

Inflation-Forecast Targeting: A New Framework for Monetary Policy?

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Abstract: This article provides an overview of inflation-forecast targeting (IFT) to build credibility and maintain stability. We show how inflation-forecast targeting is a transparent approach and an ideal strategy for monetary policy. In addition, public understanding would be essential to foster confidence and ensure the effectiveness of monetary policy. To this end, adequate management of expectations and transparent communication are important¹.

Keywords: Inflation-Forecast Targeting, Expectations, Communication, Monetary policy

Jel Classification: E47, E52, E58

1. Introduction

Since the 2000s, inflation is no longer a widespread problem today. Other economic issues occupy a far higher profile in the public debate: Climate change, green financial system, FinTech, macroprudential framework, employment, cyber (security / attack), inequalities, aging populations, health, slow growth and uncertainty, to name a few.

Yet in the 1980s, 1990s and even until the early 2000s, inflation was a major problem. Chronic inflation in the 1980s seemed to fit the time consistency theory of Kydland and Prescott (1977), who predicted that discretionary monetary policy favored inflation because of the perpetual temptation to stimulate output with a surprise surge in monetary expansion. To solve this alleged problem, Barro and Gordon (1983) proposed to remove central bank discretion and limit it to a coherent objective of price stability over time (Walsh, 2015). The idea did not appeal to central bankers, who knew from experience that tactical leeway was necessary to cope with complex and unpredictable developments. However, they saw the practical logic of a binding commitment to price stability, defined as a state in which the public expects consumer prices to increase little over time (Fuhre, 1994). The practical question raised by the theory of temporal coherence has therefore become how to establish the credibility of the objective while retaining discretionary control over the instruments of monetary policy. This change follows the emergence of a consensus that the primary objective of monetary policy is price stability - low, stable and predictable inflation. With this in mind, many countries have adopted an explicit numerical target as the basis of their monetary policy, for many the range of 2-3% is acceptable.

In the late 1980s, the Reserve Bank of New Zealand became the first central bank to announce an inflation targeting strategy, as an initiative to end the chronic and structural problem of inflation (Croce and Khan, 2000). This was an important step in demystifying the objectives of monetary policy, and it marked the start of a remarkable transition towards transparency and central bank credibility. During the 1980s, global monetary policy goals were diffuse, characterized by loose commitments to price and employment stability, and central bank operating procedures were somewhat obscure (Bernanke and Mishkin, 1997; Vredin, 2015). But in the mid-2000s, after the series of changes introduced by New Zealand and other advanced countries, many central banks used explicit inflation targets to govern monetary policy, relying on a structured framework for forecasting and policy analysis.

By the early 2000s, inflation-focused central banks placed a high priority on building the credibility of the new regime by adopting rigid policies to ensure that inflation did not exceed initial annual targets. This difficult approach has reduced inflation expectations (Adrian *et al.*, 2018a). The priority in the early years was to establish the credibility of the original goals with a skeptical audience. Policymakers therefore set interest rates high enough to ensure that initial targets were met or exceeded. Despite the critical outspokenness of high interest rates and the resulting

loss of production and jobs, inflation targets have held up. In fact, disinflation was enough to capture public attention and pave the way for a permanent decline in inflation expectations. At the same time, the production losses turned out to be temporary, as predicted by the theory of the Phillips curve augmented by expectations (Duc, 1971; Payne, 2010). Other countries noticed this, and by the turn of the century many central banks were pursuing an inflation target (Mishkin and Posen, 1997). Within a few years, the general public had largely established their confidence in long-term stable inflation (Jahan, 2017).

