covid-19. Specifically, we compare the values of these metrics as of 2010 (ie model fitted on 1996–2010 data) with those as of 2019 (ie model fitted on 2005–19 data) for about 20 AEs and 20 EMEs (subject to data availability).

Expectations have become more stable in practically all these economies (Graph 1, left-hand panel), as reflected in most of them lying below the 45-degree line. And while expectations have always been relatively more stable in AEs, EMEs have made substantial progress. To be sure, the variability of expectations in Russia and India remained higher in 2019 than in other economies, but it was still down by half from the value recorded by these countries in 2010.

In most economies, expectations were better aligned with central banks’ inflation targets in 2019 than they were in 2010 (Graph 1, centre panel). In fact, LTEs are projected to stay within 50 basis points from the inflation target (or the range mid-point) in all but a handful of jurisdictions, and certainly within the target range in all economies that have one.

The picture is more mixed when it comes to the responsiveness of expectations to realised inflation. On average, inflation surprises accounted for only about 15% of LTE volatility as of 2019. This share is comparable with that recorded in 2010 (Graph 1, right-hand panel) but, given the decline in LTE volatility in almost all countries during this period (recall the left-hand panel), this implies that the impact of current inflation on LTEs has waned. However, for about a dozen countries, sensitivity did increase during the last

decade, or it remains relatively high. Interestingly, there are no systematic differences between AEs and EMEs for this metric: relative to their own track records, there are better and worse performers in both sets of countries.

The analysis in this section suggests that inflation expectations did become better anchored in the decade prior to Covid-19. While this overall assessment may not hold in every economy, or with respect to every anchoring metric, there has been broad-based progress. This is probably due to the greater credibility and robustness of monetary policy frameworks. Indeed, empirical evidence points to a link between better anchored expectations and the adoption of inflation targeting (eg Eichengreen et al (2020)) and more effective central bank communication (eg Coibion et al (2020)), among other features of monetary policy frameworks.

Anchoring of expectations during the Covid-19 crisis

A host of pandemic-led economic shocks and unprecedented policy responses may have affected how expectations behave, undermining earlier progress in their anchoring. In this section we investigate whether this is the case, using metrics that are more suited than those used above for detecting signs of de-anchoring in real time.

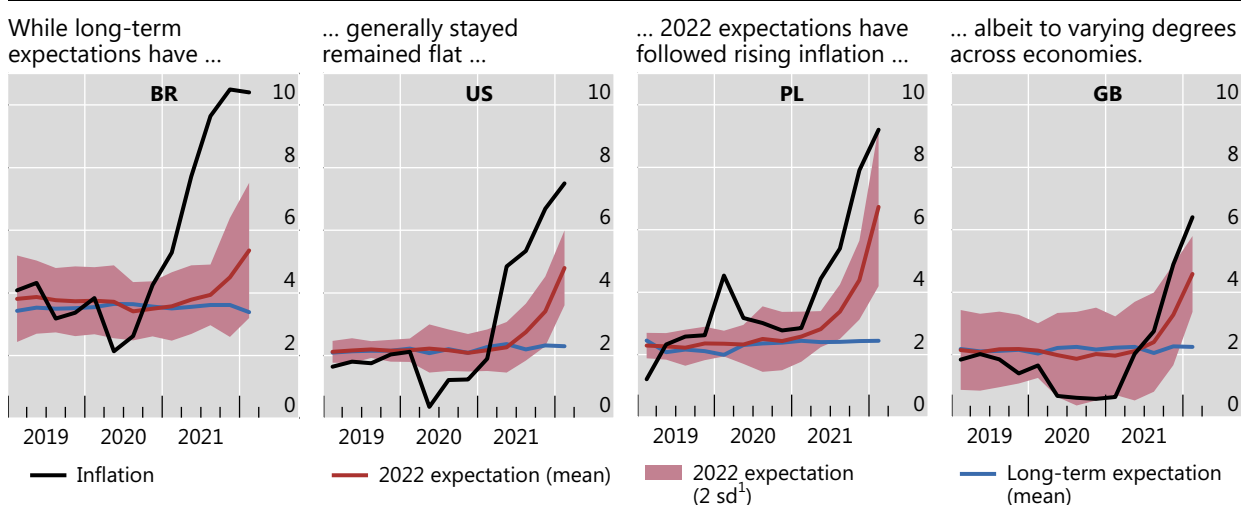
Graph 2 shows how short- and long-horizon expectations have evolved for a selection of countries since the start of the pandemic. Expectations for the year 2022 (red line) have followed rising inflation (black line), albeit not fully and to a differing degree across countries. Short-term expectations have been less sensitive in Brazil and the United States, but more so in Poland and the United Kingdom. Still, and remarkably, LTEs remain relatively insensitive to inflation (blue line), reflecting the view of professional forecasters that current increases in inflation are temporary and that inflation is likely to revert to pre-pandemic levels over time.

