



# Ensayos

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## Procedural transparency in Latin American central banks under inflation targeting schemes. A text analysis of the minutes of the Boards of Directors<sup>☆</sup>

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### ABSTRACT

The disclosure of the minutes of the Boards of Directors of central banks (procedural transparency within the inflation targeting (IT) literature) implies the challenge of sending a clear message. Regardless of whether the document released is a brief, moderate, or highly detailed (verbatim) account of a Board's discussion, its contents often align expectations and define an effective monetary policy to curb inflation. This paper provides a quantitative perspective of procedural transparency by performing a text analysis of the minutes of Board meetings in the central banks of Brazil, Chile, Colombia, Mexico, and Peru. The study examined the lengths of the minutes, their frequent vocabulary (including its association with a predefined central-bank terminology), and their readability (through a reading ease index).

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## Transparencia procedimental en Bancos Centrales de América Latina bajo el esquema de inflación objetivo. Análisis textual de las actas de las Juntas Directivas

### RESUMEN

La divulgación de las actas de las juntas directivas de los bancos centrales (transparencia procedimental dentro de la literatura de inflación objetivo) supone el reto de enviar un mensaje claro. Independientemente de si el documento publicado es un resumen breve, moderado o muy detallado (literal) de una reunión de la junta, los contenidos suelen converger las expectativas y definir una política económica eficaz para contener la inflación. El presente ensayo arroja una perspectiva cuantitativa de la transparencia en los procedimientos por medio de un análisis textual de las actas de las reuniones

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de las juntas en los bancos centrales de Brasil, Chile, Colombia, México y Perú. El estudio examinó la longitud de las actas, el vocabulario más frecuente (entre el que se incluye la asociación a una terminología predefinida del banco central) y su comprensión (a través de un índice de legibilidad).

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## 1. Introduction

In the 1990s, the central banks of several developing countries carried out deep reforms to control inflation (Mishkin & Savastano, 2000). Most of them were within the IT scheme. While there is no conclusive empirical evidence of the IT scheme's causal effect upon inflation, it is regarded as a chief strategy to reduce inflation and bring about price stability in many economies (IMF, 2005; Lin & Ye, 2009; Mishkin & Schmidt-Hebbel, 2007).<sup>1</sup>

Mishkin (2000) describes five basic elements for a successful IT strategy: (1) a public announcement of the inflation target, (2) an institutional commitment to price stability, (3) increased amount of information to guide policy decisions, (4) transparency through communication with the public, and (5) accountability. While the public announcement of an inflation target, the institutional arrangements (including constitutional or those related to the banks' independence), and accountability received great attention and academic scrutiny in the early stages of the IT scheme implementation,<sup>2</sup> the policy and research agendas have been focusing on increased information and transparency in more recent times.<sup>3</sup> In general, the compliance with information and transparency requirements has been assessed by the number of background studies, reports to the media, Senate hearings, minute releases, and other printed materials employed in the policy decision-making and dissemination processes. Such evidence has been used to determine to what extent central banks are complying or not with an IT approach.

Beyond the above-described framework, Geraats (2002) breaks down the concept of central-bank transparency into five facets: (1) political, (2) economic, (3) procedural, (4) policy, and (5) operational transparency. This author shows how transparency influences and integrates all IT elements, further inquiring whether these elements reduce uncertainty or not, and affect the incentives for reputation building. From this perspective, procedural transparency deals with how monetary policy decisions are taken, including policy deliberations crystallized in minutes and voting records.

This paper focuses on procedural transparency by examining the release of the minutes of central-bank Board meetings. This is not, by any means, a trivial task. It implies a commitment to an effective public communication, so that the citizens' expectations are aligned, and the anti-inflationary policies may succeed. However, the contents of the minutes often remain unchecked with respect to their conveying the desired message. In other words, beyond the publishing of the minutes, little is said about what is in them. Therefore, there is a possible imbalance between the freedom of information (procedural transparency) and the contents of these communications (clarity). This paper examines such a potential

asymmetry within the central banks of Brazil, Chile, Colombia, Mexico, and Peru. By performing a text analysis of the minutes of the Board meetings of these banks, it offers a quantitative view of their procedural transparency.

The potential effects of a lack of transparency seem to be more pervasive in developing countries. Blinder et al. (2008) discuss how central banks that announce the implementation of IT strategies in those countries, usually do it in a rather circumstantial way instead of following a set of rules or a pre-established mechanism. This stresses the need and importance of high-quality communication tools (minutes, reports, press conferences, etc.) to convey their rationale and decisions.

The empirical literature on IT implementation and central-bank transparency regards the release of the minutes as a step toward IT success. No matter its contents, a release itself demonstrates purpose and enhances transparency. However, the mere release of the minutes (whether or not they record the deliberation process verbatim, present voting records, or scrutinize a Board member's view) might not achieve two leading IT goals: establishing a clear communication with the public (Mishkin, 2000); and attaining a coherent management of their expectations (Blinder et al., 2008). If the minutes (and their timely release) are a core element of procedural transparency, their clarity or the lack of it, their proper or improper wording, their verbose or succinct treatment of specific events, may have desirable or undesirable effects upon policy outcomes.

This paper explores these potential procedural-transparency misalignments involving clarity and the need to manage expectations. And it does so by performing a text analysis of the minutes of the Board meetings of the central banks of Brazil, Chile, Colombia, Mexico, and Peru.<sup>4</sup> This empirical strategy permits to count the appearance of a word within a document; to assess what type of word it is (verb, subject, noun); to identify the most frequent words; and to isolate a predefined set of keywords related to the basic concerns of central banks acting under the IT scheme. This information renders numerical syntheses of the texts, which facilitate their comparison between countries. And such a comparative analysis of the usage of words or expressions and their closeness (via cluster analysis) reveals differences between the central banks, and the contents and emphases of their communications to the public in regard to the economic environment, and the banks' views and policies.

Furthermore, a standard readability index was applied to the text of each of the minutes of the central banks to assess the banks' progress in terms of the clarity of their communications. This approach, which comes from a body of educational and linguistics research, offers another alternative to analyze the contents of the minutes systematically.

Text analysis has the advantage over other methodologies of not assigning any subjective measure to the contents of a document.

<sup>1</sup> Broto (2008) examines the volatility effects of IT in Latin America. Steiner, Barajas, Pabón, and Villar (2014) review the IT and inflation-control experience within the region.

<sup>2</sup> The vast literature on the independence and accountability of central banks is an example, see Walsh (2008).

<sup>3</sup> See Eijffinger and Geraats (2006), Geraats (2002) and the review of Blinder, Ehrmann, Fratzscher, Haan, and Jansen (2008).

<sup>4</sup> Text analysis converts text into data for quantitative analysis. It involves information retrieval, lexical analysis to study word frequency distributions, pattern recognition, tagging/annotation, information extraction, and data mining techniques, including link and association analysis, visualization, and predictive analysis.

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