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Monetary Policy Transparency in Ghana: Recent Evidence

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Abstract

Monetary policy involves a dual role as central banks must not only be a heedful observer of outcomes but must also be able to shape the outcomes. In view of this, greater policy transparency has been endorsed to boost credibility, effectiveness and flexibility of monetary policy. With more than a decade of practicing of fully-fledged IT regime, it is of paramount interest to ascertain the pace of policy transparency in Ghana. Consequently, this paper determines the extent of policy transparency in Bank of Ghana, utilizing both methodologies of Dincer and Eichengreen (2008) and Al-Mashat and others (2018). The application of the two transparency measures reveals that policy transparency environment of Bank of Ghana (BOG) has indeed improved since 2009. Our score suggests that monetary policy in Ghana is 41% -57% transparent as at end 2018. The relatively moderate score for BOG emanated largely from low level of transparency about its policy framework (FPAS model) and the procedural policy processes. To further boost transparency, BOG is required to increase transparency in the documentation and publication of the Bank's core quarterly projection model, as well as evaluating and publishing how each decision on policy instrument or target are attained. Publication of other core variables (aside inflation) in the baseline forecasts and regular external evaluation of the policy framework along with public disclosure of the findings are necessary to boost policy transparency.

Keywords: Transparency, Accountability, Inflation Targeting, Monetary Policy, Bank of Ghana.

JEL Codes: E0, E31, E52, E58

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1. Introduction

The pace of reforms in terms of institutional transparency has been exceptionally brusque over the past two decades. This wave has primarily been bolstered by the realization that central banks can enhance their credibility¹ and effectiveness by having a more transparent policy environment. Accordingly, many central banks in recent years have deliberately move towards higher policy transparency, particularly since the inception of inflation targeting (IT) regime. Geraats (2008) simply defines transparency as the absence of information asymmetry. The growing trend towards greater policy transparency is driven by a number of factors. First, it is grounded on the recognition that increased policy transparency does not only enhance monetary policy effectiveness, flexibility and credibility but also perceived as a crucial component of accountability in the era of central bank independence (see Al-Mashat et al., 2018). Second, it is widely articulated that central bank independence is a means of shielding monetary authority from short-term political pressures. Central bank independence is thus recognized as an efficient way of dealing with the time-consistency problems that are often associated with discretionary policy (Dincer and Eichengreen, 2014). Policy transparency has accordingly been recognized as a best means through which the public can judge whether the actions and tactics of independent central bankers are consistent with their mandate. Thirdly, transparency is perhaps part of a broader trend to make government more responsive to the public – boosting the transparency and efficiency of government operations generally. Last but not the least, transparency enables markets to react quite easily to policy decisions. This is because policy decision from a more transparent central bank is less probable to come as a surprise to market participants (investors). Consequently, such policy changes are less prone to induce sharp oscillations in asset prices that cause financial distress.

Other researchers are also of the view that certain restrictions on transparency are important for operational reasons. For instance, Issing (1999) argued that central banks should separate ‘the need to know’ from ‘the need to understand’ in the quest to pursuing higher transparency. As a result, central banks are urged to strive for optimal but not maximum transparency (see, Issing, 2014). Besides, Morris and Shin (2002) assert that noisy public information could induce greater economic volatility as financial markets focus on it to coordinate their actions. Faust and Svensson (2001) also argued that increased transparency makes the bank's reputation and credibility more sensitive to its actions. They further assert that even though full transparency of the central bank's intentions is generally socially beneficial, it is frequently worse for the bank. Geraats (2002) also provides a structured review of the theoretical and empirical literature on the consequences of transparency of monetary policy. He also proposed a distinction between uncertainty and incentive effects of transparency.

