FPAS Mark I Central Bank Transparency and Credibility Measures

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"A growing body of research and experience demonstrates that clear communication is itself a vital tool for increasing the efficacy and reliability of monetary policy." -Janet Yellen

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ABSTRACT

It is not uncommon to find central bankers that claim that central bank transparency is an important foundation for effective monetary policymaking. However, existing measures for central bank transparency are problematic, because they do not differentiate very well between different types of inflation-targeting central banks. In particular, those central banks that have developed forward-looking frameworks use forecasts with endogenous interest rates to explain the logic behind policy decisions, both now and in the future. This paper builds on previous research to develop a new framework for measuring central bank transparency, known as the Central Bank Transparency-Inflation Targeting (CBT-IT) Index. The CBT-IT index measures transparency across three categories: monetary policy objectives; the Forecasting and Policy Analysis System (FPAS), which provides a structured and systematic framework for achieving full-fledged flexible inflation targeting; and the monetary policy process. We apply this framework to 16 inflation-targeting central banks (both FPAS and non-FPAS). Unsurprisingly, FPAS central banks have meaningfully higher scores; this simply reflects the design of the index, which places considerable emphasis on forward-looking frameworks with endogenous interest rates. The value of this approach, however, is to enable future researchers to explore more deeply the transparency practices of FPAS central banks and their potential benefits. In addition, the CBT-IT index can be used to identify best practices and facilitate further improvements in transparency, even for central banks that are presently considered to be the "gold standard" for transparency. As we move toward establishing FPAS Mark II—an evolution of the FPAS framework that better incorporates uncertainty and nonlinearities—this paper's insights on ways to improve transparency will serve as important reference points for further research and progress. Further applications and updating of the existing methodology for FPAS Mark I central banks, along with the development of new frameworks for measuring transparency in the context of FPAS Mark II, will be updated occasionally.

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I. INTRODUCTION

Transparency is the foundation of central bank accountability in democratic countries, which together provide incentives for effective monetary policy. In addition to democratic accountability principles, as Janet Yellen has put it so eloquently "… clear communication is itself a vital tool for increasing the efficacy and reliability of monetary policy". In this vein, many flexible inflation-targeting (IT) regimes were built on the foundation that improving transparency would improve the efficacy of monetary policy by anchoring long-term expectations and reducing monetary policy uncertainty. Since the implementation of inflation targeting (IT) regimes, central banks have placed significant emphasis on providing transparency in their policy decision-making. Leading IT central banks publish detailed Monetary Policy Reports for the public, containing not only the projected forward path of the policy rate, but also, key variables such as output, inflation and even exchange rate. Still others provide transcriptions of governors' deliberations and publish minutes of board meetings including contributions of individual board members. Clinton et al. (2015) and Adrian, Laxton and Obstfeld (2018) argue that these and other important principles of transparency can improve the efficacy of monetary policy by helping to anchor long-term inflation expectations and to ensure that asset prices (real long-term interest rates, the exchange rate, etc.) act as shock absorbers rather than shock amplifiers (e.g. in the case of Japan, where the yen served as a shock amplifier during the Global Financial Crisis, as compared to the case of Canada during this period, when the dollar served as a shock absorber).[3] Considering the significance of transparency, it thus becomes essential to develop better tools for understanding and quantifying it. This paper develops quantitative measures of transparency to allow future researchers to assess the policy implications of such claims.

While measures for calculating central bank transparency exist, they are not without limitations. The Dincer-Eichengreen (DE) Index, developed in 2014 and updated in 2022, is one such measure, providing a broad-based index for central bank transparency for 112 central banks in nearly 150 countries between 1989 and 2019.[4] The measure is calculated along five general dimensions: political; economic; procedural; policy; and operational. While this index is valuable for providing a broad measure of transparency, it remains constrained by several issues. First, the explicit focus on monetary policy results in the absence of any measure of financial stability in the DE index. Financial stability has become particularly important in the context of monetary policy after the Global Financial Crisis. Moreover, because of its breadth, the DE index does a poor job of differentiating between leading IT central banks, as a result of which nearly all IT central banks achieve near-maximum scores. The DE index is not equipped to adequately assess the advanced forms of communications that vary even among IT central banks; this is an area in which most IT banks still have significant space to improve and grow, but this important nuance is not reflected in the DE index.[5]

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[3] See Adrian, Laxton and Obstfeld (2018).

[4] See Dincer and Eichengreen (2014) and Dincer, Eichengreen, and Geraats (2022).

[5] As an illustrative example, we present the DE index question on the disclosure of macroeconomic models:
- Does the central bank disclose the macroeconomic model(s) it uses for policy analysis?

We compare this to the corresponding questions in the CBT-IT index on model disclosure:
- Is the core quarterly projection model (model used for policy-making) publicly available and documentation updated within the last 5 years?
- How transparent is the central bank about the reaction functions (or loss functions) that are used to compute the interest rate paths (or paths for other instruments when the policy rate is constrained by the ELB) in their regular projection exercises? Do the monetary policy reports include a reference to the core model documentation that has the reaction function or the loss function?

Relative to the DE index, which keeps this question relatively simple and high-level to allow for a comparison across almost all countries, the CBT-IT Index provides a more deep-dive approach to the question of model

The IMF has also developed a comprehensive framework for measuring transparency, known as the Central Bank Transparency Code (CBT).[6] The index is applied on a voluntary basis (either self-assessed or through IMF technical assistance missions) and can be done in a modular manner, which can provide important benchmarks for central banks to improve their transparency. Because of how it is intended to be used, the IMF measure primarily serves as an accountability tool for the IMF and central bankers to assess transparency *within* individual central banks. While indexed comparisons across central banks are possible, this is not the intended use, and the detailed and/or confidential nature of some of the questions can make apples-to-apples comparisons difficult. Other, indirect measures of transparency also exist, including the recent work by Unsal, Papageorgiou and Garbers (2022), which introduces the "Independence and Accountability, Policy and Operational Strategy, and Communications (IAPOC)" measure.[7] Here, the challenge is that the index aims to provide a holistic assessment of monetary policy frameworks, of which transparency is only one component. Thus, while it is a useful and robust tool, the IAPOC index does not have transparency as its main focus.