That STEs have increased more sharply than LTEs is confirmed more generally (Graph 3, first panel). For most economies, STEs were higher in January 2022 than at end-2019, in several cases by more than 1 percentage point. By contrast, the change in LTEs is less than 50 bp in almost all countries, and there is a relatively even split between countries with higher and those with lower LTEs. The stability of LTEs in the face of rising inflation and higher STEs is in line with the general pre-pandemic progress in anchoring expectations.

Expectations for 2022 have risen somewhat but long-term expectations are stable

In percentage points

Graph 2



Latest observation is January 2022. ¹ sd = standard deviations ie dispersion across forecasters.

Source: Consensus Economics.

Short-term expectations tracked inflation, but long-term expectations remain generally anchored

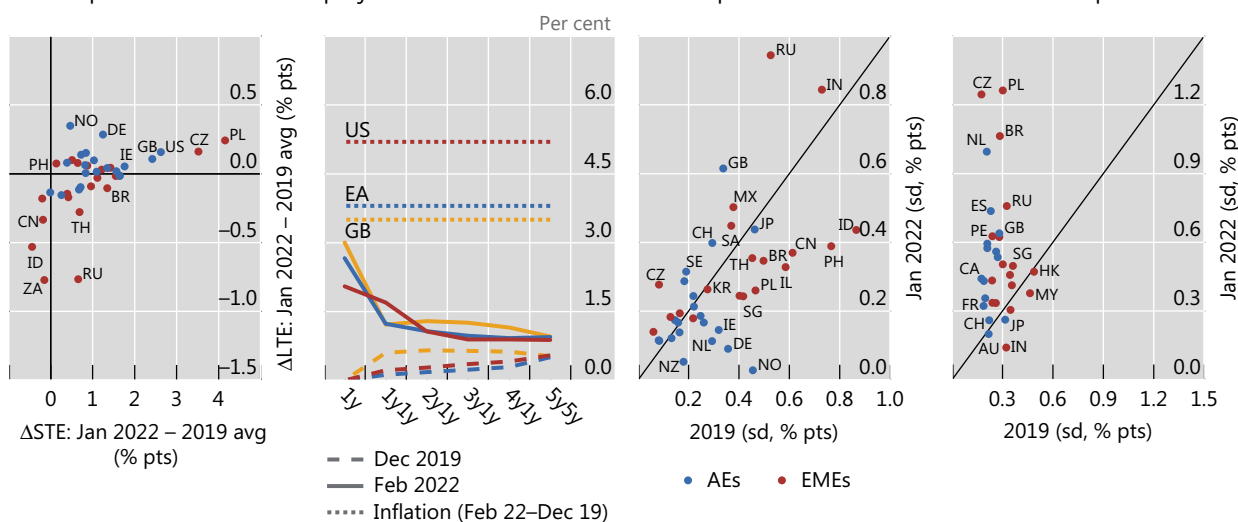
Graph 3

Muted change in long-term expectations ...¹

... suggests that inflation is projected to wane²

Less disagreement in long-term expectations ...³

... but there is more for short-term expectations³



Latest observation is January 2022. ¹ STE = short-term expectations, LTE = long-term expectations. ² Inflation expectations based on inflation swap prices. 2y1y, for example, means expected inflation during the one-year period two years from now. ³ Disagreement as measured by the standard deviation across forecasters.

Sources: Consensus Economics; Bloomberg; BIS calculations.

The term structure of market-based expectations (ie expected inflation at different horizons derived from inflation swaps) in the euro area, the United Kingdom and the United States supports the views of the surveyed forecasters that current increases in inflation are likely to subside. We note that the increase in LTEs between December 2019 and February 2022 is less than 50 bp (Graph 3, second panel), despite an increase in inflation that exceeds 3 percentage points (dotted flat lines). The change in STEs is more pronounced but also below current levels of inflation.

