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Measuring monetary policy transparency in Uruguay[☆]

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ABSTRACT

The adoption of inflation-targeting regimes has led central banks to devote considerable efforts to improve their transparency. Following this trend, several authors have developed tools to measure and compare the levels of transparency of central banks. This paper undertakes this task for the Central Bank of Uruguay by applying two different transparency indexes. The first one was designed in the mid-2000s and has been applied in a sample with a significant number of countries. The second index is based on a new approach that seeks to reflect the best practices of the most advanced inflation-forecast-targeting regimes.

1. Introduction

In recent decades, a growing interest in the institutional framework of monetary policy has developed. Specifically, the institutional reforms introduced in central banks have focused on three main areas. First, central banks' organic laws have suffered adjustments regarding their operations and their links with other branches of government, marking significant progress in terms of central bank independence. As a counterpart to this greater autonomy, efforts to improve central bank transparency and accountability have translated into changes in the design of monetary policy, particularly with the introduction of inflation-targeting regimes.

Transparency contributes to greater monetary policy effectiveness and lays the foundation for adequate accountability (Blinder et al., 2001; De Haan et al., 2007). It is reflected in the quantity, quality and timeliness of information that a central bank gives the public in regard to the monetary policy decision-making process (for example, the communication of objectives, the publication of statistics and forecasts, and the publication of the explanations of the decisions made). Considerable resources and efforts have been devoted to improve central bank transparency after the adoption of inflation-targeting regimes (Adrian et al., 2018; Clinton et al., 2015). As a result, several authors have developed tools to measure and compare the transparency levels of central banks. Examples of these are the measurements by Cukierman et al. (1992), Fry et al. (2000), Jácome and Vázquez (2005), Eijffinger and Geraats (2006), Dincer and Eichengreen (2007), Crowe and Meade (2008), Dincer and Eichengreen (2010) and Dincer and Eichengreen (2014), among others. These attempts to build objective metrics of standards for central bank transparency are important milestones for policymakers, not only because they provide a benchmark for monetary policy transparency, but also because they provide detailed information for identifying weak or challenging areas for improvement.

Uruguay is not exempt of this trend. The 2002 financial crisis and its costs in terms of international reserves prompted the abandonment of the flotation bands exchange rate regime and the gradual adoption of an inflation-targeting regime. In order to regain reputation and anchor market expectations, the Central Bank of Uruguay (BCU) defined a target in terms of the monetary base. From

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the beginning of 2004 until the first half of 2005, a more favorable macroeconomic context made it possible for monetary policy to place greater focus on the evolution of inflation. Later, toward the end of 2005, the BCU ceased to announce the trajectory of the monetary base, proceeding to use all monetary policy instruments in order to meet the projected level of inflation.

Inflationary pressures experienced during 2007¹ necessitated a change in the design of monetary policy in Uruguay: The abandonment of the monetary aggregates' target led to designating the interest rate as the main monetary policy instrument (one-day inter-bank loan call rate). Specifically, the new target was defined within a "flexible corridor" where the floor was determined by the central bank's one-day deposit facility rate and the ceiling was defined by the lending facility rate.² Additionally, the BCU began to rely on the use of other instruments to complement the management of the monetary policy rate, an example of this are the increases in the reserve requirement rates introduced in mid-2008 as well as the elimination of their remuneration.

This paper seeks to quantify the BCU's level of transparency. To our knowledge, except for [Dassatti and Rodríguez \(2008\)](#), there are no previous attempts to measure the transparency of the BCU. In the case of [Dassatti and Rodríguez \(2008\)](#), their analysis is part of the application of the [Jácome and Vázquez \(2005\)](#) methodology to quantify the level of independence of the Central Bank of Uruguay. Our paper applies the [Dincer and Eichengreen \(2014\)](#) and [Al-Mashat et al. \(2018\)](#) methodologies with the intention of not only assessing the transparency of the BCU but also comparing Uruguay level to other countries. The [Dincer and Eichengreen \(2014\)](#) index analyzes the notion of transparency in terms of the dimensions proposed by [Eijffinger and Geraats \(2006\)](#) (political, economic, procedural, policy and operational). The [Al-Mashat et al. \(2018\)](#) index, on the other hand, focuses only on inflation-targeting central banks and, therefore, evaluates transparency in terms of more specific and strict parameters.

The rationale for choosing these indexes is twofold. First, we preferred not to focus on measures based on surveys, because these may be subject to measurement errors caused by the respondent's subjective perception. Second, in order to enrich the comparison with Uruguay, the ideal would be to use an index applied to a considerable number of countries. Although these criteria are satisfied mainly for the [Dincer and Eichengreen \(2014\)](#) index³, we decided to further the analysis with the calculation of the [Al-Mashat et al. \(2018\)](#) index because its result may identify existing transparency gaps in benchmarks for inflation-targeting regimes.

The result of the analysis positions Uruguay above the median of the sample of [Dincer et al. \(2022\)](#) but delivers a much more modest result in terms of the [Al-Mashat et al. \(2018\)](#) index. Although the recent changes introduced in the design of monetary policy translated into an improvement in terms of the first metric, the magnitude of the impact was considerably smaller in the case of the [Al-Mashat et al. \(2018\)](#) index. This is consistent with the fact that Uruguay is still in the process of becoming a fully fledged inflation-targeting regime; hence, the weaknesses identified in the [Al-Mashat et al. \(2018\)](#) index may work as an input for policymakers to organize the next steps of this process.

The rest of the document is organized as follows. [Section 2](#) describes the literature on central banks' transparency and its quantification. [Section 3](#) describes the set of information used for the assessment of the BCU's transparency. [Section 4](#) analyzes the degree of transparency of the BCU in terms of the [Dincer and Eichengreen \(2014\)](#) and [Al-Mashat et al. \(2018\)](#) methodologies, comparing Uruguay to other countries. Finally, in [Section 5](#), we discuss some policy implications and conclude.

2. Literature review

2.1. Transparency in the conduct of monetary policy

From a theoretical point of view, the transparency of monetary policy is linked to the models of temporal inconsistency ([Barro and Gordon, 1983](#); [Kydland and Prescott, 1977](#)), which analyze the credibility problem of a central bank. According to these models, in the absence of a central bank's clear and binding commitment to fight inflation, agents can expect the monetary authority to be tempted to seek higher inflation than expected in order to surprise the public and attain temporary results in terms of lower unemployment. However, agents are aware inflation expectations will be higher, and therefore, the level of inflation in the economy will not be low. On this matter, the [Barro and Gordon \(1983\)](#) model establishes that a higher level of transparency helps reduce inflation bias and the problem of temporal inconsistency, thus improving the credibility of the central bank in conducting monetary policy.

In practice, since the adoption of inflation-targeting regimes, various central banks have begun to implement strategies with the objective of increasing transparency in monetary policy ([De Haan et al., 2007](#)). The monetary authority's ability to anchor inflation expectations within objectives can measure the success of monetary policy; thus, communication becomes a tool central banks may use in order to guide expectations, reduce interventions and increase efficiency in conducting monetary policy ([Blinder et al., 2001](#); [Chortareas et al., 2002](#); [Clinton et al., 2015](#); [Hahn, 2002](#)).

When focusing on the application of the term *transparency* in monetary policy, [Winkler \(2000\)](#) believes that the literature applies too narrow a vision, by identifying transparency with the mere disclosure of information. Following this reasoning, he focuses on the way in which central banks should transmit the information to ensure that it is understood by the public.

Finally, although there is a widespread literature on the benefits of central bank transparency, there is also some hesitancy. For

¹ Explained by external factors such as the rise in the price of commodities and internal factors such as the increase in labor costs and a greater dynamism in private demand.

² In the beginning, the range for the call rate was defined between 4% and 6%, but the persistence of inflationary pressures in the economy determined successive upward adjustments.