Before the international financial crisis, the monetary policy framework worked well, preventing recessions and keeping inflation under control. However, the results since the crisis have been disappointing. The monetary policy response to below output target and below inflation target has been thwarted by the effective lower bound of the nominal interest rate close to zero. The situation called for a coordinated deployment of all relevant policies, in particular fiscal stimulus when the public sector's balance sheet is healthy, as well as structural reforms, including strengthening of financial systems and the deployment of macroprudential tools. Since a deep setback could make a positive contribution, it soon became clear that a more flexible approach, giving more weight to the stability of production, would be more efficient and sustainable. Rather than rigorously targeting year-to-year inflation, the key to maintaining credibility would be to respond effectively and visibly to any deviation in order to bring inflation back to the medium-term target. Best practice would involve a flexible approach, taking into account the implications of policy measures on output and inflation. In a fundamental contribution, the Swedish economist Lars Svensson (1997) systematically developed the notion of flexible inflation targeting, describing it as a regime in which the central bank pursues the main objective of keeping inflation at a level low and stable while taking into account other objectives such as production or employment and ensuring the pursuit of these other objectives. Svensson (1997) points out that the inflation forecast for the central bank is an ideal conditional intermediate target, as it takes into account all available information, including the preferences of policy makers and their views on how the economy works. Practitioners have come to view inflation targeting as an effective and systematic way to operationalize flexible inflation targeting (Adrian *et al.*, 2018b). This regime embodies the fundamentals of inflation-forecast targeting (Alichi *et al.*, 2015).

This article provides an overview through the prism of a new inflation targeting regime that would work well in times of prosperity and crisis. It describes how

policymakers could systematically formulate responses to inflationary shocks, with due regard to the consequences on output. In addition, the article introduces a logic of taking into account the management of expectations in the definition of monetary policy and deals more broadly with an effective communication strategic framework to strengthen the effectiveness of monetary policy with a view to achieve the inflation forecast target.

2. Economics of Inflation-Forecast Targeting

In a contribution that preceded the widespread adoption of inflation targets, Summers (1991) sets out the main considerations that high inflation rates, greater than or equal to double digits, impose significant costs on the economy, in particular reduced growth (Ilunga and Pinshi, 2018), inefficient allocation of resources (Coibion *et al.*, 2012), disruption of the tax system (Poterba and Rotemberg, 1990), inequitable redistribution of income (Monnin, 2014), labor market conflicts (Sarel, 1995) and social tensions. Likewise, zero inflation would not be a good goal for several reasons, including measurement error that skews prices, so a zero goal would effectively mean deliberate deflation rather than price stability (Boskin *et al.*, 1996). A very low but positive inflation target of less than 1% would be more compatible with price stability in the literal sense, but would imply the economy to deflate almost half the time. And deflation has generally (but not always with the Pigou effect (Pigou 1941)) been associated with recessive spreads.

Most economies have opted for a long-term inflation rate close to 2%. This is more than enough to cover the upward measurement bias and until the international financial crisis seemed high enough to avoid the deflation trap. Since then, persistent below-target inflation and weak growth have led many economists to recommend a higher target (see Ball, 2014; DeMichelis and Iacoviello, 2016; Kiley and Roberts, 2017). One of the factors behind their arguments is that the equilibrium real interest rate has fallen dramatically over the past few decades and is probably not much higher than zero. With a nominal interest rate close to zero and inflation expected at 2% in the long run, conventional monetary policy would struggle to provide adequate stimulus during a recession. If the long-term target were, for example, above 2%, the classic interest rate policy would be all the more effective in real terms. Proponents of this thinking point out that the evidence does not indicate that such an increase in the target inflation rate would have long-term negative effects on output (Blanchard *et al.*, 2010; Kremer *et al.*, 2013; Dorich *et al.*, 2013; Dorich *et al.*, 2018; Dholakia, 2020).

The main central banks, however, maintained their initial targets. Raising them would raise questions of credibility and temporal coherence (Kydland and Prescott, 1977; Calvo, 1978; McCallum, 1997; Hartley, 2006; Carré and Leloup, 2020). If a central bank commits to a long-term target of 2% after raising the target to 4 or 5%, how do you convince the public that it would not increase that target to 7 or 8%? Assuming she does, would that be appropriate? More fundamentally, many central bankers have a conservative view of the price stability mandate and this conservatism can be an asset to be preserved for the credibility of monetary policy (Rogoff, 1985; Walsh, 1995). In this light, the potential benefits of targeting by inflation level trajectory have again been highlighted in response to the poor economic recovery after the crisis. It has been shown that targeting inflation forecasts would have provided a framework for central banks to use their instruments more aggressively to eliminate the economic downturn more quickly by planning to temporarily have an interest rate lower and higher than their long-term inflation targets (Coibion *et al.*, 2012; Williams, 2016). This expected temporary overrun of inflation over target may be consistent with optimal monetary policy in times of uncertainty (Kamenik *et al.*, 2013).