Notwithstanding, greater policy transparency particularly hinges on the fact that monetary policy encompasses a dual role. This is because a central bank must not only be a heedful observer of outcomes but also be able to shape the outcomes. Therefore, the actions of central bank and the

¹Gonzalez-Paramo (2007) professed credibility as a fundamental issue in modern central banking, while Blinder (1998, 2000) also deemed credibility as a treasurable asset that need to be seriously upheld by central banks.

information it publicly provides create a common powerful focal point for the information processing decisions of economic agents (Amato and Shin, 2003). The move toward greater policy transparency is a global phenomenon, outstanding examples are found in the Federal Reserve System in the US, The European Central Bank (ECB), the Bank of England and the Central Banks of Canada, New Zealand and Sweden. These notable central banks have deplored several ways to boost policy transparency, such as publication of inflation forecasts, far-reaching explanations of the reasoning behind their decisions, and publication of voting records on policy decisions or a discussion of the ‘bias’ in those decisions.

In line with this wave, IT central banks in emerging and developing economies (including Ghana) have equally allocated substantial resources and effort (with the help of IMF) to enhance transparency in their policy environment. Indeed, such deliberate policy direction toward higher transparency has also been realized in Ghana over the past decade, via series of policy publication and relative improved media presence by Bank of Ghana. This has been facilitated by the pursuit of Inflation Targeting Lite (ITL) immediately following the inauguration of the Monetary Policy Committee (MPC) in September 2002. The central bank however formally shifted to a fully-fledged IT as a framework of monetary policy in May 2007². This policy shift made Ghana the second African country (after South Africa) but the first developing economy in the world to fully adopt IT regime. With more than decade of practicing of fully-fledged IT regime, it is therefore of paramount interest to ascertain the pace of policy transparency in Ghana.

Against this background, this paper aims to quantitatively determine the degree of monetary policy transparency in Ghana, utilizing both methodologies of Dincer and Eichengreen (2007, henceforth DE) and Al-Mashat, Bulif, Dencer, Hledik, Holub, Kostanyan, Laxton, Nurbekyan, Portililo & Wang (2018), henceforth CBT-IT. Although the study by Naszodi, Csavas, Erhart & Felcser (2016) obtained a transparency index of 5.5 for Ghana as at end-2009 using Dincer and Eichengreen (2007, henceforth DE) approach, their index largely reflects the early years of fully-fledged IT regime in Ghana (May 2007). In addition, their study reflects transparency that existed almost a decade ago and therefore not wholly representative of the contemporary monetary policy environment in Ghana. We further emphasize that considerable resources and policy efforts (including IMF support) have been devoted to enhancing monetary policy transparency in Ghana and therefore the degree of policy transparency would have changed since the time of their study. Besides, the limitation of DE approach calls for a more robust approach to evaluating the extent of policy transparency in Ghana as the central bank currently fits the criterion of an inflation-forecast-targeter.

Our application of the two transparency measures (DE and CBT-IT) on Ghana reveals that policy transparency environment of BOG has indeed improved since 2009. The DE method yields 8.5 score for Ghana (approximately 57%) for 2018 compared with the score of 5.5 (37%) reported by Nascodi et al., (2016) for 2009. In contrast, the CDT-IT method yields a transparency score of

²While some authors refer to the official announcement to date the official adoption of IT (see Kwakye, 2012, IMF, 2014), Abradu-Otoo et al. (2003) assert that even though formal announcement was made in May 2007, Inflation Targeting was launched in the latter part of 2002.

8.1 (41%). Thus, the two methods show a current range of policy transparency score of 8.1 - 8.5 for Ghana as at end 2018, suggesting that BOG is roughly 41% -57% transparent³ as at end 2018. The relatively moderate score for BOG emanated largely from low level of transparency about the FPAS and the policy processes which is consistent with poor performance of BOG within the Economic and Procedural thematic areas under the DE index. By implication, to further boost transparency, BOG is required to increase transparency in the following areas: (1) documentation and publication of the Bank's core quarterly projection model (FPAS) with key equations (especially the loss function); (2) provision of more information about how the BOG is dealing with the short-run sacrifice ratio (i.e. tradeoffs between output and inflation); (3) public access to the minutes from the MPC meetings with more detailed contributions by MPC members; (4) evaluating and publishing how each decision on policy instrument or target are attained; (5) Besides the fan chart for inflation that is regularly published in the monetary policy report, BOG should also consider publishing other core macroeconomic variables that are included in their baseline forecasts with confidence bands, risk assessments, and decomposition of forecast revisions; (6) the underlying methodology for constructing the forecast confidence bands should be clearly explained; (7) Regular review of forecasting performance of the central bank and made accessible to the public; (8) Continuous external evaluation of the policy framework and the FPAS at least every 5 years even when not under IMF program, and publishing the findings.