³ The sample of countries for the [Al-Mashat et al. \(2018\)](#) index is considerably smaller than the sample of [Dincer and Eichengreen \(2014\)](#) and the detailed results of its calculation are not entirely available.

instance, [Lustenberger and Rossi \(2018\)](#) states that central bank openness may give the impression that policymakers know more than they do, which can backfire against them because agents may rely too much on the declarations from the monetary authority. Also, contrary to what some theoretical papers have stated, the empirical evidence from [Candian \(2021\)](#) shows that more frequent communication from the central bank increases both the level and dispersion of agents' forecast errors.

2.2. Central bank transparency indexes

Several attempts to measure the degree of independence and transparency of central banks include those by [Eijffinger and Geraats \(2006\)](#), [Cukierman et al. \(1992\)](#), [Jácome and Vázquez \(2005\)](#) and [Crowe and Meade \(2008\)](#).

Following the dimensions defined by [Geraats \(2002\)](#), [Crowe and Meade \(2008\)](#) build a central bank transparency index for a group of countries (sample of advanced and emerging countries) for the period 1998–2006. They find that the increase experienced in central banks' transparency is mainly explained by the economic and policy transparency dimensions. However, they observe that the most significant increase in the index occurred for developed countries, which is explained by the fact that in many cases an inflation-targeting regime (IT) was already implemented, which entails the adoption of accountability and transparency practices.

[Dincer and Eichengreen \(2007\)](#) find a limitation in the [Fry et al. \(2000\)](#) index, since the metric is based on responses to a central banks' survey, which may be influenced by respondent's subjectivity. As a consequence, they replicate and extend the index defined by [Eijffinger and Geraats \(2006\)](#), based on information extracted from websites and reports published by central banks (100 central banks during the period 1998–2005). They find that the most transparent central banks were, in descending order, the Reserve Bank of New Zealand, the Swedish Riksbank, the Bank of England, the National Bank of the Czech Republic, the Bank of Canada, the European Central Bank, and the Central Bank of the Philippines.

Subsequently, [Dincer and Eichengreen \(2014\)](#) update their index for the period 1998–2010 adding countries not considered in previous versions of the DE index (reaching a sample of 120 countries).⁴ They conclude that central banks with inflation-forecast-targeting (IFT) have the highest levels of transparency (reaching values close to 15, the maximum value of the index). Specifically, the case of the Central Bank of the Czech Republic stands out, with a value of 14.5. This dataset has been recently updated ([Dincer et al., 2022](#)) and now includes information for 112 central banks (nearly 150 countries), from 1998 until 2019.

However, according to [Al-Mashat et al. \(2018\)](#), the DE index has limitations. First, it is difficult to compare levels of transparency across different monetary policy regimes. In addition, all countries with IFT regimes register levels of the DE index very close to the maximum, because given the way in which the DE index is designed, it is difficult to differentiate across IFT regimes or between countries with IFT regimes and countries that do not apply IFT in their monetary policy. Finally, after the international financial crisis, a transparent communication about the interaction between the monetary and macroprudential policies has become increasingly important.

In response to these limitations, [Al-Mashat et al. \(2018\)](#) develops a new transparency index (CBT-IT), focusing only on central banks with IFT regimes. The new index is organized into three broad categories: transparency about objectives, transparency about the forecasting and policy analysis system, and transparency about the policy process.⁵ According to the authors, by focusing solely on IFT central banks, the new index achieves a more detailed analysis of them, providing actions to implement to improve their transparency levels. Their index is calculated for the case of the Central Bank of the Czech Republic, which again displays high levels of transparency under the new index.

Later, [Kostanyan et al. \(2022\)](#) add to the discussion of the transparency measures from a more detailed perspective, by analyzing the different characteristics of FPAS (forecasting and policy analysis system) and non-FPAS central banks. Specifically, the main difference between these two type of central banks is determined by the way in which they achieve their ultimate objective. This translates into the "organizational characteristics, communications mechanisms, and levels of accountability and transparency that make FPAS a *system* rather than an *idea*" ([Kostanyan et al., 2022](#), p.8).

3. Data

Both [Dincer and Eichengreen \(2014\)](#) and [Al-Mashat et al. \(2018\)](#) indexes were calculated without any modification of its statements nor the introduction of any assumptions. The set of information used for the assessment of the BCU's transparency metrics is not only based on the organic law but also on monetary policy reports, minutes and statements issued by the central bank, as well as staff's working papers. This information is publicly available on the BCU's website.⁶

4. Results: The case of Uruguay

As mentioned earlier, except for [Dassatti and Rodríguez \(2008\)](#), there are no previous attempts to measure the transparency of the BCU. In the case of [Dassatti and Rodríguez \(2008\)](#), the assessment is part of the application of the [Jácome and Vázquez \(2005\)](#)

⁴ The new version of the DE index includes data from the following central banks: Angola, Azerbaijan, Bosnia, Botswana, Cambodia, Cayman Islands, Curacao, Iran, Lebanon, Macao, Macedonia, Mozambique, Samoa, Seychelles, Tanzania, Tonga, Venezuela, Laos, The Maldives and Syria.

⁵ The questions included in each of the dimensions are detailed in [Appendix C](#).

⁶ <https://www.bcu.gub.uy/Paginas/Default.aspx>

methodology to quantify the independence of the BCU. According to their quantification for 2008⁷, the transparency subindex for Uruguay is 0.75 (indicator range: 0–1). This result is compared with a value of 1 for Chile and a value of 0.5 for Peru. During this period the Uruguayan parliament was discussing a reform project for the organic law of the BCU; Dassatti and Rodríguez (2008) also analyze the impact of the changes proposed on the project, arriving at a value of 1 for the transparency subindex (this value is the same when the analysis is based on the organic law that was finally approved).

We first calculate both the Dincer and Eichengreen (2014) and Al-Mashat et al. (2018) indexes for the Central Bank of Uruguay during 2019, and later we analyze the impact of the changes introduced in the communication of monetary policy in Uruguay in terms of the new values reached on both metrics.

4.1. Dincer-Eichengreen index

The central bank transparency index of Dincer and Eichengreen (2014) is organized according to the dimensions defined by Geraats (2002): political, economic, procedural, policy and operational transparency. The value of the global index is the sum of the values obtained in each of these dimensions.

The calculation of the index for Uruguay reaches a value of 8 (the maximum value of the index is 15), which is broken down into the following values for each dimension: 2.5 out of 3 in political transparency, 1.5 out of 3 in the dimension of economic transparency, 0 out of 3 in procedural transparency, 2.5 out of 3 in policy transparency, and 1.5 out of 3 in the operational transparency dimension.

4.1.1. Political transparency (2.5 out of 3)

The components of the political transparency dimension are the following:

- Whether there is a formal statement of the objective(s) of monetary policy, with an explicit prioritization in case of multiple objectives. It takes the value of 0 if there are no formal objectives, 0.5 if there are multiple objectives but without prioritization, and 1 if there is a primary or multiple objectives with an explicit prioritization criterion.
- Whether the primary objective is quantified, taking the value of 1 if it is so and 0 otherwise.
- Whether there is a formal contract or an institutional agreement between the monetary authority and the government, taking the value of 1 if it is so and 0 otherwise.

According to BCU's Organic Law (Art. 3), the Central Bank of Uruguay will have as primary purposes:

- Price stability that contributes to growth and employment objectives.
- The regulation of the operation and supervision of the payment system and the financial system, promoting its soundness, solvency, efficiency and development.

Given that the text does not include an explicit prioritization criterion, the assigned score for the first item in this dimension is 0.5.

The second item assesses whether the primary objective is quantified. We assign a value of 1 to this item because the BCU explicitly quantifies its primary objective in each of the communication documents issued by the Monetary Committee.

Finally, we also assign a value of 1 for the last item of the political transparency dimension because the Organic Law of the BCU (Art. 41) establishes the creation of a Macroeconomic Coordination Committee, comprising by the Minister of Economy and Finance and two other officials from his department and three members of the Board of the BCU. According to the Organic Law, the functions of this Committee are the following: the sharing of information related to central bank powers and general economic policy, the establishment of the price stability goal to which the Bank commits itself and the general exchange regime. In case of a lack of agreement between the representatives of the Bank and the Ministry, the government will decide.