Without detracting from their merits, the limitations of these three measures make apparent the need to develop more granular measures of transparency that serve a different purpose: evaluating the differences in transparency among central banks in a detailed and nuanced way, specific to the unique transparency characteristics and needs of Forecasting and Policy Analysis (FPAS) IT central banks. This paper expands on the ambitious Central Bank Transparency-Inflation Targeting (CBT-IT) project initiated by Al-Mashat and others (2018) for the Czech National Bank, by Halworth, Kostanyan, and Laxton (2020) for New Zealand, and by Fornero, Kostanyan, and Laxton (2021) for Chile. These three central banks are leading implementors of the FPAS, an organizational framework that fully adopts the principles of inflation targeting and prioritizes transparency as a key linkage for achieving better accountability and reaching monetary policy objectives. The CBT-IT index we present in this paper focuses solely on IT central banks (including FPAS and non-FPAS), allowing a more detailed examination of the transparency practices at leading central banks. Building on this prior work, this paper concisely presents the CBT-IT index methodology, and applies this index to sixteen IT central banks, as of 2021 (end of year), allowing for the first time a nuanced comparison of transparency between these banks. The application of the CBT-IT index to these countries not only highlights the critical success factors for transparency among leading FPAS central banks, but also, and more importantly, draws attention to key areas where even the best central banks fall short. By enabling this comparison, this paper hopes to catalyze shifts toward even greater transparency among FPAS central banks, including those seeking to implement the next iteration of the system, known as FPAS Mark II.

This paper is structured as follows. Section II proceeds with a brief overview of inflation-targeting regimes, including the Forecasting and Policy Analysis System (FPAS)—in other words, the frameworks of the central banks whose transparency we are measuring. Section III presents the CBT-IT index methodology. Section IV provides a succinct overview of the results. Section V explores key lessons learned, including opportunities to further improve transparency through changes to the IT and FPAS systems by implementing FPAS Mark II. The Appendix provides a case study comparison of

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disclosure that better captures the nuances of the advanced level of communications that is considered best practice for FPAS central banks. Disclosing what macroeconomic model is used, as the DE index asks, is a foundational element of transparency, to be sure, but this tells us very little about the specificities of how model transparency is communicated. The CBT-IT index dives deeper into this question, asking about model documentation, specific timeframes, reaction functions, and other detailed topics. The latter approach allows us to distinguish the transparency practices of FPAS central banks from one another in a nuanced manner, whereas the former approach does not allow for this level of comparison.

[6] See IMF (2020).

[7] See Unsal, Papageorgiou and Garbers (2022).

two central banks at the opposite ends of the transparency spectrum: the Reserve Bank of New Zealand and the Bank of England.

II. INFLATION TARGETING: FPAS VERSUS NON-FPAS CENTRAL BANKS

INFLATION TARGETING (IT)

The CBT-IT index presented in this paper solely focuses on inflation-targeting central banks. IT central banks are defined as those whose monetary policy has an explicit long-run numerical objective of low inflation. For most IT central banks, under normal circumstances, the expected path for the policy rate would be the key policy instrument for achieving the long-run inflation target and managing the short-run output-inflation tradeoff.

There are two types of inflation-targeting central banks: FPAS central banks and non-FPAS central banks.

FORECASTING AND POLICY ANALYSIS (FPAS)

The key innovation of the FPAS is to further extrapolate these principles of inflation targeting and implement them within a robust organizational, analytical, and decision-making *system*. Achieving a full-fledged inflation-targeting regime requires FPAS central banks to develop clear policy frameworks that internally allow for assessments of the state of the economy and the risks that could prevent reaching the inflation target, while externally allowing for central bank performance to be monitored and assessed. The FPAS provides a structured, systematic approach to policymaking—built upon the regular and transparent communication of macroeconomic information between economists, modelers, forecasters, decision-makers, financial market analysts, and the general public—that represents the full crystallization of the principles of inflation targeting.

The FPAS requires policymakers to develop a consistent macroeconomic forecast structured in the form of a baseline forecast,[8] which is developed through an analytical process answering the following questions:

- Where is the economy now?
- What forces are driving the economy?
- What do policy instruments need to do to achieve the basic policy objective? What are the implications of not adjusting policy instruments sufficiently aggressively to meet these objectives?

From an analytical perspective, the forecast is organized around a core quarterly projection model containing a policy reaction or loss function, designed to capture the essential aspects of the transmission mechanism. The resulting baseline scenario provides an endogenous forecast path for the short-term interest rate, but it also includes projections for the inflation rate and other key

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[8] References to FPAS in this paper are explicitly to the first version of FPAS, which is now known as FPAS Mark I. In FPAS Mark I, the emphasis is on constructing a baseline projection and risk assessments in the form of alternative scenarios. FPAS Mark II replaces the emphasis on baseline scenarios with relevant Case A and Case B scenarios, where the expected path of the policy rate is either higher or lower than what is expected in financial markets. See Archer and others (2022).

macroeconomic variables. Importantly, the baseline forecast is supplemented with risk assessments in the form of alternative scenarios reflecting differing assumptions for the economy; these could include shocks or represent views about policy or the structure of the economy that diverge from the baseline assumptions.

While both FPAS and non-FPAS IT central banks define inflation targeting as their ultimate policymaking objective, the key differences between these two types of central banks lie in *how* they achieve that objective—in other words, the organizational characteristics, communications mechanisms, and levels of accountability and transparency that make FPAS a *system* rather than an *idea.* A non-FPAS central bank follows a purely discretionary and non-systematic approach to policymaking, and lacks the above systematic characteristics of the FPAS. How a non-FPAS central bank makes its policy decisions, how it chooses to communicate the decision and (if at all) its rationale, what modeling documentation and data it provides, and what forward guidance it presents remains entirely up to its discretion. In short, it can be very difficult, if not impossible, to understand the logic of non-FPAS central banks' monetary choices.

A structured FPAS approach to policymaking provides several clear benefits over the discretionary approach of non-FPAS central banks such as that of the Bank of England and others that have adopted similar practices:[9]

- Explicit recognition of endogenous policy rate as key mechanism for achieving policy objectives
- Improved communications between key forecasting and decision-making stakeholders
- Better identification and communication of key policy issues, including risks and threats
- Robust documentation of historical forecasting record (data, models, deliberations, etc.)
- Building specialized human capital and institutional knowledge

The reason we refer to the non-FPAS approach as discretionary is that, if there is no explicit communication based on endogenous policy rate as a precondition to achieve policy objectives, then this essentially gives zero information about the logic of policy deliberations—the definition of discretion.

Table 1 provides a succinct summary of the key differences between FPAS and non-FPAS central banks.

To illustrate the difference between FPAS and non-FPAS central banks in communications and decision-making processes, the Appendix presents a detailed comparison of the first central bank to pioneer the FPAS (Reserve Bank of New Zealand), and a central bank that has been a vocal proponent of a discretionary, non-FPAS approach to policymaking since achieving instrument independence in May 1997 (Bank of England).[10] These include charts from the Monetary Policy Reports (MPRs), allowing readers to make their own judgments about the merits of FPAS versus non-FPAS approaches.

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[9] See Obstfeld and others (2016).

[10] For example, Charles Goodhart (former Chief Advisor at the Bank of England, and Emeritus Professor of Banking and Finance at the London School of Economics), argues for the use of inflation forecasts based on a constant interest rate, and critiques the need for a Monetary Policy Committee to provide an explicit loss function. See Goodhart (2001).