The next section (Section 2) briefly highlights the practical architecture of the contemporary monetary policy framework in Ghana, while Section 3 provides the proposed measures of policy transparency that underpinned the method adopted in our study. Section 4 provides the empirical findings regarding the extent of monetary policy transparency in Ghana, while Section 5 provides the concluding remarks.

2. Stylized Facts on Monetary Policy in Ghana

This section provides the stylized fact on monetary policy in Ghana with particular focus on the practical feature of the contemporary monetary policy regime.

2.1. Evolution of Monetary Policy in Ghana

Formal monetary policy in Ghana began with the enactment of the Bank of Ghana Act 1963 and the subsequent launch of credit control regulations in April 1964. This regulation guided the era of monetary policy through direct controls⁴ that was to persist throughout the 1980s to early 1990s. The period was marked by stringent controls on interest rate, credit ceiling and directed lending at the bidding of the authorities rather than for commercial reasons, alongside capital and exchange rate controls. However, expansive monetary policy coerced by fiscal dominance (reflected by persistent monetary accommodation of fiscal expansion fueled by significant

³ In contrast, Al-Mashat et al., (2018) derived a transparency score of 14.5 out of 15 and 11.5 out of 20 based on the DE and CBT-IT measures respectively for the Czech National Bank.

⁴Direct controls refer to the one-to-one correspondence between the instrument (such as a credit ceiling) and the policy objective (such as specific amount of domestic credit outstanding). Direct instruments operate by setting or limiting either prices (interest rates) or quantities (amounts of credit outstanding) through regulation.

political interference in the operations of the central bank) led to an accelerated and volatile inflation in the late 1960s through to the early 1980s. The deteriorated monetary and fiscal conditions fostered inflation to reach a triple-digit by 1983⁵ with an associated economic decline. According to Brownbridge and Gockel (1996), the financial sector policies were epitomized by severe financial repression, real interest rate steeply negative and most of the credit was directed to the public sector.

The deplorable macroeconomic conditions coupled with the inability of the then financial system to deliver effective financial services culminated in the implementation of a comprehensive stabilization programme⁶ by October 1983, following a consultation with the IMF and the World Bank. A key component of the programs was the Financial Sector Adjustment Program (FINSAP)⁷. The FINSAP resulted in the removal of credit ceilings, abolishing directed credit and credit controls, development of the money and capital markets. The core policy initiatives under FINSAP were intended to transform into improved monetary policy transmission mechanism. This era was typified by monetary targeting regime with a dominant application of indirect policy instruments (i.e. use of monetary aggregates such as broad money growth, reserve requirements, etc.).

Nevertheless, fiscal dominance continued to linger and this was perceived as a predominant factor in undermining the effectiveness of monetary policy in Ghana. Consequently, the lingering financial sector and fiscal challenges led to the launch of a second wave of financial sector reforms in 2001. The second reform was mainly aimed at addressing salient regulatory impediments and associated corporate governance issues in the entire financial structure. Accordingly, numerous laws were passed to enhance the institutional architecture of the financial system. Foremost among them is the enactment of the Bank of Ghana Act 2002, (Act 612), which granted operational independence⁸ to BOG and established the Monetary Policy Committee (MPC) with the responsibility of formulation and implementation of monetary policy. This Act thus initiated the shift from Monetary Targeting to Inflation Targeting (IT) regime in Ghana.

2.2. Practical Architecture of IT Implementation in Ghana

Ghana initially pursued Inflation Targeting Lite (ITL) with the inauguration of the Monetary Policy Committee (MPC) in September 2002 and empowered by the enactment of the BOG Act 2002 (Acts 612). The central bank however formally shifted to a fully-fledged IT as a framework

⁵Ghana recorded its highest inflation rate of 123% in 1983.