Inflation-forecast targeting is based on the principle that, given the long-term objective of the inflation rate, the central bank's inflation forecast² is an optimal, conditional and intermediate objective. Al-Mashat *et al.* (2018a) suggest the following basis features for a good framework for inflation-forecast targeting:

- ❖ Monetary policy uses its operational framework³ (usually the policy rate) to achieve a low inflation target over the medium term (in practice, around one to two years). In addition, the policy rate reacts to eliminate any gap between inflation and its target, and also to smooth any output gap.
- ❖ The central bank's economic forecast points the way to reaching the target, which is an ideal midpoint for managing the short-term trade-off between inflation and output.
- ❖ The forecast made by the staff (econometricians)⁴ is a key element in the decision of the monetary policy committee, but it is only one element among many. Committee members may not agree with the forecast and may incorporate other information into their development.

The forecasting system organizes the quarterly forecasting exercise around a basic projection model (Svensson, 2005; Canales-Kriljenko *et al.*, 2006; Laxton *et al.*, 2009; Giannone *et al.*, 2014; Adams *et al.*, 2021). The typical base model is a mid-size

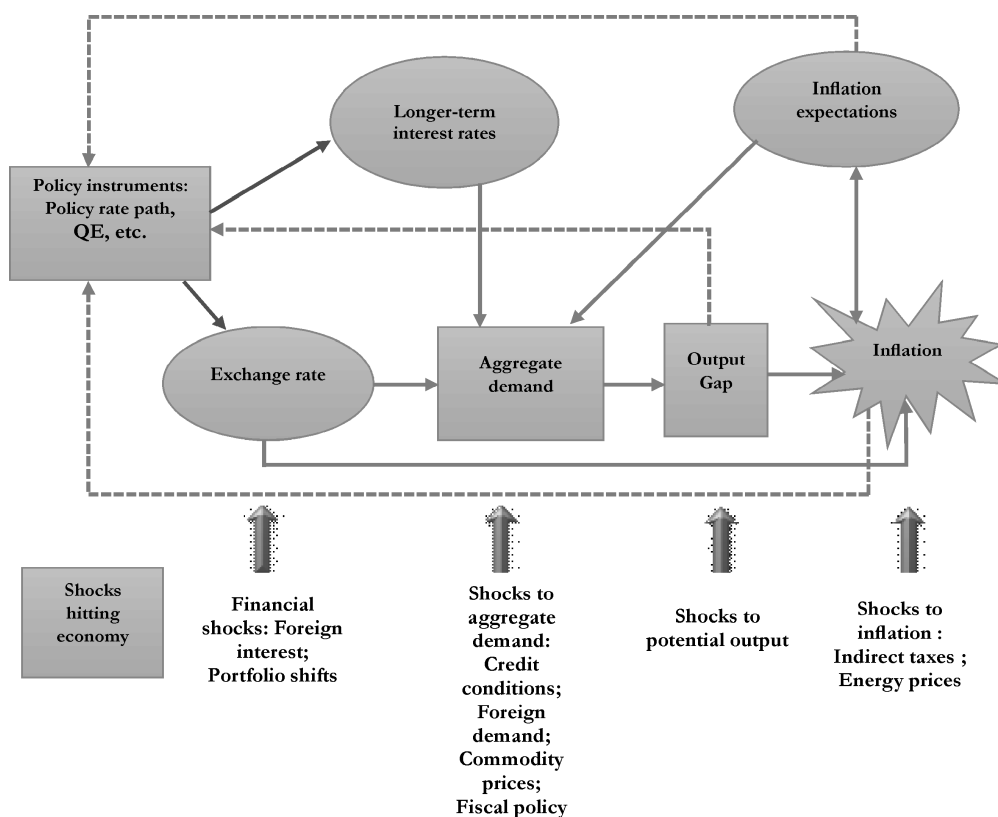


Figure 1: Inflation-Forecast Targeting: Transmission and Response

Source: Al-Mashat *et al.* (2018a)

quarterly macroeconomic model that incorporates the central bank's knowledge of the interest rate pass-through (monetary policy transmission mechanisms) (Berg *et al.*, 2006; Edge *et al.*, 2006; Edge *et al.*, 2010; Al-Mashat *et al.*, 2018b). It contains a Taylor reaction function for the interest rate that captures the preferences of policymakers on short-term trade-offs between inflation and output variability (Fuhrer, 1997; Plantier and Scrimgeour, 2002; Assenmacher-Wesche, 2006; Yüksel *et al.*, 2013; Ogiji *et al.*, 2021).