4.1.2. Economic transparency (1.5 out of 3)

The components of the economic transparency dimension are the following:

- Whether the basic economic data relevant for the conduct of monetary policy is publicly available, taking the value of 0 if there are quarterly time series of at least 2 out of the 5 relevant variables (money supply, inflation, GDP, unemployment and capacity utilization), 0.5 if quarterly time series are published on at least 3–4 of the 5 relevant variables, and 1 if quarterly time series exist for all relevant variables.
- Whether the central bank publishes the macroeconomic models used for its analysis, taking the value of 1 if it is so and 0 otherwise.
- Whether the central bank regularly publishes its macroeconomic predictions, taking the value of 1 if quarterly numerical forecasts for inflation and output for the medium term are published, 0.5 if forecasts are published for one of the two variables or in case the frequency is less than quarterly, and 0 if there are no publications in this regard.

The item in which we assign the value of 1 is the one associated with the publication of the macroeconomic models used for the

⁷ BCU Organic Law of 1995.

analysis performed on the BCU because the staff's working papers in this regard are published on the BCU website.

In contrast, the other two items are assigned a value of 0.5 (item a) and 0 (item c). The score associated to item (a) is justified in the existence of publicly available time series for three out of the five relevant variables. Specifically, the BCU publishes time series for the following variables: money supply, inflation and GDP. The unemployment rate is calculated and published by the National Statistics Institute (INE), while there are no publicly available data about the capacity utilization. Finally, item (c) has a score of zero because the BCU does not publish its own macroeconomic forecasts. Although the index punishes this with a zero value, the fear of an undesirable effect on expectations justifies this lack of information.

4.1.3. Procedural transparency (0 out of 3)

As can be seen, the dimension where less progress has been made is the one associated with procedural transparency. Explicitly, this dimension is divided into three aspects:

- Whether the bank provides an explicit policy rule or strategy (value of 1) or not (value of 0).
- Whether the central bank publishes the policy deliberations within a reasonable time, taking the value of 0 in case it does not comply or does so with delays (more than eight weeks), and 1 in case it publishes the complete minutes of the meetings, including a discussion of the arguments.
- Whether the central bank reveals the process that led to each decision on the level of its main operating instrument or objective, taking the values of 0 and 1 according to the criteria mentioned in the previous point.

As will be shown in Section 4.3, this dimension experiences a significant improvement through the changes introduced when conducting monetary policy during 2020.

4.1.4. Policy transparency (2.5 out of 3)

The components of the policy transparency dimension are the following:

- Whether the decisions associated with the main operating instrument or the main monetary policy objective are announced promptly, taking the value of 1 if the announcement is made on the same day they are implemented and 0 otherwise.
- Whether the central bank publishes explanations about its policy decisions, taking the value of 1 if it always does, 0.5 if it does so only superficially or in the face of changes, and 0 if it never does.
- Whether the central bank publishes an explicit reference to its possible future actions (at least quarterly), taking the value of 1 if it is so and 0 otherwise.

The only item in which Uruguay does not perform at the highest level is the one associated with the publication of explanations about the central bank's policy decisions. Again, in Section 4.3 we will show how the new changes introduced during 2020 had an impact on this dimension.

4.1.5. Operational transparency (1.5 out of 3)

Finally, the components of the operational transparency dimension are the following:

- Whether the central bank regularly evaluates the achievement of its policy objectives, taking the value of 0 if it does not or if it is done with a very low frequency, 0.5 if it is performed without major explanations in case of deviations, and 1 if it is done including also explanations in case of deviations.
- Whether the central bank provides regular information on macroeconomic factors that may affect the transmission mechanism of monetary policy, taking the value of 0 if it does not or does so with a very low frequency, 0.5 if it does only through short-term forecasts or analysis of current macroeconomic developments, and 1 if at least annually it includes a discussion of past prediction errors.
- Whether the central bank provides an evaluation of the result of policies considering its objectives, taking the value of 0 if it does not or only with a very low frequency, 0.5 if it does superficially, and 1 if it does include an explanation of how monetary policy achieves objectives.

Uruguay's score in this final dimension is somehow halfway because all items are assigned with a score of 0.5.

Finally, as can be seen in Fig. 1, if we compare the value of the Dincer and Eichengreen (2014) index obtained for Uruguay (8) with that of the rest of countries included in the sample⁸, we conclude that Uruguay's relative assessment is greater than the median of the values. The maximum value of the index for the 2019 sample corresponds to Sweden (14.5), whereas the minimum corresponds to the Central Bank of the African States (0.5).⁹

⁸ <https://eml.berkeley.edu/~eichengr/data.shtml>

⁹ See details of countries Appendix A.

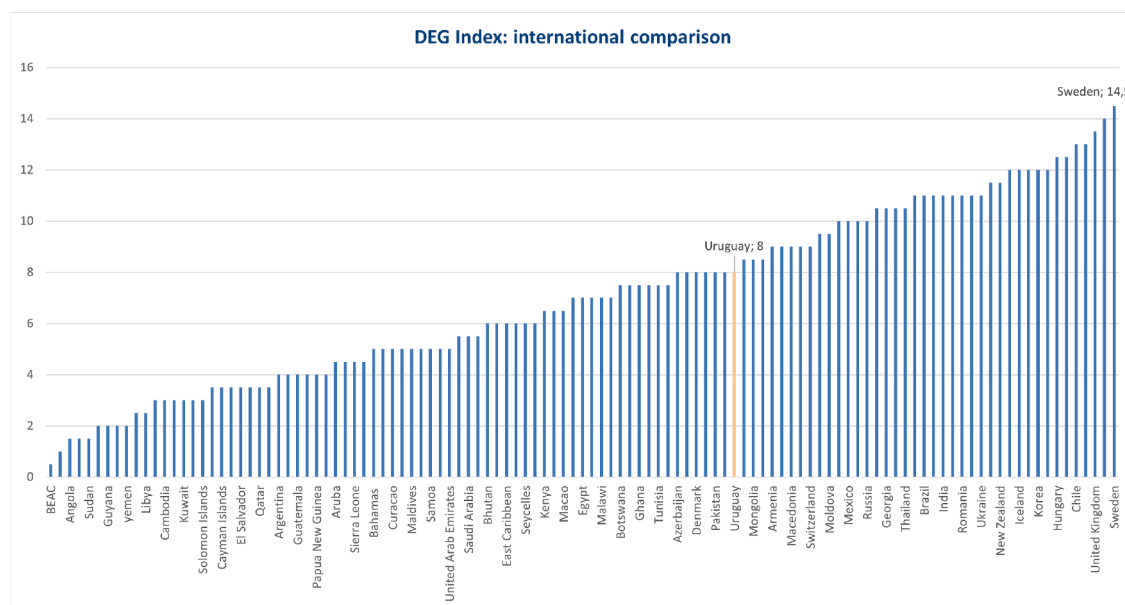


Fig. 1. DEG Index: Uruguay's relative position, 2019.

4.2. CBT-IT Index

As mentioned earlier, the [Al-Mashat et al. \(2018\)](#) index applies only to central banks with inflation-forecast-targeting regimes and it is organized into three broad categories: transparency about objectives, transparency about the forecasting and policy analysis system, and transparency about the policy process.¹⁰

The transparency about objectives section analyzes the transparency of the central bank based on four aspects: formulation of the objectives, clear communication of the objectives, communication of the performance of the central bank regarding the management of short-term trade-off between inflation and GDP, and the role of financial stability in the communication of monetary policy.

On the other hand, the following section of the CBT-IT index is based on the existence of a monetary policy model that includes a reaction or loss function, according to which the short-term interest rate moves endogenously to return inflation to its long-term target level. Likewise, the forecasting and policy analysis system must rely on communication mechanisms between policymakers and analysts in charge of the model, to ensure that the model captures key aspects of the monetary policy transmission mechanisms. The third aspect included in this section refers to the need for a communication channel between policymakers and analysts in charge of forecasts to reach consensus on the assumptions used for both the baseline scenario and the alternative scenarios.