⁶Economic Recovery (ERP) and Structural Adjustment Programmes (SAP).

⁷FINSAP included the liberalization of interest rates and abolition of directed credit, restructuring of financially distressed banks, strengthening of the regulatory and supervisory framework, the establishment of the Ghana Stock Exchange (GSE), and promotion of non-bank financial institutions. The foreign exchange market also witnessed progressive reforms, culminating in the floating of the exchange rate and the establishment of forex bureaus to help eliminate the parallel markets.

⁸The BOG (Amendment) Act 2016 (Act 918), which is an act to amend the BOG Act 2002 (Act 612), was passed by Parliament and assented to by the President in August 19th, 2016. This amendment further strengthens the operational independence of BOG.

of monetary policy in May 2007⁹. The policy shift made Ghana the second African country (after South Africa) but the first developing economy in the world to fully adopt IT. The IT is based on the notion that policy is designed to target inflation through an inflation forecast. Given that the inflation forecast is a function of many macroeconomic variables, policy reacts to a whole range of variables. The current IT framework is thus premised on the fact that inflation is not solely a monetary phenomenon, but other factors do influence prices.

In this framework, the monetary policy tool of the BOG is the monetary policy rate (MPR), while the operating target is the overnight money market interest rate (Interbank rate). The MPR is the rate around which a policy corridor is defined for central bank's acceptance of deposit and granting of credit to commercial banks, reflecting a limited importance on monetary aggregates. However, for the monetary policy to have the desired impact on inflation (the prime objective) and the overall economy, it is critical that changes in policy interest rate affect the short run wholesale interest rate (e.g. overnight interbank rate) which in turn translates into changes in retail interest rates (e.g. lending and deposit rates) and ultimately influence the overall macroeconomy and inflation. Besides, the transmission of interest rate changes via the interest rate channel should preferably occur at a shorter period of time. This is based on the notion that faster transmission strengthens the impact of monetary policy on the real economy. Consequently, monetary policy effectiveness is often gauged by the ability and the speed with which the central bank continuously achieves the interest rate target.

The main features that differentiate inflation targeting from other monetary policy strategies are: (i) the central bank is committed to a unique numerical target (level or ranges) for annual or medium-term inflation; (ii) the inflation forecast over some horizon is the de facto intermediate target; and (iii) an important role for transparency, accountability and communication with the public (see Martinez, 2008). In this regard, the ensuing sections succinctly bring to light key benchmarks for the implementation of IT regime in the Ghanaian context.

2.2.1. Legal Objective and Target Autonomy

As clearly acknowledged in the literature, an IT central bank is required to have a clearly defined objective of monetary policy. Although the policy objective of Bank of Ghana has not changed over the years despite shifting policy regimes, the enactment of BOG Act 2002 (Act 612) formally articulated the prime objective of the central bank of Ghana. In particular, the Section 3 Subsection 1 of BOG Act 2002 (Act 612) stipulates that the prime (legal) objective of Bank of Ghana "is to maintain stability in the general levels of prices". The subsequent Subsection 2 also promulgates that "without prejudices to Subsection 1, the Bank shall support the general economic policy of the Government and promote economic growth and effective and efficient operation of banking and credit systems in the country, independent of instructions from Government or any other authority". The Bank's primary objective is clearly and easily

⁹While some authors refer to the official announcement to date the official adoption of IT (see Kwakye, 2012, IMF, 2014), Abradu-Otoo et al. (2003) assert that even though formal announcement was made in May 2007, Inflation Targeting was launched in the latter part of 2002.

accessible at its website. Also required by the tenets of IT regime, the price stability objective has been explicitly and quantitatively enumerated as a medium-term inflation target of 8 percent with a symmetric band of 2 percent (i.e. $8 \pm 2\%$). The medium-term inflation target is jointly set by BOG and the fiscal authority, while the corresponding annual inflation target is communicated clearly to the public via the budget statement for each fiscal year.