Table 1. Comparison of FPAS and Non-FPAS Central Banks

FPAS Central Bank	Non-FPAS Central Bank

• Three Essential Ingredients of FPAS Scenarios:
  ✓ Where is the economy now?
 	
  ✓ What forces are driving the economy?
 	
  ✓ What do policy instruments need to do to achieve the basic policy objective? What are the implications of not adjusting policy instruments sufficiently aggressively to meet these objectives?
	• Three Essential Ingredients of FPAS Scenarios:
	  ✓ Where is the economy now?
	
	  ✓ What forces are driving the economy?
	
	  ✗ What do policy instruments need to do to achieve the basic policy objective? What are the implications of not adjusting policy instruments sufficiently aggressively to meet these objectives?

• Belief in basic principles of monetary policy (AKA Taylor Principle)
 	
  o Invest in FPAS framework.
  o High levels of transparency and accountability.
  o High transparency increases incentives to do the right thing.
	• Exogenous interest rate path
	
	  o Don't invest in FPAS framework.
	  o Low levels of transparency and accountability.
	  o Lack of transparency and the third FPAS ingredient is essentially full discretion -> risk of repeating 1970s Great Inflation.

• Easy transition to FPAS Mark II because:
 	
  o It eliminates the folly in both the consumption and the production of baseline projections.
  o It builds on three essential ingredients.
  o Used to thinking through issues in structured way with rigorous analytical tools.
  o Better policy, training & human capital.
	• Challenges in transition to FPAS Mark II because:
	
	  o Without FPAS Mark I in place, would need to start at ground zero. However, it could still take 2-3 years to develop, but perhaps a bit less than it would take to develop FPAS Mark I, because it eliminates considerable folly in both organization and policymaking.
	  o No systematic approaches, transparency, or robust analytical tools in place.

In the context of the FPAS framework presented in Table 1, transparency is key for FPAS central banks to achieve their policy objectives. Transparently communicating the baseline forecast (with its accompanying endogenous variable projections and alternate risk assessments, as well as making data and models readily available), as well as explaining and communicating policy deliberations and commitments, enables aligning public expectations with policy objectives. This, in turn, helps boost central bank credibility and minimize the costs of achieving the desired policy outcome.

III. THE CBT-IT INDEX

The CBT-IT index is designed specifically to evaluate transparency for IT central banks (including FPAS and non-FPAS banks), the former of which, as a rule (but to varying degrees), emphasize very high degrees of transparency and accountability as a fundamental ingredient for achieving their policy objectives. As discussed in the introduction, existing methods for evaluating central bank transparency, such as the DE index, are quite good at offering a "broad brush" overview of transparency that evaluates nearly every central bank in the world. However, these indices are, by nature, unable to account for the granular differences in transparency among the most advanced IT central banks. In addition, such indexes likely work best for descriptive rather than evaluative purposes, because the underlying discussion of the best-practice nuances is sometimes sacrificed for broader coverage. Thus, these rankings sometimes fail to pass a true evaluative process and express a proper gradation of frameworks. They are still very useful tools for descriptive and characterization purposes, but for those central banks seeking to become best-in-class and push the frontiers of accountability and transparency, these nuances and particularities that traditional indices miss are essential. Only by understanding and quantifying them can IT central banks improve their transparency and more effectively achieve their policy objectives.

With this mission in mind, we present the structure of the CBT-IT index. The index considers 20 key variables, structured within three main categories, reflecting considerations that are especially relevant for IT central banks.

Figure 3. CBT-IT Index Structure: Components of Transparency

Each sub-category corresponds to one point. The maximum (perfect) score a central bank can receive is 20, corresponding to the sum of the sub-components (4 + 9 + 7 = 20).
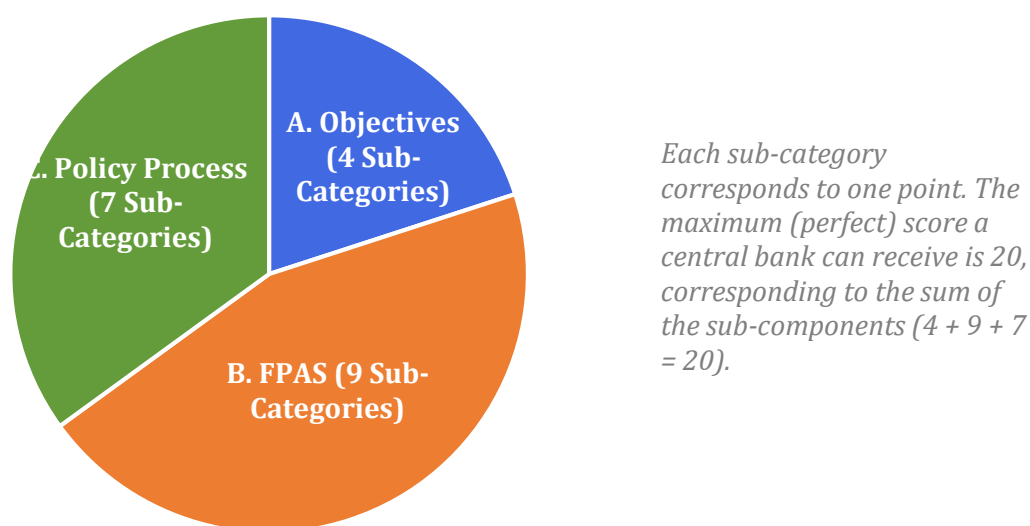
Source: Author design based on Al-Mashat and others (2018).

A high-level overview of the CBT-IT index questions follows. For greater detail on the individual sub-categories and the rationale for their inclusion, refer to Al-Mashat and others (2018).[11]

A. **Transparency of Monetary Policy Objectives (4 Points)**: Does the central bank formally and clearly state its policy objective? Is it easily accessible to the public?
   1. Inflation needs to be the primary objective of the central bank. In order to score perfectly, the central bank needs to have a well-defined point target. Otherwise, it needs to clearly communicate the inflation targeting range, and in particular how it is used in the policymaking process.
   2. In the case of dual-mandate central banks, inflation should be clearly communicated as the primary objective. While central banks may have other objectives, including output and unemployment, those cannot be inconsistent with the primary objective of anchoring inflation and long-term inflation expectations, especially given their near-term tradeoffs with inflation.
   3. Financial stability goals should not take precedence over price stability. Central banks with a mandate for financial stability need to have the macroprudential tools to achieve their goals without sacrificing their price stability objectives. Those without a financial stability mandate need to communicate how they are taking financial stability issues into account in managing relevant tradeoffs.