Finally, the section associated to the transparency of policy processes refers to the communication mechanisms of the policy decisions adopted by the central bank. A maximum value of the index is achieved in cases where the central bank organizes a press conference after each policy meeting, with pre-announced deadlines that are public knowledge. Additionally, both the press conference and the Q&A sessions should be published in the central bank's website (in English). Finally, another aspect refers to the regular presentation of central bank forecasts to market agents (press, analysts, etc.), with their corresponding publication (in English) on the monetary authority's website.

The overall value of the index for Uruguay is 4.25 (the maximum possible is 20), which is broken down into a value of 2 for objectives, 1.75 for forecasting and analysis system and 0.5 for transparency of processes. If we compare these values with the maximum values that each category can reach (4, 9 and 7 respectively), one can conclude that the dimension in which Uruguay registers a better score is associated with transparency about objectives. The value obtained in this dimension responds to the components A2 and A3, respectively associated with the definition of the inflation target as a control range, instead of a specific objective), and with whether financial stability objectives could override the inflation objective. On the other hand, the value obtained in the dimension of transparency about forecasts and analysis system is explained by the values associated with components B1 (there is a basic set of publicly available data series = 0.5), B2 (quarterly projection model used publicly available only in working paper format, irreproducible = 0.25), and B8 (publication of alternative scenarios in the monetary policy reports = 1). Although the FPAS dimension is not the worst in terms of the [Al-Mashat et al. \(2018\)](#) metrics, Uruguay's score is consistent with the fact that Uruguay is still in the process of becoming a full-fledged inflation targeting regime. Finally, the dimension of transparency about policy process takes a value of 0.5, which responds only to the value obtained in paragraph C1 (publication of a press release after policy decisions, only in the mother tongue).¹¹

¹⁰ The questions included in each of the dimensions are detailed in [Appendix C](#).

¹¹ The Detail of the components of the index for Uruguay can be found in [Appendix D](#).

Al-Mashat et al. (2018) calculated their index for the Central Bank of the Czech Republic, obtaining a value of 11.75 out of 20. This score is broken down into the following values for each of the dimensions: 2.5 out of 4 for objectives, 3.5 out of 9 for forecasting and analysis system and 5.75 out of 7 for transparency about the policy process. If these values are compared with those obtained by Uruguay (see Fig. 2), in relative terms, Uruguay's greatest distance from the Czech Republic is transparency about the policy processes. Meanwhile, the objectives reflects the shortest relative distance between the two countries (2 and 2.5 out of 9 for Uruguay and the Czech Republic, respectively).

As already mentioned, according to Dincer and Eichengreen (2014) index, the Central Bank of the Czech Republic obtains the maximum value within the sample considered by the authors. This is explained by an observation made by Al-Mashat et al. (2018) regarding that index: countries with inflation-targeting regimes obtain scores close to the maximum, which prevents us from finding differences between them. By focusing solely on central banks with such regimes, the Al-Mashat et al. (2018) index seeks to define a benchmark that reflects the best practices associated with IFT regimes in order to motivate further improvements in the transparency of monetary policy. As a result, the application of the Al-Mashat et al. (2018) index to the Central Bank of the Czech Republic reflects aspects in which there is room for improvement, whereas its application to the BCU yields a significantly different value than that obtained in the Dincer and Eichengreen (2014) index.

ACA When comparing the two indexes, Uruguay obtains a score of 0.5 in paragraph 1a of the Dincer and Eichengreen (2014) index (definition of multiple objectives without an order of prioritization between them) and a score of 1 in the paragraph 1b (existence of quantified objectives), whereas the Al-Mashat et al. (2018) index assigns scores of 0 and 1 respectively in similar sections (A1, definition of a single objective or multiple objectives without prioritization, and A2, inflation target defined as a control range).

On the other hand, regarding economic transparency, in paragraph 2b of the Dincer and Eichengreen (2014) index, Uruguay obtains a score of 1 because it only considers whether the central bank has published the model applied to the operation of the policy, whereas the Al-Mashat et al. (2018) index raises a more specific question that distinguishes between a publication of the model through a working paper (0.25, score obtained by Uruguay), a publication in a working paper that also includes the code used (0.5), or a working paper with code and a web-based front-end to modify forecast assumptions.

Regarding the transparency of policies, Uruguay obtains scores of 1, 0.5 and 1 in paragraphs 4a (announcement of adjustment decisions in the policy objectives), 4b (explanation of the policy decisions), and 4c (disclosure of policy inclination) of the Dincer and Eichengreen (2014) index respectively. Meanwhile, according to the C (policy transparency) dimension of the Al-Mashat et al. (2018) index, Uruguay scores 0.5 because the index punishes when announcements are published only in the mother tongue. This criterion is debatable since a key aspect for monetary policy transparency is that the relevant economic agents of the country that is being analyzed receive the information clearly; hence, the publication of announcements translated into English is not a relevant requirement for a Spanish-speaking country like Uruguay. Finally, as will be discussed in Section 4.3, this dimension experiences some improvement as a result of the changes introduced in the execution of the monetary policy in Uruguay during 2020.

When we focus on operational transparency, Uruguay obtains a score of 0.5 in all items included in the Dincer and Eichengreen (2014) index (evaluation of compliance with objectives, information about macroeconomic disturbances that may affect the transmission mechanism of monetary policy, and evaluation of policy outcome). These scores can be compared with that obtained in paragraph C6 of the Al-Mashat et al. (2018) index (forecasting performance at least annually reviewed in monetary policy reports or other documents), with the value of zero.

Finally, the Al-Mashat et al. (2018) index includes other items that capture aspects not collected by the Dincer and Eichengreen (2014) index, such as the use of a loss function to evaluate the management of short-run output-inflation trade-off, the transparency of the central bank regarding the application of that loss function, the regular publication of forecast densities (fan charts) and its methodology, the publication of time series and forecasts of financial variables, and the regular presentation of updates of their forecasts with a Q&A session for the press, analysts and market participants. The score obtained by the BCU in these paragraphs shows a possible road map for improvement in its monetary policy transparency.

Figure 3 shows the position of Uruguay in terms of the CBT-IT index with respect to the rest of countries analyzed by Kostanyan et al. (2022). As can be seen, Uruguay displays a modest relative position with respect to the entire sample of countries, while reaching a similar position to those countries belonging to the **Non-FPAS Mark-I**¹² category from Kostanyan et al. (2022). When compared to other Latin American countries, the greatest gap is reached with Chile, followed by Colombia, two countries included in the **FPAS Marl-I** category.

4.3. Changes in monetary policy

On April 2020, the Monetary Policy Committee (COPOM) decided to implement new measures to improve the accountability of the monetary authority and the communication with the different sectors and actors of the economy. To this end, the COPOM decided to intensify the frequency of the decision-making process, communication of the adopted measures and monitoring of monetary policy.

Specifically, the COPOM doubled the number of annual meetings; in addition to the four regular meetings held at the end of each quarter, other four meetings were added and scheduled on intermediate dates. As a result, the evaluation and monitoring of the global and domestic context is performed on a shorter term basis, foreseeing greater speed in the eventual use of available instruments to mitigate the negative short-term effects or strengthen the monetary policy orientation.

¹² The full completion of the first iteration of FPAS is known as FPAS Mark I.