2.2.2. Central Bank Autonomy/Independence

Likewise, central bank independence/autonomy is well articulated among the key tenets of IT regime. Granting independence to central bank implies that no established bodies, government, parliament or any of their respective members have the power to interfere in the decisions taken by the central bank in the performance of its mission or mandate, and overthrow the course of decisions taken. Therefore, central bank is deemed autonomous when it is free to implement monetary policy instrument(s) without taking into account of any external pressures. Table 1 presents the extent of central bank of Ghana's autonomy as against selected emerging IT countries.

Table 1: Degree of central bank autonomy for selected emerging IT economies

Countries	Approximate Date of Official Adoption	Goal Autonomy	Target Autonomy	Instrument Autonomy		Target Level
		Legal Objective	Specification of Target	Credit to Government	Participation of Government	
Brazil	1999M6	Price Stability	G	No	No	4% +/-1.5%
Chile	1999M9	Price + Financial Stability	CB	Yes	Member to vote	3% +/-1.0%
Colombia	1999M9	Price Stability	CB	Non	Member to vote	3% +/-1.0%
Czech Republic	1997M12	Price Stability	G+CB	No	No	2% +/-1.0%
Ghana	2007M5	Price Stability	G + CB	Yes	No	8% +/-2%
Hungary	2001M6	Price Stability	G+CB	No	No	3% +/-1.0%
Indonesia	2005M7	Price Stability	G+CB	No	No	4% +/-1.0%
Israel	1997M6	Price Stability	G	No	No	1.0%-3.0%
Mexico	2001M1	Price Stability	CB	Yes	yes	3% +/-1.0%
Peru	2002M1	Monetary Stability	CB	No	Member to vote	2% +/-1.0%
Philippines	2002M1	Price Stability	G+CB	limited	Member to vote	3% +/-1.0%
Poland	1999M10	Price Stability	CB	No	No	2.5% +/-1.0%
Romania	2005M8	Price Stability	G+CB	No	No	2.5% +/-1.0%
Slovakia	2005M1 ¹⁰	Price Stability	CB	No	No	3% +/-1.0%
South Africa	2000M2	Price Stability	G + CB	Yes	No	3.0%-6.0%
South Korea	2001M1	Price Stability	G+CB	Yes	Yes	2.0%^
Thailand	2000M5	Monetary Stability	CB	Yes	No	2.5% +/-1.5%
Turkey	2006M1	Price Stability	G+CB	No	No	5% +/-2.0%

Note: G is Government; CB is Central Bank; ^ denotes target for 2016-18. Source: Central Banks' website, Svensson (2010) and Aguir (2018)

Consistently with the IT tenets, the BOG Act 2002 (Act 612) grants the BOG the operational independence to set interest rates, its dominant policy instrument under the IT regime. The operational independence of the Bank is further strengthened by the enactment of BOG (Amendment) Act 2016 (Act 918) which provides an insertion of new Subsection A1 into Section 4 of the principal enactment of Act 612. Box 1 below provides the insertion in the BOG 2002 Act (Act 612).

¹⁰ But according to Krusec (2011), Slovakia was an implicit inflation targeter in beginning of 1999.

 Box 1: Section 3 of BOG (Amendment) Act 2016 (Act 918)

Section 4 of Act 612 amended

3. The principal enactment is amended in section 4 by the insertion of a new subsection (1A)

“(1A) Except as provided in the Constitution, the Bank of Ghana, in the performance of its function under this Act, shall not be subject to the direction or control of any person or authority”

In terms of membership, The MPC comprises of seven (7) members – five (5) from the BOG and two (2) external members (see Box 2). Initially, by the BOG 2002 Act (Act 612) the two external members were appointed by government (via the Minister of Finance). However, following the enactment of BOG Amendment Act 2016 (Act 918), the external members are now appointed by the Board of Directors of BOG (see Section 14 of the BOG Amendment Act 2016, Act 918), reinforcing the operational independence of the central bank. The Governor of the central bank is the chairperson of the committee. The MPC meets six (6) times in a year. If the target is not achieved, the Bank of Ghana is not strictly accountable by law to explain developments to the Ministry of Finance or Parliament.