The economic and macroeconomic services present to the monetary policy committee a basic forecast and alternative forecasts based on different assumptions about the economy. Each interest rate decision stems from the committee's point of view on the best path for the medium-term policy rate, taking into account both short-term trade-offs, the output gap and the need to ensure that real inflation does not deviate too far from the target in the medium term. The credibility of the long-

term inflation target underlies the inflation-forecast targeting. The pragmatic requirements within the central bank for an operational inflation-forecast targeting regime are as follows (Goodhart, 2011; Sen Gupta and Sengupta, 2016; Buckle, 2019; Chugunov *et al.*, 2019; Walter and Wansleben, 2020):

- A structured forecasting and analysis system maintains relevant databases and produces model-based forecasting and associated economic analysis on a regular schedule.
- Policymakers and technical staff maintain communication to ensure that the forecast addresses key concerns of the monetary policy committee.
- The Forecasting Staff presents forecasts to policymakers, which would come from a full forecasting exercise at least quarterly, shortly before each policy rate setting meeting.

Greater credibility relies on the anchor provided by adequate general public expectations that monetary policy will keep inflation stable and close to target (De Mendonça, 2007; Christelis, 2020; Pinshi, 2020a; Carvalho *et al.*, 2021; Alex, 2021). This in turn requires that monetary policy consistently meet the requirements of this objective. Figure 1 illustrates a framework of the process. With forward-looking policy, the expected path of the policy rate is adjusted when unforeseen disruptions hit the economy, with the aim of bringing inflation down to target, while limiting disruptions to the output gap. This feedback ensures that the nominal anchor holds, via an endogenous short-term interest rate, is represented by the dotted arrows in Figure 1. In the event that the inflation rate achieved deviates from the long-term goal, the committee has a choice of reacting in its own way. The approach can be more or less rapid, depending on preferences regarding the short-term trade-off between output and inflation (Svensson, 2010; Justiniano *et al.*, 2013; Reis, 2013; English *et al.*, 2015). It could be a smooth approach or a planned pass. Among the options available, the central bank will implement the one that appears to be the best, namely the one that reflects its judgment as to the best outcome in relation to trade-offs between inflation, output and the variability of the interest rate (Qvigstad, 2005). Consistent behavior for the committee would involve describing the entire future path of the policy rate (and not just the current level of the policy rate), which would be a theme for the next round of external communications, through meetings with the media and press conferences held after the decision meeting on the monetary policy report.

The expectations of changes in policy rates in the short and medium term play a crucial role in the transmission mechanism (Warjiyo, 2014; Corrado *et al.*, 2021), as shown by the arrows going from the instruments towards the ovals called interest rates. Long-term interest rates and exchange rate. The cost of borrowing for businesses and households does not match the very short-term rate directly controlled by the central bank, as they tend to borrow on a longer term. The choices of the central bank affect the rates they pay more because of the impact of expected future policy rates, and therefore the level of the yield curve, than through the current policy rate.

3. Conditions: Expectations and communication

The main long-term objective of monetary policy is to create a sustainable environment of low, stable and predictable inflation. Within this framework, inflation-forecast targeting provides a framework for building credibility and confidence. However, there are a few conditions that must be met for a more than perfect success (even if there are always targeting errors), namely effective management of expectations and a transparent communication strategy. Indeed, the essence of a useful monetary policy lies in the effective management of expectations. This applies to both the objectives and the instruments. Expectation management is therefore the compliant instrument for adequate long-term inflation control (Al-Mashat *et al.*, 2018c).