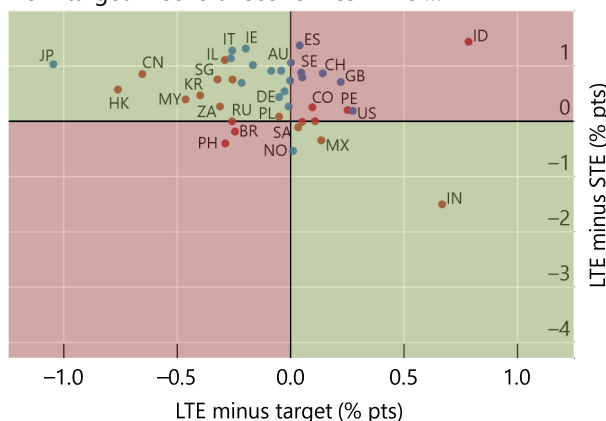
Another gauge of the tightness of forecasters' expectations of inflation is the (lack of) disagreement across surveyed analysts at a given point in time. For more than half the countries, the dispersion of LTEs across responders has declined during the pandemic (Graph 3, third panel), which combined with limited movement in average LTEs means that forecasters' views are in tighter alignment around a stable long-term inflation scenario. By contrast, disagreement among respondents on STEs has increased (Graph 3, fourth panel), arguably reflecting rising uncertainty about current inflation drivers, but possibly also serving as an early indication of some de-anchoring of expectations among certain observers.

Looking ahead: some lessons

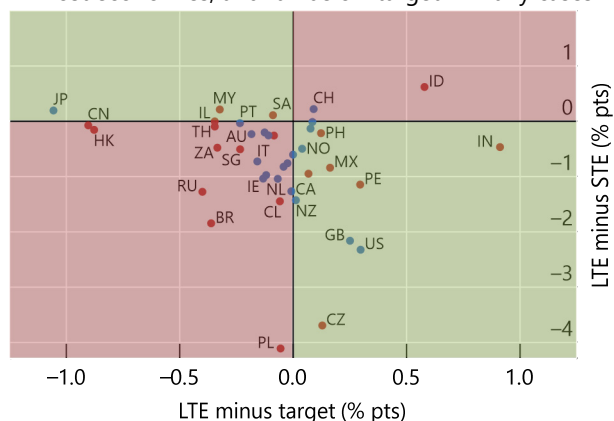
Broad progress in the anchoring of inflation expectations during the decade before Covid-19 seems to be paying dividends in the post-pandemic landscape. Despite the sharp jump in recorded inflation over the past 12 months, long-term expectations have remained flat for most of the economies in our analysis. This should provide central banks with room for manoeuvre as they respond to the challenge of strong pressure on prices amid an uneven recovery. Yet, going forward, this policy space will depend on how far policymakers succeed in confronting rising inflation, hence locking in their pre-pandemic gains in forming expectations.

The space available to policymakers in dealing with a surge in prices depends on whether the public expects a trajectory for inflation that is compatible with the central bank's objective. In Graph 4, we compare the difference between LTE and the inflation target on the horizontal axis with the term structure

In January 2021, inflation was expected to increase away from target in several economies while ...



... in January 2022 the expectation is for inflation to wane in most economies, and fall below target in many cases



¹ STE = short-term expectations, LTE = long-term expectations. Red-shaded quadrants indicate cases where $LTE > STE$ and $LTE > target$, or $LTE < STE$ and $LTE < target$. For economies without an inflation target, the long-run average of long-term expectations is taken as a benchmark. Sources: Consensus Economics; national data; BIS calculations.

of inflation expectations (ie LTE minus STE) on the vertical axis. A point in the top left-hand or bottom right-hand quadrants (green-shaded) indicates that survey respondents foresee inflation moving closer to the target over time. By contrast, points in the red-shaded quadrants suggest that expectations are for inflation to move away from target in the long run. Of particular concern are points in the top right-hand quadrant, where inflation is expected to exceed the target in the long run. We make this comparison at two points in time: early in 2021, which roughly marks the beginning of the surge in inflation (left-hand panel), and as of the January 2022 survey edition (right-hand panel).