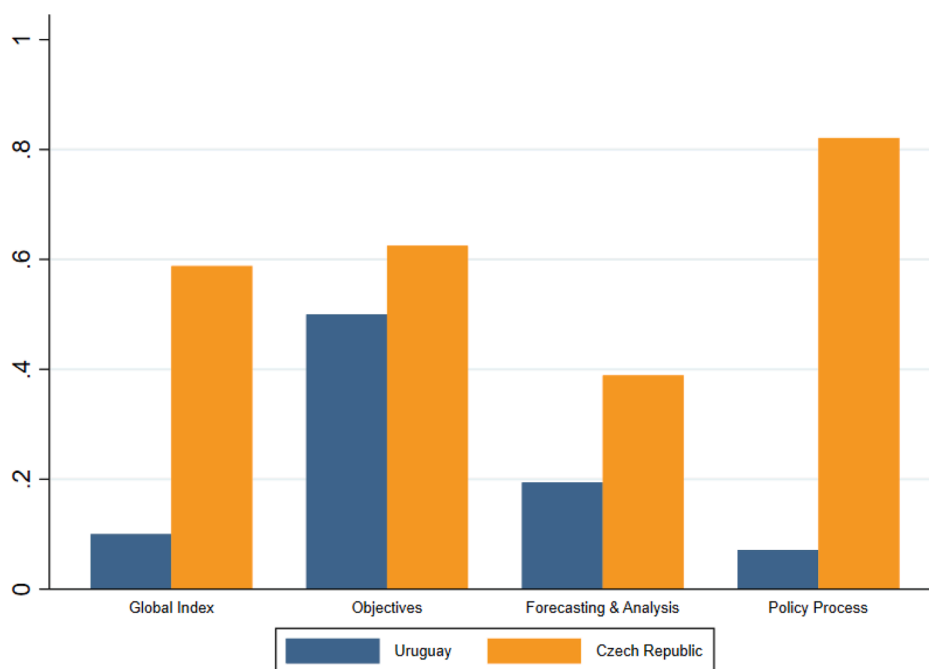


Fig. 2. Al-Mashat et al. (2018) Index, Uruguay versus Czech Rep. (% with respect to maximum values).

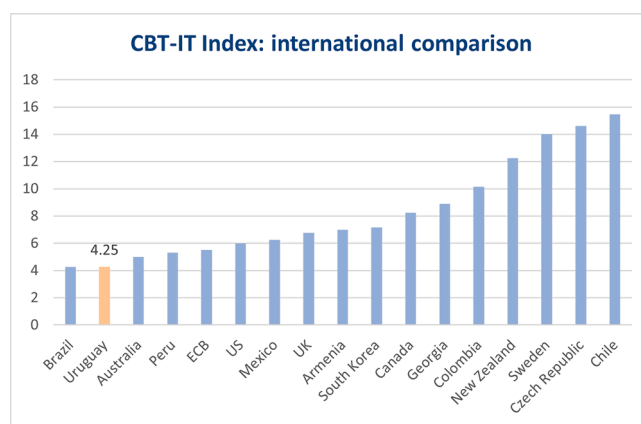


Fig. 3. CBT-IT Index: Uruguay's relative position, 2019 Source: Kostanyan et al. (2022).

Furthermore, the communication of the monitoring and decisions adopted in the COPOM meetings was amplified. Specifically, the COPOM decided to complement the statement issued on the same day of its meetings with the publication of a MINUTE within 72 h after the meeting was held. The idea is to inform the public and markets about the analysis of the situation, justifying and making more explicit the analysis that led to the decisions adopted. This new communication tool was first published on April 21, 2020.

Finally, the monetary authority decided to maintain the quarterly publication of the Monetary Policy Report, which includes complete information on the economic results and evaluation of policy results.

These changes had a direct impact on the procedural and policy transparency dimensions of the Dincer and Eichengreen (2014) index, and on the policy transparency dimension of the Al-Mashat et al. (2018) index. In particular, the most significant improvement is observed in the procedural transparency of the Dincer and Eichengreen (2014) index which went from a score of 0 to 2. This increase corresponds to the publication of the minutes of the COPOM's meetings. Consistently with this, the policy transparency dimension of the Al-Mashat et al. (2018) index goes from a score of 0.5 to 1 due to an increase in item C4, which assesses whether the central bank gives account of policy deliberations through the publication of meeting minutes.

Finally, as a result of this novel design in the execution of monetary policy in Uruguay, the new global scores are 10.5 out of 15 for the Dincer and Eichengreen (2014) and 4.75 out of 20 for the Al-Mashat et al. (2018). Nevertheless, the design of the Al-Mashat et al. (2018) index focuses on central banks with inflation-forecast-targeting regimes that consequently deliver scores very close to the

maximum in terms of the [Dincer and Eichengreen \(2014\)](#) index. Given this focus, although the changes introduced in the communication of the monetary policy in Uruguay have a significantly positive impact in terms of the [Dincer and Eichengreen \(2014\)](#) index, they do not translate into a major increase in the score of the [Al-Mashat et al. \(2018\)](#) index.

5. Policy implications and final remarks

The discussion about the need for central banks' independence has been settled for some time now. Beyond being part of the institutional structure of a government, central banks should be able to apply their own technical and professional judgment to the design of monetary policy (in order to achieve their ultimate mandate of price stability). The flip side of this independence is the need for accountability, is where transparency comes in. From a more practical point of view, the transparency of monetary policy may contribute to its effectiveness, to the extent that policy decisions are clearer and more predictable, which ultimately has an impact on inflation expectations.

However, transparency is not the mere act of disclosing information. An important prerequisite for transparency is conveying information in a way that is best understood by the public. Information has to be processed, simplified and put into context in order to become comprehensible. This becomes even more evident when it comes to communication of monetary policy processes ([Winkler, 2000](#)).

Now, what is understood for transparency? Which is the roadmap for achieving adequate levels of transparency? The efforts economists have made to achieve measures of central bank transparency provide benchmarks through which policymakers may work to improve their monetary policy transparency. The measure based on the categories from [Eijffinger and Geraats \(2006\)](#) offers criteria organized in different dimensions of what is meant by monetary policy transparency, which helps central banks identify where they stand and in which specific areas they need to put more focus. Finally, given the widespread implementation of inflation targeting regimes, the [Al-Mashat et al. \(2018\)](#) pushes the metric forward by contributing with more detailed information on the possible weak areas of each central bank.

Focusing on the case of Uruguay, although the recent changes introduced in the design of monetary policy translated into an improvement in terms of the [Dincer and Eichengreen \(2014\)](#) index, the magnitude of the impact was much more modest in the case of the [Al-Mashat et al. \(2018\)](#) index. This is consistent with the fact that Uruguay is still in the process of becoming a fully-fledged inflation-targeting regime. In this regard, the gaps identified in the [Al-Mashat et al. \(2018\)](#) index may contribute to organizing the remaining steps of this process. Specifically, although there is a greater gap in the category of transparency about the policy process, probably focusing on closing the gap in the FPAS dimension would be more prudent because it would be the result of moving towards becoming a fully-fledged IT central bank.

Finally, possible future lines of research could explore the possibility of transferring some of the notions of central bank transparency to the financial supervision agencies, which in several cases are within the scope of the central bank. In addition, it could be interesting to measure the impact of the evolution of central bank transparency scores on the information channel of monetary policy. In addition, [Bucacos et al. \(2021\)](#) complement the assessment of the BCU's transparency in this study by contrasting the score in terms of transparency indexes with the perception that professionals outside the institution have in this regard.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A. Dincer-Eichengreen Index: questions

1. Political Transparency

- (a) Is there a formal statement of the objective(s) of monetary policy, with an explicit prioritization in case of multiple objectives?
 - No formal objective(s) = 0.
 - Multiple objectives without prioritization = 1/2.
 - One primary objective, or multiple objectives with explicit priority = 1.
- (b) Is there a quantification of the primary objective(s)?
 - No = 0.
 - Yes = 1.
- (c) Are there explicit contacts or other similar institutional arrangements between the monetary authorities and the government?
 - No, central bank contracts or other institutional arrangements = 0.
 - Central bank without explicit instrument independence or contract = 1/2.
 - Central bank with explicit instrument independence or central bank contract although possibly subject to an explicit override procedure = 1.

2. Economic Transparency

- (a) Is the basic economic data relevant for the conduct of monetary policy publicly available? (The focus is on the following five variables: money supply, inflation, GDP, unemployment rate and capacity utilization.)
 - Quarterly time series for at most two out of the five variables = 0.
 - Quarterly time series for three or four out of the five variables = 1/2.