Suppose an expected inflation rate prevails with the Phillips curve vertical to the equilibrium unemployment rate. According to this view, the main objective of monetary policy is to ensure that expectations are stable at the target rate, i.e., that the general public is convinced that inflation will continue for the indefinite future at the stated objective. But suppose that when a target was introduced, inflation hovered around a higher rate and expectations froze. To arrive at the new equilibrium at the target rate, it will generally result in an unemployment cost greater than the equilibrium (Eusepi and Preston, 2018). Keeping inflation on target long enough could ensure that expectations come true. The Phillips curve narrows and returns to long-run equilibrium, with the unemployment gap narrowing to near zero. Depending on the adaptation of public expectations, this process can lead to a protracted unemployment gap (Hooper *et al.*, 2020; Del Negro *et al.*, 2020; Rudd, 2021). However, in a hypothetical case where central bank announcements are perfectly credible, expectations will immediately move closer to target, minus the cost of unemployment (Salle *et al.*, 2019; Lamla and Vinogradov, 2019; Duffly and Heinemann, 2021; Herbert,

2021). When adjusting to a new inflation target, the cost of unemployment falls faster as the general public's expectations adjust to the target.

In addition, the effectiveness of the interest rate pass-through (including forward guidance) depends on the good management of expectations. As noted above, the long-run equilibrium is equal to the target inflation rate and the equilibrium unemployment rate. However, shocks continue to hit the economy, so monetary policy cannot keep inflation as expected, but only on average. More generally, the greater the cyclical fluctuations in the economy, the greater the loss of deadweight yield over time (Al-Mashat *et al.*, 2018c). It follows that the more countercyclical monetary policy is, the lower the cost. And in turn, the effectiveness of the operational framework for this purpose again depends on managing expectations (Bernanke, 2020). Thus, the argument accepted by the majority of researchers and policy makers is that full transparency is the easiest way for the central bank to build confidence in the long-term inflation target (Blinder, 2000, 2018; Stella, 2005; Dincer and Eichengreen, 2013).

In the sense that inflation-forecast targeting also involves a transparent communication strategy, a typical timeline following a monetary policy decision is very important and could be caricatured as follows:

- ✓ The governor of the central bank announces and reviews the policy decision and the economic outlook at a press conference, justifying the reason for the choice made. Staff members can answer more technical questions.
- ✓ A monetary policy report explaining in more detail the rationale for the measures taken. The report provides the basic, usually quarterly, forecast path for the main objective variables, inflation and economic growth, as well as other macroeconomic variables. These include conditional forecasting of the policy rate and explicit targets for forecasting inflation.
- ✓ Presentations and publications highlight conditionality and uncertainty by considering alternative scenarios with different assumptions for specific shocks related to economic dynamics. These exercises not only warn of the risks, but also educate the public on how the central bank might react to a series of shocks.

Indeed, credibility aims to describe the demonstration of a coherent strategic framework for central banks and to explain and learn from past mistakes in this framework (Briault *et al.*, 1997; Clarida *et al.*, 1999; Best, 2019). This means that both

technical and non-technical discussions of the objectives should be communicated, as well as the central bank's understanding of the transmission mechanism (and its obstacles) and an explanation of the chosen objective. It is emphasized that this approach seeks to appropriately balance the stabilization of production and the maintenance of inflation at the target level (Buti *et al.*, 2003). This implies a medium-term horizon, with a gradual return of inflation towards the target, because a short horizon would imply strong reactions from key rates and volatile production. So, while the public should expect inflation to be off target in any given month, it should be confident that central bank policy actions will bring inflation back to the medium-term target. Nominal anchor is the expectation, in all eventualities, that the long-term inflation rate will be in line with the target. While a coherent model of policy responses forms the ultimate basis for a credible regime, clear communications