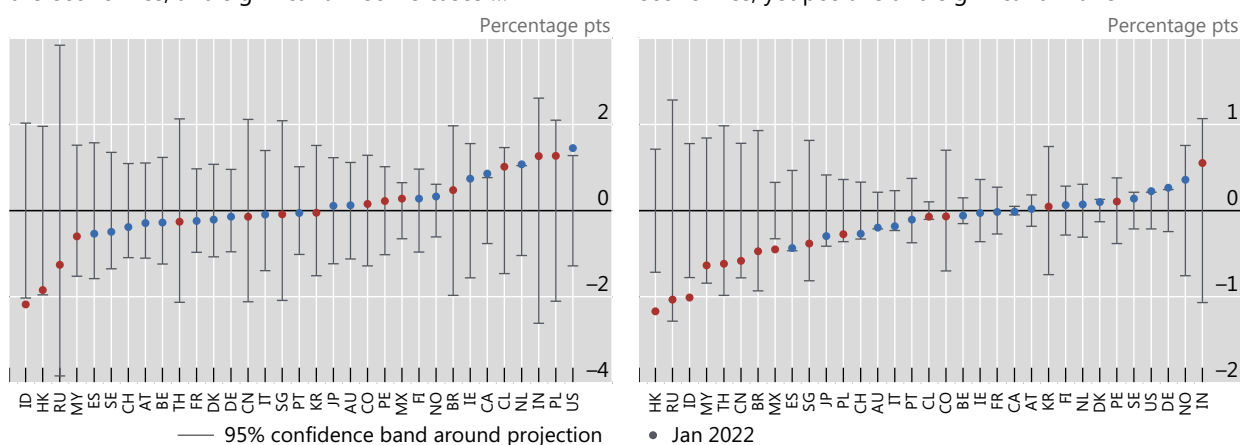
The main message is that the increase in near-term inflation expectations that followed the surge in inflation in 2021 has not triggered expectations of continuing increases in inflation over the medium to long term. This is evidenced from the fact that the dots in the January 2022 panel are both lower than those in the previous year and mostly below the horizontal axis, indicating that the expectation is for the high current inflation to wane. In addition, the distance between LTEs and the policy target is less than 50 bp in most economies. That said, currently low and stable LTEs cannot be taken for granted. All countries are at risk of persistently overshooting the inflation target if higher STEs feed into wage-price spirals and lead to endemic inflation, but for those in the red quadrants the situation is more pressing.

Zooming in more closely on whether the inflation surge has affected the formation of expectations, we look for signs that turn-of-the-year expectations were out of line with the way expectations were formed prior to the pandemic. To this end, we use our statistical model estimated up to end-2019 to compute projections of inflation expectations in January 2022 based on realised inflation up until that date. This makes the projections both consistent with the pre-pandemic expectation formation patterns and linked realistically to the recent burst in inflation. We then compute the “expectations gap” as the difference between these projections and observed survey-based STEs and LTEs. Given the finding that the anchoring of pre-pandemic expectations has strengthened, we interpret a large gap as a sign of de-anchoring.

Encouragingly, we find that expectations are generally in line with past patterns and that weak signs of inconsistency emerge only in a few cases (Graph 5). For about half the economies, the STE gap is positive (ie STEs exceed model-based projections) and only in three cases (Canada, the Netherlands and the United States) is it statistically meaningful (left-hand panel). The gap in LTEs is smaller and negative for most of the economies (right-hand panel). Yet, we note a positive and statistically significant gap in Germany and the United States. These findings raise only a few, isolated flags about the risk that expectations may drag their anchor.

“Gap” in short-term expectations positive for about half the economies, and significant in some cases ...

... “gap” in long-term expectations negative in most economies, yet positive and significant in a few



¹ Projected expectations are based on a model fitted on data until 2019 and actual inflation until January 2022. Mean projections are normalised to zero, so that the height (or depth) of the dot indicates the gap between the observed expectations as of January 2022 and the projected value.

Sources: Consensus Economics; national data; BIS calculations.

Most central banks can take comfort from the fact that long-term inflation expectations have remained largely anchored. However, in many economies, rising inflation has pulled short-term expectations higher. In a few cases, long-term expectations have also been pulled higher, albeit to a lesser degree. Central banks will have to manage expectations against an increasingly challenging economic landscape, whereby supply side pressures on prices are likely to persist in the next several quarters, compounded most recently by geopolitical factors. Well-behaved expectations suggest that central banks have retained the confidence of market observers that inflationary impulses can be dealt with in a way consistent with the central bank’s framework and targets. However, our findings suggest that this hard-earned confidence will need to be nurtured and strengthened.

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