- Quarterly time series for all five variables = 1.
- (b) Does the central bank disclose the macroeconomic model(s) it uses for policy analysis?
- No = 0.
 - Yes = 1.
- (c) Does the central bank regularly publish its own macroeconomic forecasts?
- No, numerical central bank forecasts for inflation and output = 0.
 - Numerical central bank forecasts for inflation and/or output published at less than quarterly frequency = 1/2.
 - Quarterly numerical central bank forecasts for inflation and output for the medium term (one to two years ahead), specifying the assumptions about the policy instrument (conditional or unconditional forecasts) = 1.
- 3. Procedural Transparency**
- (a) Does the central bank provide an explicit policy rule or strategy that describes its monetary policy framework?
- No = 0.
 - Yes = 1.
- (b) Does the central bank give a comprehensive account of policy deliberations (or explanations in case of a single central banker) within a reasonable amount of time?
- No, or only after a substantial lag (more than eight weeks) = 0.
 - Yes, comprehensive minutes (although not necessarily verbatim or attributed) or explanations (in case of a single central banker), including a discussion of backward- and forward-looking arguments = 1.
- (c) Does the central bank disclose how each decision on the level of its main operating instrument or target was reached?
- No or only after a substantial lag (more than eight weeks) = 0.
 - Yes, comprehensive minutes (although not necessarily verbatim or attributed) or explanations (in case of a single central banker), including a discussion of backward- and forward-looking arguments = 1.
- 4. Policy Transparency**
- (a) Are decisions about adjustments to the main operating instrument or target announced promptly?
- No or only after the day of implementation = 0.
 - Yes, on the day of implementation = 1.
- (b) Does the central bank provide an explanation when it announces policy decisions?
- No = 0.
 - Yes, when policy decisions change, or only superficially = 1/2.
 - Yes, always and including forwarding-looking assessments = 1.
- (c) Does the central bank disclose an explicit policy inclination after every policy meeting or an explicit indication of likely future policy actions (at least quarterly)?
- No = 0.
 - Yes = 1.
- 5. Operational Transparency**
- (a) Does the central bank regularly evaluate to what extent its main policy operating targets (if any) have been achieved?
- No, or not very often (less than annual frequency) = 0.
 - Yes, but without providing explanations for significant deviations = 1/2.
 - Yes, accounting for significant deviations from target (if any), or (nearly) perfect control over main operating instrument/target = 1.
- (b) Does the central bank regularly provide information on (unanticipated) macroeconomic disturbances that affect the policy transmission process?
- No, or not very often = 0.
 - Yes, but only through short-term forecasts or analysis of current macroeconomic developments (at least quarterly) = 1/2.
 - Yes, including a discussion of past forecast errors (at least annually) = 1.
- (c) Does the central bank regularly provide an evaluation of the policy outcome in light of its macroeconomic objectives?
- No, or not very often (less than annual frequency) = 0.
 - Yes, but superficially = 1/2.
 - Yes, with an explicit account of the contribution of monetary policy in meeting the objectives = 1.

Appendix B. Dincer-Eichengreen index: Application to Uruguay

Figure B.1 and B.2

Application to Uruguay, 2019		8.00
1) Political Transparency		2.50
a) Is there a formal statement of the objective(s) of monetary policy, with an explicit prioritization in case of multiple objectives? No formal objective(s) = 0. Multiple objectives without prioritization = 1/2. One primary objective, or multiple objectives with explicit priority = 1.		0.50
b) Is there a quantification of the primary objective(s)? No = 0. Yes = 1.		1.00
c) Are there explicit contracts or other similar institutional arrangements between the monetary authorities and the government? No central bank contracts or other institutional arrangements = 0. Central bank without explicit instrument independence or contract = 1/2. Central bank with explicit instrument independence or central bank contract although possibly subject to an explicit override procedure = 1.		1.00
2. Economic Transparency		1.50
a) Is the basic economic data relevant for the conduct of monetary policy publicly available? (The focus is on the following five variables: money supply, inflation, GDP, unemployment rate and capacity utilization.) Quarterly time series for at most two out of the five variables = 0. Quarterly time series for three or four out of the five variables = 1/2. Quarterly time series for all five variables = 1.		0.50
b) Does the central bank disclose the macroeconomic model(s) it uses for policy analysis? No = 0. Yes = 1.		1.00
c) Does the central bank regularly publish its own macroeconomic forecasts? No numerical central bank forecasts for inflation and output = 0. Numerical central bank forecasts for inflation and/or output published at less than quarterly frequency = 1/2. Quarterly numerical central bank forecasts for inflation and output for the medium term (one to two years ahead), specifying the assumptions about the policy instrument (conditional or unconditional forecasts) = 1.		-
3. Procedural Transparency		-
a) Does the central bank provide an explicit policy rule or strategy that describes its monetary policy framework? No = 0. Yes = 1.		-
b) Does the central bank give a comprehensive account of policy deliberations (or explanations in case of a single central banker) within a reasonable amount of time? No or only after a substantial lag (more than eight weeks) = 0. Yes, comprehensive minutes (although not necessarily verbatim or attributed) or explanations (in case of a single central banker), including a discussion of backward- and forward-looking arguments = 1.		-
c) Does the central bank disclose how each decision on the level of its main operating instrument or target was reached? No or only after a substantial lag (more than eight weeks) = 0. Yes, comprehensive minutes (although not necessarily verbatim or attributed) or explanations (in case of a single central banker), including a discussion of backward- and forward-looking arguments = 1.		-

Fig. B.1. .

4. Policy Transparency		2.50
a) Are decisions about adjustments to the main operating instrument or target announced promptly? No or only after the day of implementation = 0. Yes, on the day of implementation = 1.		1.00
b) Does the central bank provide an explanation when it announces policy decisions? No = 0. Yes, when policy decisions change, or only superficially = 1/2. Yes, always and including forward-looking assessments = 1.		0.50
c) Does the central bank disclose an explicit policy inclination after every policy meeting or an explicit indication of likely future policy actions (at least quarterly)? No = 0. Yes = 1.		1.00
5. Operational Transparency		1.50
a) Does the central bank regularly evaluate to what extent its main policy operating targets (if any) have been achieved? No or not very often (at less than annual frequency) = 0. Yes, but without providing explanations for significant deviations = 1/2. Yes, accounting for significant deviations from target (if any); or, (nearly) perfect control over main operating instrument/target = 1.		0.50
b) Does the central bank regularly provide information on (unanticipated) macroeconomic disturbances that affect the policy transmission process? No or not very often = 0. Yes, but only through short-term forecasts or analysis of current macroeconomic developments (at least quarterly) = 1/2. Yes, including a discussion of past forecast errors (at least annually) = 1.		0.50
c) Does the central bank regularly provide an evaluation of the policy outcome in light of its macroeconomic objectives? No or not very often (at less than annual frequency) = 0. Yes, but superficially = 1/2. Yes, with an explicit account of the contribution of monetary policy in meeting the objectives = 1.		0.50

Fig. B.2. .

Appendix C. CBT-IT Index (Al-Mashat et al., 2018): Questions

(a) Transparency about objectives

- 1) Is there a formal statement of the objectives of monetary policy emphasizing the dual mandate (or multiple objectives), and that inflation is the primary objective? Is it easily accessible on the central bank's website?