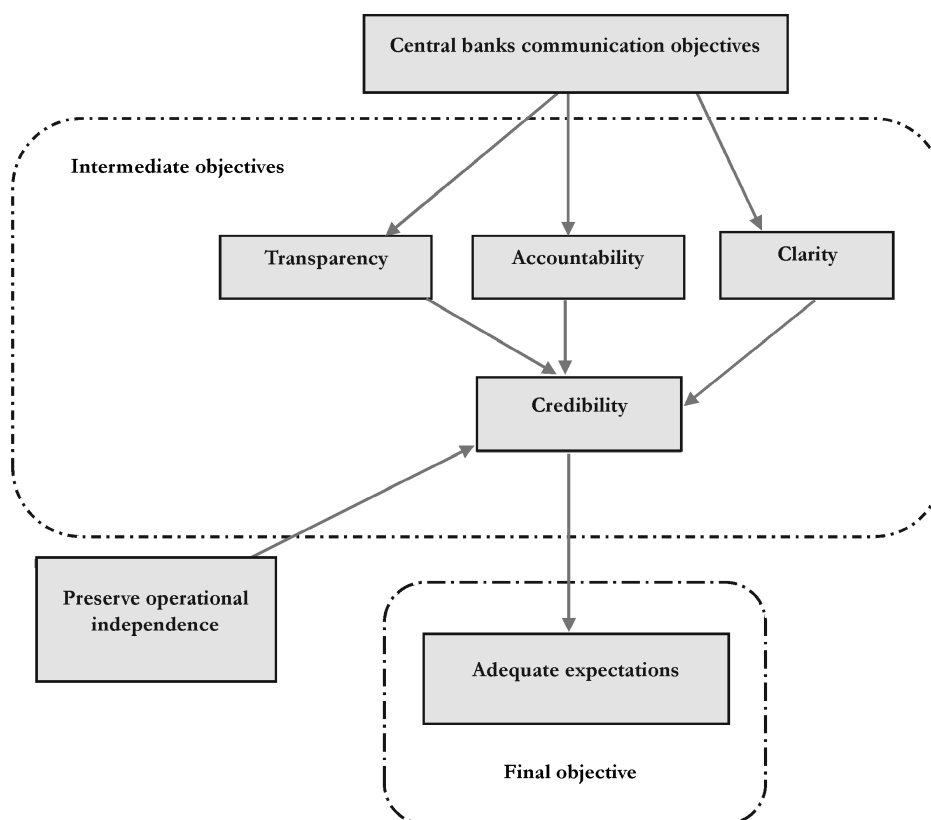


Figure 2: Central banks communication objectives

Source: Naghadiyev (2011)

from the central bank on the intent of current policy measures accelerate the process of building credibility.

In an inflation-forecast targeting regime, the publication of central bank production and inflation forecasts is critical news for the business and financial media (Boranova *et al.*, 2021). Forecasts change over time due to new information and changes in the interpretation of economic developments. In turn, the central bank's shifting views on the economic outlook are central to the analyses and discussions of academics, financial market participants and economic media commentators, who are the primary conduit for information to the public. (Al-Mashat *et al.*, 2018d). The central bank's message must be suitable for multiple audiences (Braun, 2016; Moschella *et al.*, 2020). These include the general public, financial institutions, the media, parliaments and government.

Transparency requires that the information published in the monetary policy report corresponds to the information that a monetary policy committee has used to make its decision (Geraats, 2005; Ferrero and Secchi, 2009; Montes *et al.*, 2016; Jarociński and Karadi, 2020). To amplify the impact of the report, senior officials meet with interested groups, appear before parliamentary bodies, and deliver speeches and lectures. Policies regarding the publication of minutes issued by a monetary policy committee vary depending on the details published and the time elapsed between the meeting and the time of publication of the minutes (Al-Mashat *et al.*, 2018d). But all central banks targeting inflation provide a timely description of the range of views among members. In addition, modern communication technologies offer many platforms to reach the public: websites, blogs, Twitter, Facebook, etc. Ideally, their use should be integrated and complement each other. Otherwise, there would be a risk of over-communication and transmission of mixed messages via the different channels (Batinca and Treleven, 2015; Korhonen and Newby, 2019; De Guindos, 2019; Masciandaro *et al.*, 2021).

In short, central banks should have clear communication objectives in order to avoid a lot of unwanted information that could lead to rational decision-making bias by the general public (Huang, 2007; Omotosho, 2019; Kibadhi and Pinshi, 2020). From this perspective, the final objective of a communication strategy must be the effective management of expectations, the intermediate objectives of central bank communication must necessarily include transparency, accountability, clarity and credibility (Figure 2). These objectives will provide a better understanding of the general public's targeting of inflation forecasts and will increase the effectiveness

of monetary policy through increased confidence. Of the intermediate goals, Blinder (2000), Moscarini (2007) and Naghdaliyev (2011) assert that credibility is the most important, noting that a central bank's ability to firmly manage expectations depends on its credibility. At the same time, for more credibility, it is necessary to preserve operational independence, i.e., the freedom for a central bank to conduct and implement monetary policy, which is the case for many central banks around the world, which enjoy operational independence (Kibadhi and Pinshi, 2020).