B. **Transparency of FPAS (9 Points)**: Does the central bank have a well-structured FPAS, with the policy decision and process communicated clearly and effectively? Is data open and accessible, with replicable models/forecasts?
   1. All relevant data used in the decision-making process, including financial variables, should be made publicly available. The core quarterly projection model should be accessible, supplemented with proper documentation in the form of equations (reaction function or loss function), coefficients, codes, and others in order to allow easy replications by the public.
   2. In presenting the forward path for the policy rate, confidence bands need to be presented as well, highlighting that the forecast is conditional upon the best information available at that moment—and should and will change when new data and analysis emerges.
   3. Full-fledged alternative scenarios—illustrating key risks to the baseline scenario—need to be clearly presented, at the same level of clarity and documentation as the baseline scenario.
   4. As forecasts inevitably change when new information and analysis emerge, the rationale for forecast revisions need to be explicitly communicated.

C. **Transparency of Policy Process (7 Points)**: Is the policy decision—with all attendant details of the decision-making process that led to it—communicated to the public in a clear, timely, and meticulous manner?
   1. As a regular process, immediately after announcing the policy decision, the central bank should hold a press conference explaining the decision and the bank's interpretation of the economic developments that led up to it. The release of the decision and forecast, as well as the press conference, should be messaged in a way that is accessible to a wide array of audiences (media, government, financial markets, public, etc.). Minutes and materials should be published, and a livestream and recording of the press conference should be made available.

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[11] The detailed results can be obtained by emailing asyakostanyan@thebetterpolicyproject.org.

2. Central banks should hold regularly-scheduled meetings with market analysts to present the forecast and rationale, as well as to explain key risks associated with the baseline and thinking surrounding alternative scenarios.
3. Understanding the thought process, debates, and deliberations that led to the policy decision is a critical element of transparency. Central banks should publish detailed minutes and voting results, attributed to each Board member.
4. The policy framework, including forecast performance, should be reviewed at least annually, and ideally the framework is reviewed by external and independent bodies.

IV. RESULTS

We apply this methodology to 16 IT central banks, including 10 FPAS (Armenia, Canada, Chile, Colombia, Czech Republic, Georgia, Mexico, New Zealand, Peru, Sweden) and six non-FPAS banks (Australia, Brazil, ECB, South Korea, the United Kingdom, and the United States). The index is as of 2021, end of year. The results are presented in Figure 4 below.

Figure 4. CBT-IT Transparency Index, 2021

Panel A: FPAS Mark I Central Banks
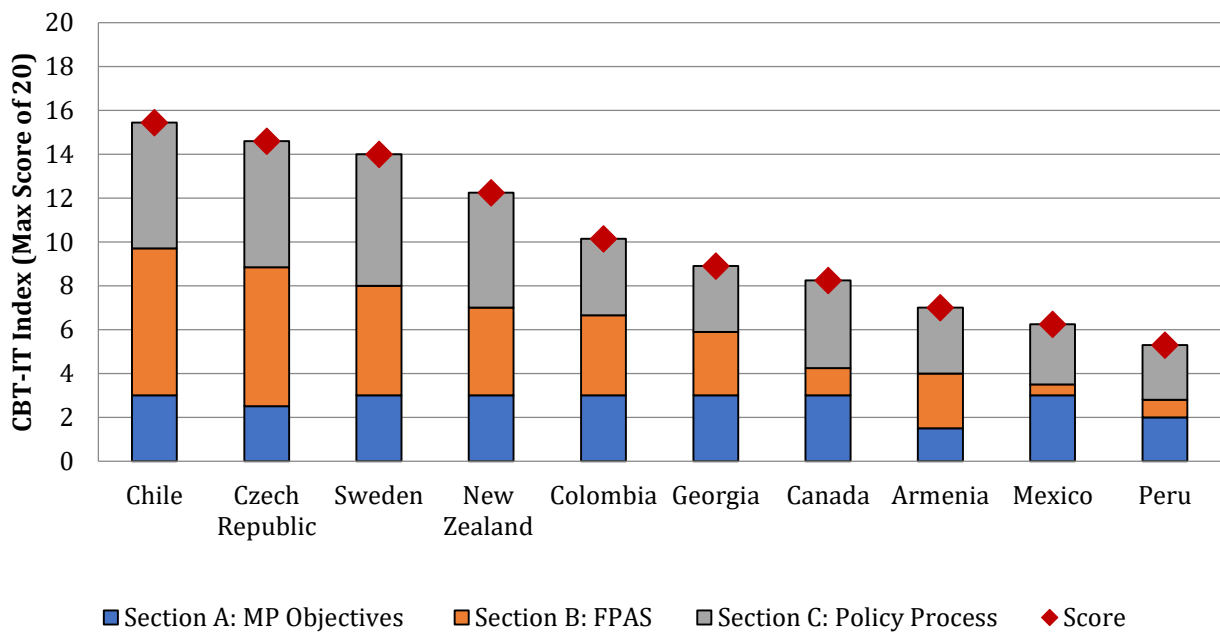
Panel B: Non-FPAS Mark I Central Banks

Source: Author calculations

The results of the CBT-IT Index demonstrate a simple fact: FPAS banks score considerably higher on measures of transparency than non-FPAS banks. While both FPAS and non-FPAS IT central banks receive similar scores for Section A (Monetary Polic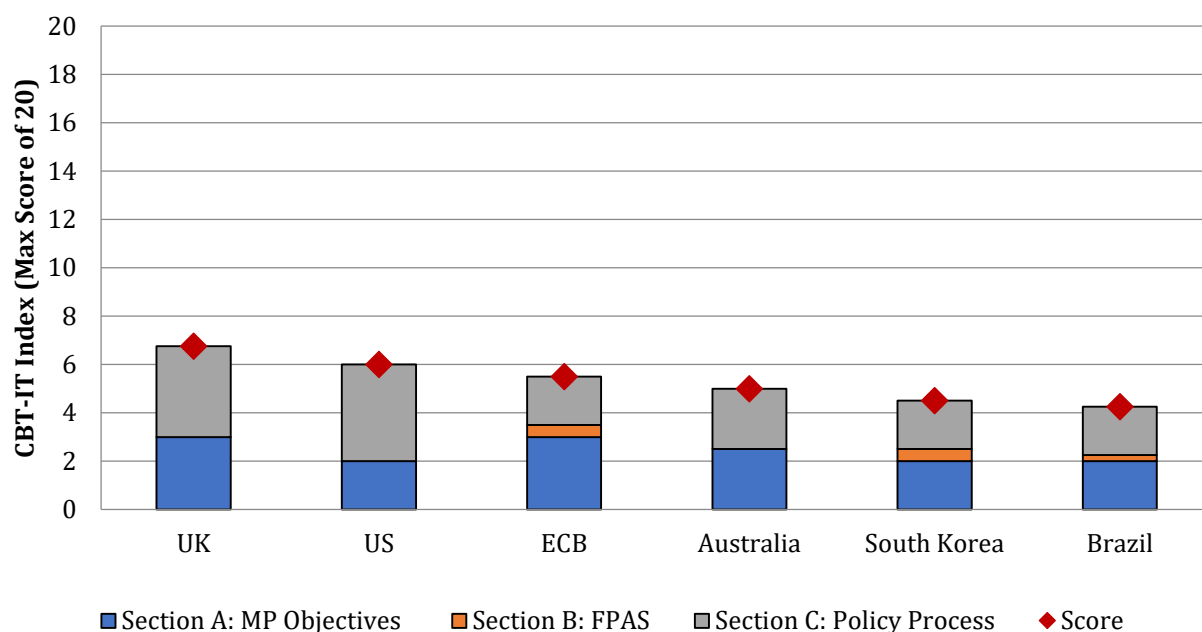y Objectives), with a standard deviation of only 0.54, the difference in the total scores between banks is driven almost entirely by their performance in Sections B (FPAS) and C (Policy Process). Unsurprisingly, central banks that have established a robust Forecasting and Policy Analysis System for making policy decisions—namely, Chile, the Czech Republic, New Zealand, and Sweden—score highly in these two areas. These best-in-class FPAS central banks have devoted considerable resources to implementing and continuously improving FPAS systems, which by default prioritize transparency in communicating analytical frameworks and decision-making processes. On the other hand, non-FPAS IT central banks, such as the Bank of England and others that subscribe to its approach, tend to define objectives well but do not have proper organizational and analytical systems in place to implement a full-fledged inflation targeting regime—much less document and communicate it systematically or transparently—resulting in zero or low scores on FPAS and Policy Process.