- Single inflation objective or multiple policy objectives without prioritization = 0.
 - Inflation as the primary objective such that any other objective (output, etc.) cannot be inconsistent with the primary objective of anchoring inflation and inflation expectations = 1.
- 2) Is the inflation target defined clearly?
- No medium-term numerical target over a horizon of 2–3 years or more (hereafter medium term) = 0.
 - Inflation target defined as a “tolerance” or “control range” target. Inflation target defined as a medium-term target, however, the meaning of the range or the band is not clear = 0,5.
 - Inflation target defined as a well-defined point target. If a band is used, it is clearly communicated = 1.
- 3) Might financial stability objectives override the primacy of the inflation (price stability) objective? If the central bank does not have a financial stability responsibility, it should be explicit that it uses the policy interest rate tool to affect financial conditions to the extent that it affects the output gap and hence achieving the inflation target.
- (I) Another institution is responsible for financial stability.
- Central bank cares about financial stability to the extent that it affects stabilization objectives (output and unemployment), but it is unclear that inflation is the primary objective (Example: uses language such as “lean against the wind”) = 0.
 - Central bank cares about financial stability to the extent that it affects stabilization objectives (output and unemployment) and makes it clear that inflation is the primary objective = 1.
- (II) Central bank is at least partly responsible for financial stability.
- The borderline between the monetary policy and financial stability tools are unclear. This creates confusion about the primary objective of price stability = 0.
 - The central bank has both monetary policy and macroprudential tools and it is clear how the central bank adjusts its tools to achieve its monetary policy and financial stability objectives = 1.
- 4) Does the central bank use a loss function evaluation to show how well it has been doing in managing the short-run output-inflation trade-off?
- No = 0.
 - Yes = 1.
- (b) Transparency about forecasting and policy analysis system**
- 1) Are the basic economic data relevant for the conduct of monetary policy publicly available in a downloadable format from the central bank’s website (could also include links to other statistical agencies)?
- No database is publicly available = 0.
 - A minimal set of series is publicly available, output gap or other ways of measuring capacity utilization, inflation, inflation expectations, wages, unemployment, and GDP = 0.5.
 - All series used in producing the MPR are published in a downloadable format, such as an Excel spreadsheet. These series include at least the seven series above (capacity utilization (preferably the output gap), inflation, inflation expectations, wages, unemployment, and GDP) = 1.
- 2) Is the core quarterly projection model (model used for policy-making) publicly available and documentation updated within the last 5 years?
- No = 0.
 - Yes, in a “working paper” format only, i.e., irreproducible = 0.25.
 - Yes, in a working paper and with code = 0.5.
 - Yes, in a working paper, with code, and web-based front-end to modify forecast assumptions = 1.
- 3) 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?
- The central bank does not publish either the reaction function or the loss function = 0
 - The central bank publishes the reaction function and/or loss function (with the coefficients) in an easily accessible place on the central bank’s website = 1.
- 4) For what variables does the central bank publish a consistent endogenous instrument (e.g., policy rate) quarterly macro-economic projection over a horizon of at least two years?
- None = 0.
 - Inflation = 0,2.
 - Inflation and GDP growth = 0,4.
 - Inflation, GDP growth, and the endogenous interest rate path = 0,6.
 - Inflation, GDP growth, the endogenous interest rate path, and the output gap = 0,8.
 - Inflation, GDP growth, the endogenous interest rate path, the output gap, and the exchange rate = 1.
- 5) Does the central bank regularly publish forecast densities (fan charts) to communicate forecast uncertainty?
- No fan chart = 0.
 - Fan chart for inflation = 0.2.
 - Fan charts for inflation and GDP growth = 0.4.
 - Fan charts for inflation, GDP growth, and the endogenous interest rate path = 0.6.

- Fan charts for inflation, GDP growth, the endogenous interest rate path, and the output gap = 0.8.
 - Fan charts for inflation, GDP growth, the endogenous interest rate path, the output gap, and the exchange rate = 1.
- 6) Is the underlying methodology constructing the forecast densities (fan charts) clear and easily accessible? For example, do the regularly published forecast densities (fan charts) reflect (i) monetary policy reaction to shocks (model-based stochastic simulations); (ii) historic experience (past forecast errors); (iii) judgment (e.g., magnitude of structural shocks versus measurement errors); and (iv) other constraints (e.g., effective lower bound)?
- No fan chart, or the fan chart methodology is not explained = 0.
 - Fan charts published in all monetary policy reports and the methodology is clearly explained and/or links to a technical paper is provided = 1.
- 7) Does the central bank regularly publish an assessment of forecast revisions (decomposition of forecast changes vis-à-vis the previous forecast)?
- No = 0.
 - For inflation only with a discussion of the underlying causes = 0.2.
 - For inflation and GDP growth with a discussion of the underlying causes = 0.4.
 - For inflation, GDP growth, and the endogenous interest rate path with a discussion of the underlying causes = 0.6.
 - For inflation, GDP growth, the endogenous interest rate path, and the output gap with a discussion the underlying causes = 0.8.
 - For inflation, GDP growth, the endogenous interest rate path, the output gap, and the exchange rate with a discussion the underlying causes = 1.
- 8) Does the central bank publish alternative scenarios in their monetary policy reports to illustrate key risk(s) in the baseline forecast?
- No alternative scenario = 0.0.
 - The major risk(s) is communicated in an alternative scenario(s) = 1.
- 9) Do the monetary policy reports include historical data and forecasts for financial variables? Financial variables include long-term government bond yields, consumer lending rates, mortgage rates, equity prices, property prices, credit aggregates, corporate risky spreads (e.g., BAA-AAA bond yields), and credit standards (e.g., loan officer surveys). All data should be available in downloadable format.
- No data or forecast of financial variables are available = 0.
 - Historical data on less than 5 of the above variables are available, and forecasts for less than 5 of the above variables are available = 0.1-0.9.¹³
 - Historical data on 5 or more of the above variables are available, and forecasts for 5 or more of the above variables are available = 1.
- (c) Transparency about policy process**
- 1) Does the central bank publish a press statement immediately following the policy decisions?
- The central bank does not publish a press statement immediately after the policy decisions = 0.
 - The central bank publishes press statements in the native language only = 0.5.
 - The central bank publishes press statements in English = 1.
- 2) Is the policy decision explained at a press conference immediately after it is announced? Are the presentations available in English?
- No = 0.
 - Yes, after all policy meetings, at pre-announced dates and times. The press conference with the Q&A session is webcasted and the recording is then made available on the website. The presentations are available in downloadable form only in the native language = 0.5.
 - Yes, after all policy meetings, at pre-announced dates and times. The press conference with the Q&A session is webcasted and the recording is then made available on the website. The presentations are available in downloadable form in English = 1.
- 3) Does the central bank present its regular forecast updates with the Q&A session to journalists, analysts, and market participants? Are the presentations available in English?
- No = 0.
 - Yes. The presentation and Q&A are available only in the native language = 0.5.
 - Yes. The presentation and Q&A are available in English = 1.
- 4) Is there a public account of the policy deliberations (“minutes”) published in less than one month after the meeting?
- (I) when policy decisions are made by a monetary policy committee:
- No = 0.
 - Yes, but condensed, non-attributed, and without voting results = 0.5.
 - Yes, detailed and with voting results on the main policy instrument. Contributions by individual MPC members and votes are not attributed = 0.75.

¹³ For historical series, the central bank would be awarded 0.1 for each type of financial variables up to a maximum of 0.5. For forecast series, the central bank would be awarded 0.1 for each type of financial variables up to a maximum of 0.5.

- Yes, detailed and with voting results on the main policy instrument. Contributions by individual MPC members and votes are attributed = 1.
- (II) when policy decisions are made by a single policymaker:
- No = 0.
 - Yes, with arguments/explanations = 1.
- 5) Is the role of staff and policymakers in the baseline forecast process communicated clearly?
- No. It is not clear how the forecast is constructed and is used in the decision-making process = 0.
 - Yes. The ownership of the forecast and its role in the decision-making process is defined clearly = 1.
- 6) Is the forecasting performance of the central bank reviewed at least once a year in the monetary policy reports or in a separate document?
- No = 0.
 - Yes = 1.
- 7) When was the last time the central bank or the government held or invited an external evaluation of the policy framework and the FPAS, and made the results publicly available?
- No evaluation in last 5 years = 0.
 - Either policy framework or FPAS evaluation in the last 5 years = 0.5.
 - Both policy framework and FPAS evaluation in the last 5 years = 1.