4. A look at developing economies

In low-income countries without strong and developed financial systems, monetary aggregates and the exchange rate may well be the only effective policy levers. In addition, even in economies where the normal instrument is a short-term interest rate, in exceptional circumstances, for example at the effective lower limit of the policy rate, the central bank may use the exchange rate as less conventional instrument (Svensson, 2001).

Low-income countries experience larger inflation rate shocks than advanced economies due to the higher proportion of fresh food and energy in the consumption basket (Baumeister and Kilian, 2014; Ha *et al.*, 2019). The prices of these commodities are subject to volatility resulting from changes in international markets, annual variations in harvests and, in some cases, political friction. The gaps between core inflation and headline inflation are larger than in advanced economies. This could justify a slightly higher headline inflation target. While acknowledging the initial success of inflation targeting, it has been suggested that inflation-forecast targeting is an approach more compatible with the mandate of sustainable price stability, which largely means reducing the price uncertainty about long-term price levels. This approach is perceived as difficult for developing countries, even if most have opted for the objective of price stability (or a targeting regime), they experience qualitative macroeconomic volatility, masked by quantitative stability, that is, their stability is only temporary and on a razor's edge, in reality whenever there is a small shock, this stability sees itself mechanically unbalanced (Heintz and Ndikumana, 2011; Morozumi *et al.*, 2020; Cachanosky and Mazza, 2021; Martins and Skott, 2021).

In addition to the problem of macroeconomic uncertainty, the trend towards greater transparency is helping to improve accountability. It is a necessary counterpart to the operational independence of a public body in a democracy. Increasingly, central banks in developing countries suffer from a weak governance framework: lack of

increased accountability, lack of transparency, increased lack of clear communication and a negative credibility shock accelerating the loss of control of the monetary policy regime (Pinshi, 2020b). There would be no formal process that would hold central banks, as unelected bodies, accountable for their management of policy, and responding through a formal process to government or parliament and, more generally, to the general public. In addition, the persistent problem of fiscal dominance hampers the effective implementation of a regime such as flexible inflation targeting, as the success of monetary policy in containing inflation and smoothing out the output gap is also successful and largely depends on an appropriate fiscal policy or lack of fiscal dominance (Sen Gupta and Sengupta, 2016; Pinshi, 2021).

5. Conclusion

Inflation-forecast targeting is increasingly gaining the perimeter of central banks and is a transparent and flexible approach to inflation targeting. Academic research influenced its development, but practical experience built the main basis of its principles. Inflation-forecast targeting does not require rigid measures designed to meet the year-over-year target. This new framework recognizes that the objectives of monetary policy are to produce and reduce unemployment in the short to medium term, as well as inflation (not to mention financial stability, although we haven't had the opportunity to briefly outline this in the main article), and that monetary policy comes into effect with a considerable delay. Since the central bank's forecast takes into account all relevant information, including the preferences of policymakers for short-term trade-offs between output and employment, it is an ideal intermediate target for monetary policy.

The guiding principle is that inflation-forecast targeting, which, based on a system of macroeconomic forecasting and economic policy analysis, suggests that inflation will converge towards the target. To do this, the interest rate pass-through (the transmission mechanism of monetary policy) must systematically work well in order to bring inflation back to its target. When the public understands this, long-term expectations remain firm even in the face of fluctuations and the nominal peg remains stable. To this end, transparent communications are extremely important, operational independence is crucial and a lack of fiscal dominance.

Notes

1. I am grateful to Ben Bernanke for his comments.
2. In principle, these forecasts contain all the relevant information available to the central bank, including knowledge of the preferences of policy makers in terms of trade-off

between inflation deviations from target and output over potential and the performance of the monetary policy transmission mechanism.

3. The operational framework of monetary policy constitutes the operational objective and the instruments of monetary policy (Warjiyo and Juhro, 2019).
4. The econometric staff uses a basic model (VAR models (BVAR, SVAR, GVAR, FAVAR, TV-FAVAR, etc.) and DSGE), with classical macroeconomic properties, to derive the forecasts. These model-based forecasts provide a basis for both political decisions and for explaining the economic logic behind those decisions in public communications. (The forecast path of the short-term interest rate is endogenous in the model, with the rate varying to meet the long-term inflation target and smooth out any output gap).

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