Detailed discussions of the results for a handful of these countries, including Chile[12] and the Czech Republic,[13] are available in separate policy papers. The www.thebetterpolicyproject.org/transparency-project website provides access to the full dataset of results, including a deeper dive into the methodology used to measure the index. Below, we present a brief case study of two inflation-targeting central banks with extremely different structural approaches to inflation-targeting: the Reserve Bank of New Zealand and the Bank of England.

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[12] See Fornero, Kostanyan, and Laxton (2021).

[13] See Al-Mashat and others (2018).

V. TAKING TRANSPARENCY TO THE NEXT LEVEL

While FPAS central banks achieve the highest transparency scores in the CBT-IT index, even best-in-class FPAS banks do not approach the top score of 20. The highest scoring central bank in our index, the Central Bank of Chile, achieves only 77% of the total possible score (15.45/20.00), implying a "transparency gap" of 23%. This highlights an important opportunity for central banks to increase transparency. An important question emerges: is it possible to push central bank transparency further?

Figure 5. CBT-IT Transparency Gap among FPAS Central Banks
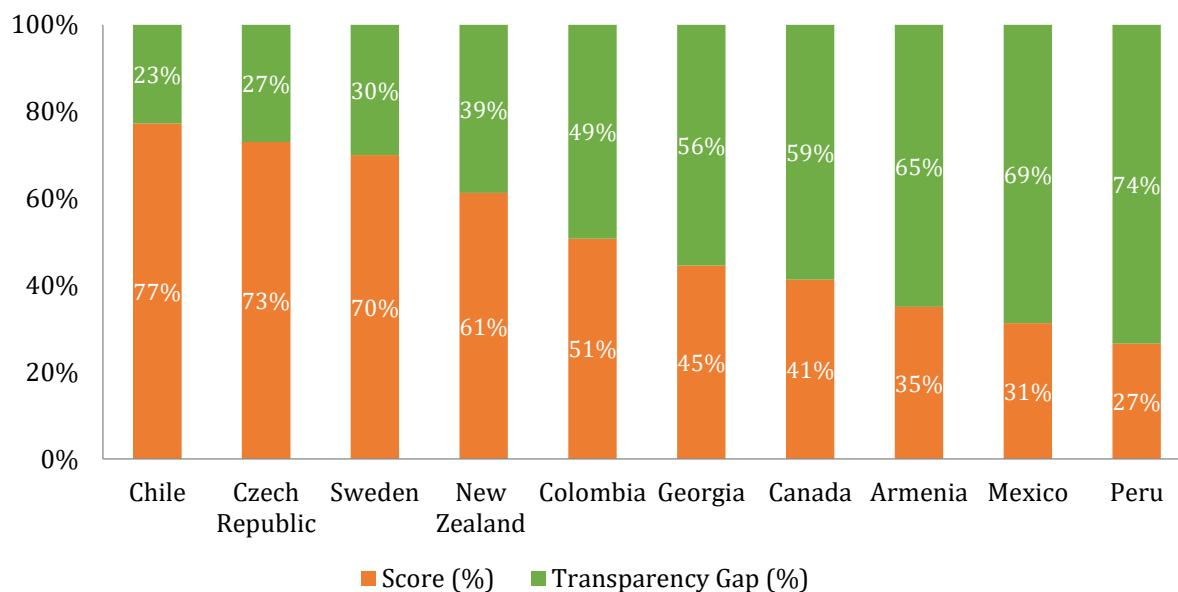
Source: Author calculations

We emphatically answer "yes." For example, the Czech National Bank (CNB), which ranks second in the CBT-IT index, can close its 27% transparency gap by making a few important improvements. In Section A, the CNB could achieve a perfect score by publishing its loss function, or communicating how they are managing the short run output-inflation tradeoff using the loss function. In Section B, full model documentation, as well as publishing a few financial variables, would close the gap for this section. For Section C, a perfect score could be achieved if the CNB provided for external evaluation of the policy framework and forecast performance.

FPAS MARK II

An important series of questions emerge once the above transparency gap is filled: can the standard for central bank transparency be pushed even further? Where might there be space to expand transparency? Is the existing FPAS framework able to accommodate this?

As discussed in Archer and others (2022), while the FPAS system still remains a best-in-class policymaking structure, one of the major limitations of the FPAS system is its inability to apply its systematic decision-making framework to dealing with questions of real risk and uncertainty. While baseline and alternate scenarios do serve as some form of risk assessment, this forecast-based approach is vulnerable to knowledge gaps of current macroeconomic dynamics and uncertainty about future risks and shocks. The standards for transparency that FPAS banks set for themselves on other criteria are noticeably lacking when it comes to addressing this risk and uncertainty. For example, the

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Reserve Bank of New Zealand (RBNZ) tries to address this concern by adopting a "policy of least regrets." However, the RBNZ has been unable to communicate the link between this policy objective and likely policy behavior, resulting in a major transparency gap that makes it difficult to anticipate the bank's actions or perform accountability. This inability to adequately deal with uncertainties in a systematic way calls out for new approaches to policymaking, which becomes especially apparent in times of heightened uncertainty.