 Box 2: Section 14 of BOG (Amendment) Act 2016 (Act 918)

Section 27 of Act 612 amended

14. The principal enactment is amended by the substitution for section 27 of

“Monetary Policy Committee

27. (1) There is established by this Act, a committee of the Bank to be known as Monetary Policy Committee.

(2) The Monetary Policy Committee is responsible for the formulation of the Monetary Policy of the Bank.

(3) The members of the Monetary Policy Committee comprise

(a) the Governor,

(b) the First and Second Deputy Governors,

(c) the head of the Department responsible for economic research of the Bank

(d) the head of the Department responsible for Treasury Operations of the Bank, and

(e) two other persons with knowledge and experience which is relevant to the function of the Monetary Policy Committee, appointed by the Board who are not employee of the Bank.

(4) The members of the Monetary Policy Committee other than the employees of the Bank shall be paid the allowance determined by the Board.

The MPC, during its bi-monthly monetary policy decision-making, autonomously evaluates the latest BOG forecasts and appraises the imminent threats to the forecast over the medium-term. Similar to other IT central banks, the MPC reviews developments in inflation, the global economy, the real sector, the monetary sector, the fiscal sector, the external sector, consumer and business sentiments and inflation expectations. Contingent on these considerations, the MPC votes on whether and by how much to change the settings of monetary policy instruments. The Committee’s decisions are made on the basis of one-person one-vote. Each member unambiguously states with explanations why a particular rate decision was desired or otherwise, and the final policy decision is reached by consensus.

2.2.3. Transparency and Accountability

Transparency simply means honesty and openness, in an organizational (business or government) context. Notably, transparency and accountability are commonly regarded as the two core pillars of good corporate governance. Indeed, transparency and accountability have a natural interpretation as strategic moves that improve the signal-to-noise ratio and therefore empower economic agents to make a better-informed allocation of resources (Capistran and Ramos-Francia, 2010). In addition, better communication between the monetary authority and economic agents could lead to less dispersion of expectations, reducing the variance in relative prices which can in turn reduce the level of inflation (Ball and Mankiw, 1995). Conceivably, some of the cost of nominal movements in the economy may be related to the dispersion of inflation expectation (Lucas, 1972) while a fall in dispersion may enhance the effectiveness of the expectations channel of monetary transmission (Martinez, 2008). Accordingly, many economists opined that central banks can enhance their credibility¹¹ by having a transparent policy environment that is purposely designed to achieve long-term price stability.

Consequently, the central bank's primary objective of being transparent is to effectively facilitate the bank to tie economic agents' expectation to its own policy objectives. Since transparency boosts policy effectiveness and credibility, the Bank of Ghana considers effective policy communication, transparency and accountability as the major drivers to shape economic agents' formation of inflation expectation in Ghana. This has led the central bank to bestow considerable resources and determination to improve their transparency.

We find that the BOG first and foremost pre-announced and published on its website all the six policy meetings dates and times at the beginning of the year. The public is also reminded of the upcoming MPC meeting at least two weeks before the meeting date. Secondly, at the end of all meetings, the policy decision is immediately announced and explained at a press briefing (conference). Thirdly, the press release (policy decision), the transcript¹² of the press briefing with the Q&A sessions, the Summary of Economic and Financial Dataset as well as MPC Infographics (highlights of the Press Release) are made available on the Bank's website immediately after the press briefing. These policy documents are available in downloadable form in English. The summary of Financial and Economic Datasets is also available in downloaded PDF format.

Fourth, the Monetary Policy Report is published at the Bank's website within two weeks after the MPC meeting, providing detailed analysis of economic conditions at the time of the meeting. The report encompasses broad areas such as: world economic outlook and external sector report,

¹¹Gonzalez-Paramo (2007) professed credibility as a fundamental issue in modern central banking, while Blinder (1998, 2000) also deemed credibility as a treasurable asset that need to be seriously upheld by central banks.

¹² The transcript of the Press briefing provides the questions asked by the Press and corresponding responses by the Governor during the press conference after the MPC meetings.

monetary and financial developments, financial stability report, real sector developments, and an inflation analysis and outlook. Particularly, the report clearly provides the imminent risks to inflation and output over the short to medium terms alongside an inflation fan chart. Fifth, a detailed Banking Sector Report (BSR) which highlights developments and risks in the banking sector deliberated upon during the policy making process is further published after the MPC meetings.