Appendix D. CBT-IT Index: Application to Uruguay

CBT - IT Index	4.25
Category A: Transparency about objectives	2
A1. Is there a formal statement of the objectives of monetary policy emphasizing the dual mandate (or multiple objectives), and that inflation is the primary objective? Is it easily accessible on the central bank's website?	0
Single inflation objective or multiple policy objectives without prioritization. 0 Inflation as the primary objective such that any other objective (output, etc.) cannot be inconsistent with the primary objective of anchoring inflation and inflation expectations. 1	
A2. Is the inflation target defined clearly?	1
No medium-term numerical target over a horizon of 2-3 years or more (hereafter medium term). 0 Inflation target defined as a "tolerance" or "control range" target. Inflation target defined as a medium-term target, however, the meaning of the range or the band is not clear. 0,5 Inflation target defined as a well-defined point target. If a band is used, it is clearly communicated. 1	
A3. Might financial stability objectives override the primacy of the inflation (price stability) objective? If the central bank does not have a financial stability responsibility, it should be explicit that it uses the policy interest rate tool to affect financial conditions to the extent that it affects the output gap and hence achieving the inflation target.	1
(i) Another institution is responsible for financial stability. Central bank cares about financial stability to the extent that it affects stabilization objectives (output and unemployment), but it is unclear that inflation is the primary objective. Example – uses language such as "lean against the wind". 0.0 Central bank cares about financial stability to the extent that it affects stabilization objectives (output and unemployment), and makes it clear that inflation is the primary objective. 1.0 (ii) Central bank is at least partly responsible for financial stability. The borderlines between the monetary policy and financial stability tools are unclear. This creates confusion about the primary objective of price stability. 0.0 The central bank has both monetary policy and macroprudential tools and it is clear how the central bank adjusts its tools to achieve its monetary policy and financial stability objectives. 1.0	
A4. Does the central bank use a loss function evaluation to show how well it has been doing in managing the short-run output-inflation tradeoff?	0
No. 0.0 Yes. 1.0	

Category B: Transparency about FPAS	1.75
B1. Are the basic economic data relevant for the conduct of monetary policy publicly available in a downloadable format from the central bank's website (could also include links to other statistical agencies)? For example, data reported in the monetary policy reports should be made available on the website.	0.5
No database is publicly available. 0.0 A minimal set of series is publicly available, output gap or other ways of measuring capacity utilization, inflation, inflation expectations, wages, unemployment, and GDP. 0.5 All series used in producing the MPR are published in a downloadable format, such as an Excel spreadsheet. These series include at least the seven series above (capacity utilization (preferably the output gap), inflation, inflation expectations, wages, unemployment, and GDP). 1.0	
B2. Is the core quarterly projection model (model used for policy-making) publicly available and documentation updated within the last 5 years?	0.25
No. 0.0 Yes, in a "working paper" format only, i.e., irreproducible. 0.25 Yes, in a working paper and with code. 0.5 Yes, in a working paper, with code, and web-based front-end to modify forecast assumptions. Example - none. 1.0	
B3. 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?	0
The central bank does not publish either the reaction function or the loss function. 0.0 The central bank publishes the reaction function and/or loss function (with the coefficients) in an easily accessible place on the central bank's website. 1.0	
B4. For what variables does the central bank publish a consistent endogenous instrument (e.g., policy rate) quarterly macroeconomic projection over a horizon of at least two years?	0
None. 0 Inflation. 0.2 Inflation and GDP growth. 0.4 Inflation, GDP growth, and the endogenous interest rate path. 0.6 Inflation, GDP growth, the endogenous interest rate path, and the output gap. 0.8 Inflation, GDP growth, the endogenous interest rate path, the output gap, and the exchange rate. 1	
B5. Does the central bank regularly publish forecast densities (fan charts) to communicate forecast uncertainty?	0
No fan chart. 0.0 Fan chart for inflation. 0.2 Fan charts for inflation and GDP growth. 0.4 Fan charts for inflation, GDP growth, and the endogenous interest rate path. 0.6 Fan charts for inflation, GDP growth, the endogenous interest rate path, and the output gap. 0.8 Fan charts for inflation, GDP growth, the endogenous interest rate path, the output gap, and the exchange rate. 1	

B6. Is the underlying methodology constructing the forecast densities (fan charts) clear and easily accessible? For example, do the regularly published forecast densities (fan charts) reflect (i) monetary policy reaction to shocks (model-based stochastic simulations); (ii) historic experience (past forecast errors); (iii) judgment (e.g., magnitude of structural shocks versus measurement errors); and (iv) other constraints (e.g., effective lower bound)?	0
No fan chart, or the fan chart methodology is not explained. 0.0 Fan charts published in all monetary policy reports and the methodology is clearly explained and/or links to a technical paper is provided. 1.0	
B7. Does the central bank regularly publish an assessment of forecast revisions (decomposition of forecast changes vis-à-vis the previous forecast)?	0
No. 0.0 For inflation only with a discussion of the underlying causes. 0.2 For inflation and GDP growth with a discussion of the underlying causes. 0.4 For inflation, GDP growth, and the endogenous interest rate path with a discussion of the underlying causes. 0.6 For inflation, GDP growth, the endogenous interest rate path, and the output gap with a discussion the underlying causes. 0.8 For inflation, GDP growth, the endogenous interest rate path, the output gap, and the exchange rate with a discussion the underlying causes. 1.0	
B8. Does the central bank publish alternative scenarios in their monetary policy reports to illustrate key risk(s) in the baseline forecast?	1
No alternative scenario. 0.0 The major risk(s) is communicated in an alternative scenario(s). 1.0	
B9. Do the monetary policy reports include historical data and forecasts for financial variables? Financial variables include long-term government bond yields, consumer lending rates, mortgage rates, equity prices, property prices, credit aggregates, corporate risky spreads (e.g., BAA-AAA bond yields), and credit standards (e.g., loan officer surveys). All data should be available in downloadable format.	0
No data or forecast of financial variables are available. 0.0 Historical data on less than 5 of the above variables are available, and forecasts for less than 5 of the above variables are available. 0.1-0.9. Historical data on 5 or more of the above variables are available, and forecasts for 5 or more of the above variables are available. 1.0	

Category C: Transparency about policy process	0.5
C1. Does the central bank publish a press statement immediately following the policy decisions?	0.5
The central bank does not publish a press statement immediately after the policy decisions. 0.0 The central bank publishes press statements in the native language only. 0.5 The central bank publishes press statements in English. 1.0	
C2. Is the policy decision explained at a press conference immediately after it is announced? Are the presentations available in English?	0
No. 0.0 Yes, after all policy meetings, at pre-announced dates and times. The press conference with the Q&A session is webcasted and the recording is then made available on the website. The presentations are available in downloadable form only in the native language. 0.5 Yes, after all policy meetings, at pre-announced dates and times. The press conference with the Q&A session is webcasted and the recording is then made available on the website. The presentations are available in downloadable form in English. 1.0	
C3. Does the central bank present its regular forecast updates with the Q&A session to journalists, analysts, and market participants? Are the presentations available in English?	0
No. 0.0 Yes. The presentation and Q&A are available only in the native language. 0.5 Yes. The presentation and Q&A are available in English. 1.0	
C4. Is there a public account of the policy deliberations (“minutes”) published in less than one month after the meeting?	0
(i) when policy decisions are made by a monetary policy committee. No. 0.0 Yes, but condensed, non-attributed, and without voting results. 0.5 Yes, detailed and with voting results on the main policy instrument. Contributions by individual MPC members and votes are not attributed. 0.75 Yes, detailed and with voting results on the main policy instrument. Contributions by individual MPC members and votes are attributed. 1 (ii) when policy decisions are made by a single policymaker. No 0.0 Yes, with arguments/explanations. 1.0	
C5. Is the role of staff and policymakers in the baseline forecast process communicated clearly?	0
No. It is not clear how the forecast is constructed and is used in the decisionmaking process. 0.0 Yes. The ownership of the forecast and its role in the decision-making process is defined clearly. 1.0	
C6. Is the forecasting performance of the central bank reviewed at least once a year in the monetary policy reports or in a separate document?	0
No 0.0 Yes 1.0	
C7. When was the last time the central bank or the government held or invited an external evaluation of the policy framework and the FPAS, and made the results publicly available?	0
No evaluation in last 5 years. 0.0 Either policy framework or FPAS evaluation in the last 5 years. 0.5 Both policy framework and FPAS evaluation in the last 5 years. 1.0	

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