This new policymaking framework—referred to as FPAS Mark II—applies a "monetary policy as risk management" (MPRM) approach within the systematic and organizational structure and processes of the original FPAS system. FPAS Mark II shifts the central bank's focus away from its role of "expert forecaster" toward a role of "risk manager" to deal systematically and transparently with situations of great uncertainty. From the perspective of transparency, the FPAS Mark II system is better able to communicate the uncertainty that lies at the core of decision-making. Instead of imbuing the public with a sense of confidence about the most likely path of an unknowable future, FPAS Mark II provides a systematic framework to deal with uncertainty, without shying away from the fact that future shocks and uncertainties cannot be precisely predicted. This is a truer and more impactful form of transparency, one that can improve the pursuit of transparency initially adopted by the FPAS framework.[14] As the FPAS Mark II is further developed, we will evaluate what enhanced transparency in this context could look like, and will accordingly adopt changes to the methodology (including potential changes to the components of the CBT-IT) to reflect this new framework for transparency.

VI. CONCLUSION

Transparency is an important foundation of effective monetary policymaking. The CBT-IT index provides an important new measure for transparency among FPAS and non-FPAS inflation-targeting central banks. As the results demonstrate, central banks that have implemented the FPAS' systematic approach to policymaking and communications unsurprisingly achieve the highest transparency scores on the CBT-IT index. More importantly, however, we emphasize that transparency on its own is not a guarantee for policymaking success. Rather, it is an when transparency is prioritized as part of the wider FPAS, it serves as an *essential ingredient* of good policy. The FPAS approach to policymaking, communications, and transparency provides important advantages over purely discretionary approaches to inflation targeting, and achieves significantly better outcomes in anchoring long-term inflation expectations to the inflation target. The cross-country comparison of CBT-IT index aims at stimulating research interest to dig deeper into nuances of transparency in specific country and policy contexts. Central banks seeking to increase transparency—even those considered best-in-class, which have fully implemented the first iteration of the FPAS (known as FPAS Mark I)—should evaluate the benefits of the latest evolution of the FPAS, known as FPAS Mark II. This system provides more systematic methods for analyzing and dealing with risks and uncertainty, further improving policymaking, welfare, and transparency outcomes. We refer the reader to Archer and others (2022).

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[14] See Archer and others (2022).

APPENDIX.

CASE STUDY: NEW ZEALAND AND THE UNITED KINGDOM

A comparison of the Reserve Bank of New Zealand (RBNZ) and the Bank of England (BOE)—with their vastly different approaches to policy decision-making—provides the reader with information to assess the value of the FPAS and high transparency in anchoring long-term inflation expectations, as well as the implications of not adopting a structured FPAS.

HISTORICAL CONTEXT

Reserve Bank of New Zealand

In 1997, the RBNZ became the first central bank to develop and implement the FPAS to support full-fledged flexible-inflation targeting. In the decades preceding adoption of IT in the late 1980s, New Zealand faced enormous price instability, particularly in the 1970s and 1980s, when annual inflation frequently ranged between 10 and 20 percent. The Reserve Bank Act of 1989 turned the RBNZ into the world's first "inflation targeting-lite" central bank, defining price stability—with a clear inflation target range of zero to two percent—as the single objective of the central bank, in addition to other fundamental measures related to central bank independence, transparency, and accountability. These measures enabled the RBNZ to successfully bring inflation down to its target of two percent by 1991, but at significant costs to output and unemployment. Thus, while the inflation targeting-lite approach was successful in taming high and volatile inflation, it was poor at managing the short-run output-inflation tradeoff, which were problematic for making effective policy decisions during times of lower inflation. These limitations necessitated the adoption of the FPAS, which introduced the systematic approach to policymaking, communications, and transparency outlined in Section II.[15]
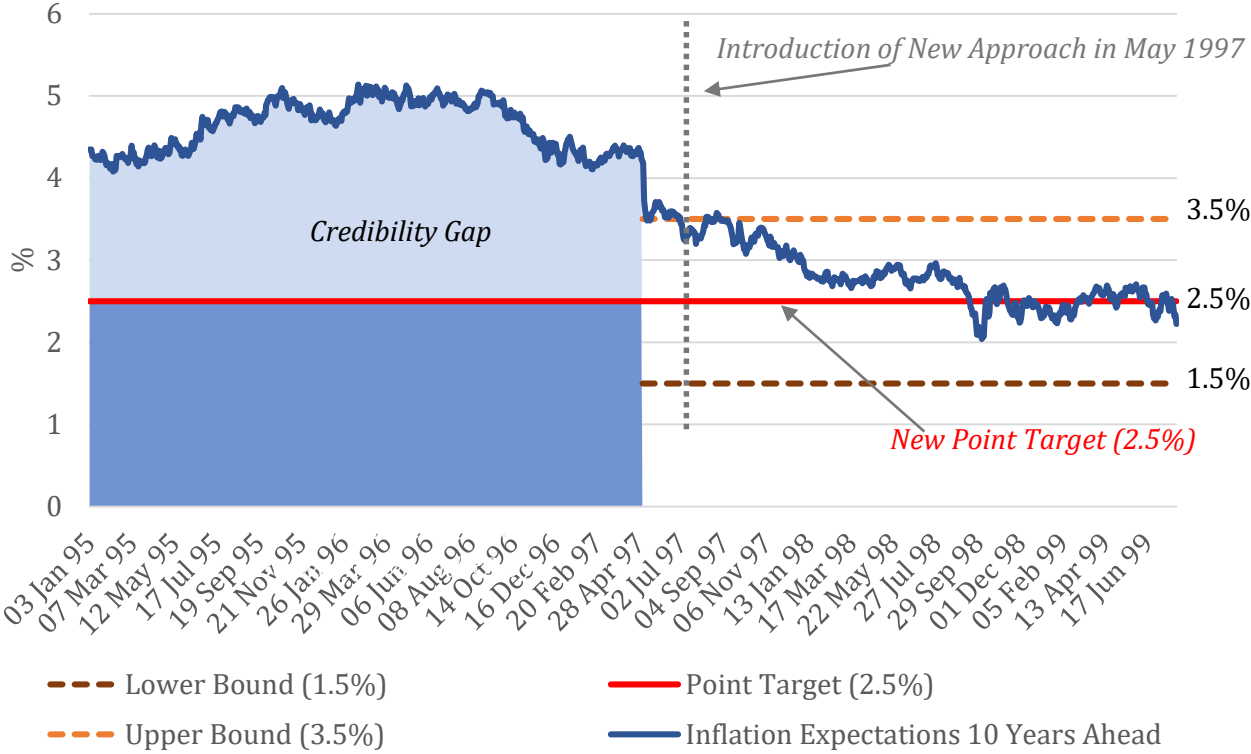
Bank of England