Last but not the least, Ghana in 2018 has implemented the IMF's Enhanced General Data Dissemination System (e-GDDS) by establishing a National Summary Data Page (NSDP) that is linked to e-GDDS (see, IMF's Press Release No. 18/421). The NSDP is a one-stop national data portal to publish crucial macroeconomic data on the national accounts, government operations and debt, monetary and financial sector, and BOP, among other. Utilizing the Statistical Data and Metadata Exchange, the NSDP is in both human and machine-readable formats. Hosted by the Ghana's Minister of Finance and Economic Development (MOFEP), the NSDP contains links to statistics published by Bank of Ghana, Ghana Statistical Services and MOFEP. The establishment of NSDP would help inure greater data transparency as it proffers simultaneous access to timely information critical for monitoring economic conditions and policies by domestic and international policymakers and shareholders including investors and rating agencies.

Notwithstanding, the Bank has so far not provided a number of documents to the general public. Particularly, the minutes of the MPC meetings are not yet made available to the general public. Although, MPC decision is based on consensus, the publication of the minutes with detailed illustration of each member's decision regarding the positioning of the interest rate would shape economic agent's formation of inflation expectation. In addition, there are neither official documentations nor working papers regarding the forecasting framework (FPAS), the loss function as well as the medium-term forecast of key variable such as policy interest rate, output gap and exchange rate paths at the Bank's website. The ensuing policy question is: does the lack of publication of these policy documents significantly affect the degree of transparency and effectiveness of IT regime in Ghana? This is the focus of this paper.

3. Proposed Measures of Policy Transparency

Understanding and documenting the level of monetary policy transparency requires better measures of central bank transparency. Geraats (2002) provides a structured review of the theoretical and empirical literature on the consequences of transparency of monetary policy. He also proposed a distinction between uncertainty and incentive effects of transparency.

Several theoretical and empirical approaches have also been proposed to quantify the degree of central bank policy transparency. Notable studies that have developed indices for policy transparency include Fry, Julius, Mahadeva, Roger & Sterne (2000), Siklos (2002), Eijffinger

and Geraats (2006), Dincer and Eichengreen (2007, 2010, 2014), Naszodi et al (2016) and Al-Mashat et al., (2018). For instance, Fry et al. (2000) gauged central bank transparency of ninety-four (94) countries using an evenly weighted average of three sub-indicators: (1) whether the central bank provides prompt public explanations of its policy decisions; (2) the frequency and form of forward-looking analysis offered to the public; and (3) the frequency of bulletins, speeches, and research papers. Siklos (2002) also provided comparable measures for twenty OECD countries but again for only one point in time, the late 1990s. The main limitation of both studies is the crude definition of transparency.

In view of this limitation, Eijffinger and Geraats (2006), henceforth EG, provided a much broader definition of transparency by focusing on disclosure of information pertinent to monetary policymaking. They categorize transparency into the following five dimensions: (1) political transparency (openness about policy objectives); (2) economic transparency (openness about data, models, and forecasts); (3) procedural transparency (openness about the way decisions are made, achieved mainly through the release of minutes and votes); (4) policy transparency (openness about the policy implications, achieved through prompt announcement and explanation of decisions); and (5) operational transparency (openness about the implementation of those decisions—in other words, about control errors and macroeconomic disturbances affecting their magnitude). Their index covered 9 major central banks from 1998 to 2002. They found that although significant increases are observed for all monetary policy regimes, the inflation targeting central banks are by far the most transparent.