The United Kingdom adopted inflation-targeting in early October 1992. However, this initial regime did not allow for central bank independence, as monetary policy was not the responsibility of the Bank of England, but of the Chancellor of the Exchequer.[16] Unsurprisingly, even though inflation was compatible with the targeted inflation range during this period, financial-market participants still remained skeptical that inflation would remain low in the future. As a result, long-term inflation expectations (based on comparisons of the yields on indexed and non-indexed bonds) remained well above the upper end of the inflation-targeting range, hovering between four and five percent. Based on this experience, significant changes to the policymaking framework were introduced in May 1997, when the Monetary Policy Committee (MPC) of the Bank of England was created and given responsibility for making interest rate decisions. A well-defined point target for inflation was introduced, central bank instrument independence was formally established, and the MPC became responsible for communicating monetary policy decisions through the Inflation Report. As shown in Figure A.1, the introduction of the new approach (with clear inflation targeting and central bank independence) caused the market to give the Bank of England the benefit of the doubt. Long-term inflation expectations (based on comparisons in yields between indexed and non-indexed bonds) fell

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[15] For a detailed history of the adoption of FPAS and the history of transparency in the Reserve Bank of New Zealand, refer to Haworth, Kostanyan, and Laxton (2019).
[16] See Vickers (1999).

by 50 basis points to the upper end of the target range within days of the announcement, and converged within six months to well within the target range of 1.5 to 3.5 percent. Within a year or so of these changes, 10-year ahead inflation expectations had become anchored to the long-run point target.[17]

Figure A.1. Market-Based Measure of Inflation Expectations 10-Year Ahead, United Kingdom, January 1995 – July 1999

Data Source: Bank of England

However, this approach of inflation-targeting on its own, in the absence of FPAS, was insufficient to permanently anchor long-run inflation expectations. As the subsection below highlights, the initial market response to the Bank of England's introduction of a more formal monetary policymaking process—with an independent central bank given policymaking power to achieve a point target—can be interpreted as not being permanent, as medium- and long-term inflation expectations continue to be high.

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[17] See Isard and Laxton (2000).

BENEFITS OF FPAS AND TRANSPARENCY

Anchoring Long-Term Inflation Expectations

Figure A.2. Market-Based Measure of Long-Term Inflation Expectations in the United Kingdom

Non-FPAS Central Bank (BoE)
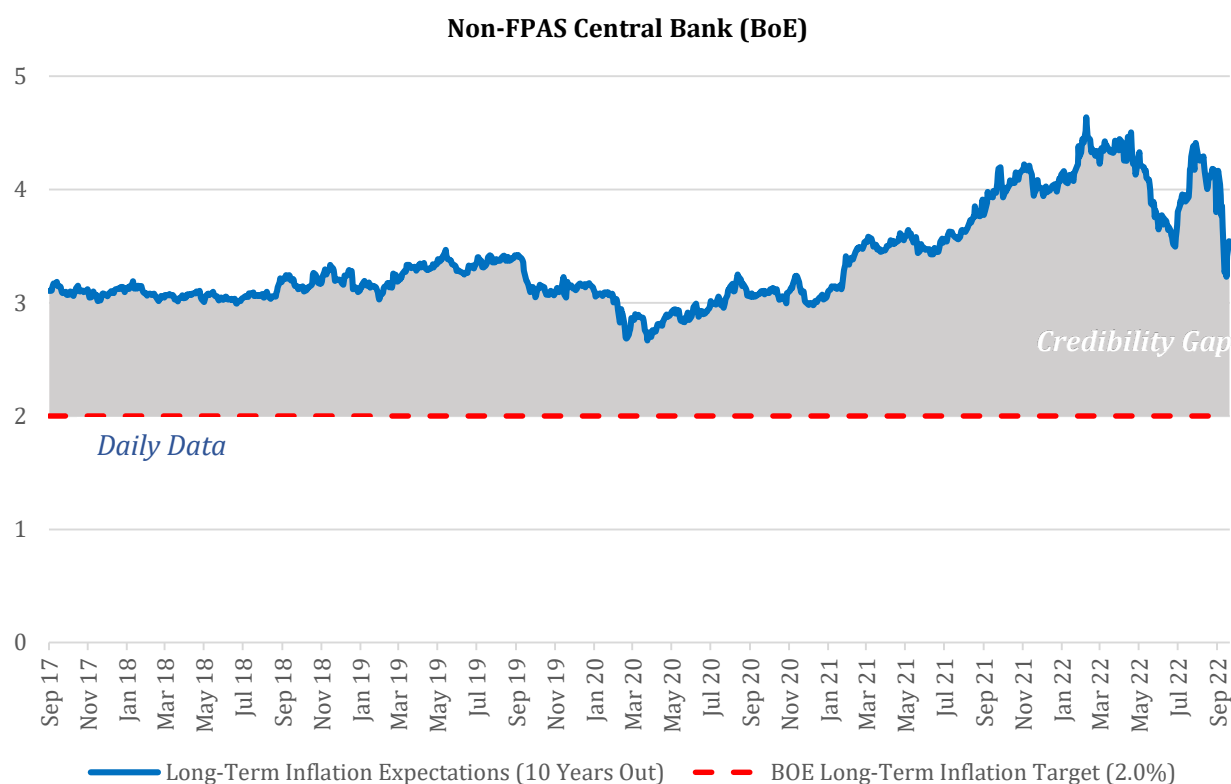
Data Source: Reserve Bank of New Zealand; Bank of England

The non-FPAS Bank of England can serve as a good example of the approach of discretion. This was initially successful in anchoring long-term expected inflation to the target in the late 1990s, but the data suggests that the purely discretionary 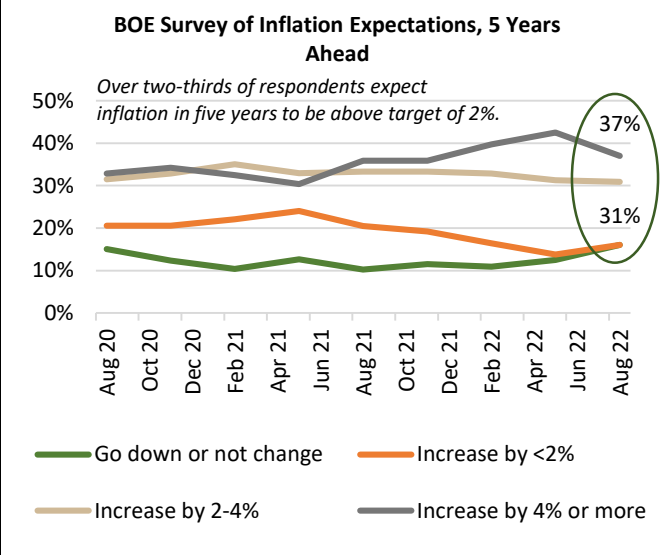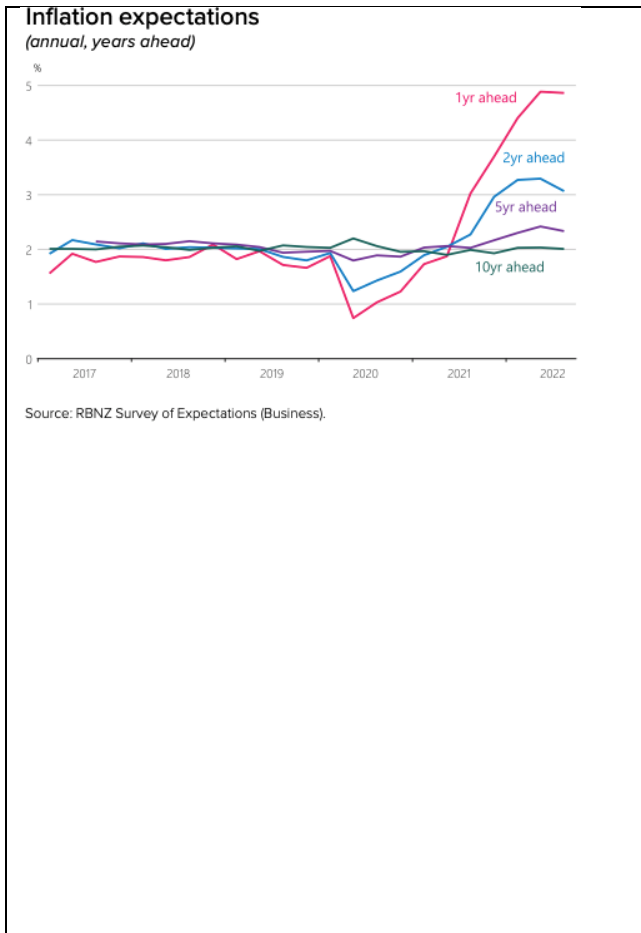policymaking approach in the United Kingdom did not bring inflation expectations down to the target in a lasting way. As of October 18, 2022, a proxy for 10-year inflation expectations in the United Kingdom (10-year breakeven bond yields) stands at 3.54%, over 150 basis points above the 2.00% long-term target inflation rate. The delta between expectations and the target represents the central bank's credibility gap; in the case of the Bank of England, the data indicates that the credibility gap would appear to be quite large. [18] Other measures of inflation expectations, including those based on surveys of market expectations, are presented in Table A.1. While perfect apples-to-apples comparisons to inflation expectations of FPAS central banks are

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[18] The reader might ponder whether this credibility gap in the United Kingdom could be the result of not investing in an FPAS system. The literature claims that a transparent, systematic FPAS approach to policymaking boosts central bank accountability and monetary policy efficacy. See, for example, Clinton and others (2015) and Adrian, Laxton and Obstfeld (2018).

difficult to make due to issues of data availability (the best FPAS central banks are in economies with limited bond markets), survey-based long-term inflation expectations in FPAS central banks, such as the Reserve Bank of New Zealand, tend to be significantly lower, as in the table below.

Table A.1: Comparison of Reserve Bank of New Zealand and Bank of England

RBNZ	BOE
• RBNZ invested substantial resources developing an analytical framework to support forward-looking monetary policy, what they refer to as the FPAS, which they unveiled in a conference in 1998. • RBNZ has been using it successfully since then, and recently extended the framework to enshrine the dual mandate into central bank law and the policy targets agreements. (Hayworth, Kostanyan, and Laxton)	• MPR has been released since May 1997, always including exogenous interest rate. • Under constant interest rates, the inflation projection always returns back to the target. • People have never been able to understand how this could be possible. • Fundamentally inconsistent with the basic principles of monetary policy. • To many, this looks like a policy of full discretion, and runs the risk of repeating errors of 1970s Great Inflation
A) Clearly-defined endogenous policy rate path 	A) Exogenous interest rate forecast (market or constant)
B) High levels of transparency and accountability help anchor medium- and long-term inflation expectations	B) Impossible to understand monetary policy, resulting in medium- and long-term inflation expectations ratcheting upwards

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Inflation expectations
(annual, years ahead)

Source: RBNZ Survey of Expectations (Business).

Chart 2.8: Medium-term measures of inflation expectations have fallen back
Financial market measures of inflation compensation (a)

BOE Survey of Inflation Expectations, 5 Years Ahead

Over two-thirds of respondents expect inflation in five years to be above target of 2%.

Source: Monetary Policy Report, Bank of England (August 2022); Moentary Policy Statement, Reserve Bank of New Zealand (August 2022); Bank of England/Ipsos Inflation Attitudes Survey (August 2022)

Part A of Table A.1 presents inflation forecasts for RBNZ and BoE, respectively, as they are presented in each central bank's MPR. The RBNZ provides a forward path for inflation based on the current policy rate and projected future changes, transparently communicating the policy framework and how the RBNZ might be thinking about making changes to the forward path of the policy rate in the future. This communication and transparency are key to strengthening the central bank's credibility and helping anchor long-run inflation expectations. The BoE's inflation estimate is instead based on a constant interest rate (CIR) of 1.75%, as shown in Part A of Table A.1. The Bank of England also publishes an inflation projection based on market interest rates, as shown in the same table, which conflicts with foundational principles of monetary policy. Projections based on market interest rates are also not consistent with the basic ingredients of a forward-looking approach, where the role of the forecast is to ask what adjustments need to be made to market interest rates to be consistent with the central bank achieving its fundamental policy objectives

Further Thoughts

Given the benefits of FPAS, the question emerges as to why the Bank of England has preferred a discretionary approach to policymaking. In the case of the Bank of England, we present a series of statements by past BoE leaders, which may offer some clues. We also provide our interpretation of these quotes when taken in the context of Table A.1, but encourage the reader to form their own judgments.

Part of the reason why the Bank of Canada and RBNZ were able to develop and implement better systems for policymaking may have been their governance structure, where decision-making power in these central banks was vested in the Governor rather than a MPC. But it is likely that the issue is more complex than that. Speaking about the economics profession, former BoE Governor Mervyn King, makes the following statement:

> "I'm criticising the ideas of the economics profession, which have come to influence central banks, it's the ideas that are wrong. And I don't criticise individuals in it, because I think you can't blame them first, you know, going along with what is a conventional wisdom (sic)."

Charles Goodhart, one of the United Kingdom's leading economists and a former member of the BoE Monetary Policy Committee (MPC), has argued,

> "A great advantage of restricting the choice to what to do now, this month, is that it makes the decision relatively simple, even stark. Given the difficulties involved already in achieving majority agreement in the MPC on this simple decision, the idea of trying to choose a complete time path by discretionary choice seems entirely fanciful and counterproductive."

Goodhart's thinking can be read to argue that central banks should only focus on near-term time horizons when making policy decisions. This approach is quite different from how other economists understand the monetary policy transmission mechanism. A discretionary approach that does not give sufficient weight to the future path of the policy rate leaves significant information gaps in the market, which can have detrimental impacts on central bank credibility and can cause long-term inflation expectations to ratchet upwards.

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