Dincer and Eichengreen (2007, henceforth DE) further extended the EG (2006) transparency index to 100 central banks. According to DE (2014), political transparency relates to formal policy objective, quantification of objective and central bank independence, while economic transparency borders on disclosure of the model used for policy analysis, regular publication of central bank's forecast and easy access to basic economic data relevant for the conduct of monetary policy. The Procedural transparency pertains to the Bank's explicit disclosure of policy rule, provision of a comprehensive account of policy deliberation and how each decision on policy instrument or target are attained. Policy Transparency relates to prompt public notification and explanation of policy decision and the likely future policy action. Lastly, the Operational transparency also pertains to regular evaluation of policy target, provision of information on macroeconomic shocks that affect the policy transmission process as well as evaluation of policy outcome vis-à-vis its macroeconomic objectives. Applying similar classification of transparency, a number of empirical studies (notably, Chortareas, Stasavage and Sterne 2002; Crowe and Meade, 2008; Demertzis and Hallett, 2007; Dincer and Eichengreen, 2014; Ehrmann, Eijffinger and Fratzscher, 2012; Middeldorp, 2011; Naszodi et al., 2016; Swanson, 2004; inter alia) claim that central bank transparency has a favorable effect on the economy. In contrast, some other papers (notably, Demertzis and Hoerberichts, 2007; Kool, Middeldorp, & Rosenkranz, 2011; Morris and Shin, 2002; Neuenkirch, 2013; van der Crujisen, Eijffinger, & Hoogduin, 2010; and Walsh 2007) however find either that higher transparency is unfavorable or has a nebulous effect on mitigating macroeconomic uncertainty.

Another notable contribution is the study by Naszodi et al (2016) which proposed composite EG transparency index to 99 central banks (including Ghana) over the period 1998-2009. They rank the countries according to the degree of policy transparency using both the standard EG-DE index and a proposed composite EG index which aggregates the same fifteen components of the EG-DE method. The composite transparency index is obtained by regressing standard deviation of the individual CPI forecasts on each of the 15 components of EG index. They also determine which of dimension of transparency that exerts significant impact on macroeconomic variable (forecast inflation dispersion). Among others, they derive an index of 5.5 and 0.67 for Ghana based on the standard and weighted EG transparency measures respectively, ranking the latter economy as the 44 position (out of 97 countries considered). They also find that economic transparency has the robust favourable effect on inflation forecast dispersion.

Nonetheless, the EG (2006) and DE (2007, 2014) transparency measures have been criticized for lacking sufficient depth on advanced forms of communications, especially for the inflation-forecasting-targeting (IFT) countries. First, it becomes practically cumbersome to discriminate between different IFT countries and between IFT and non-IFT countries, since all IFT countries attain near maximum score of the EG-DE index. In addition, the EG-DE questions do not capture transparent communication of monetary and macro-prudential policy interactions despite the increasing importance of financial stability and macro-prudential policies after the global financial crisis (see, Al-Mashat et al., 2018). Consequently, Al-Mashat et al., (2018) proposed new transparency index (henceforth, CBT-IT index) for inflation-forecast-targeting central banks which overcomes the shortcomings of EG-DE index. Based on the theoretical underpinnings of IFT framework, the CBT-IT index focuses on three broad categories: (1) transparency about policy objectives, (2) transparency about the Forecasting and Policy Analysis System (FPAS), and (3) transparency about the policy process. The CBT-IT index offers more detailed scrutiny about the practice of central bank compare to the EG-DE index.

The questions on the “Transparency about policy objectives” explore the transparency of the central bank along the following 4 dimensions:

- Statement of the objective
- Clear communication of those objectives
- Communication of performance of the central bank in terms of managing the short-run tradeoffs between output and inflation (sacrifice ratio), and
- The role of financial stability in monetary policy communication

The questions related to the “Transparency about the FPAS” category appraise the robustness and public awareness of the FPAS process adopted by the central bank based on the following 9 scopes:

- Publication of historical and forecast datasets used in policy decision making within the FPAS

- Publication of loss/reaction function (with the coefficients) and communicating the judgment that has been involved on the forecast.
- Publication of fan charts for all key macroeconomic variables (including inflation, GDP growth, output gap, endogenous interest rate path and exchange rate)
- Publication of underlying methodology for the construction of fan charts as it increases the value of the information for the users.
- Publication of alternative scenarios as it helps users to decipher a couple of potential risks in the baseline forecast.
- Clear indication of how the policy rate might response should any of the speculated shock materialize
- Publication of forecast revisions of the full set of both historical and forecasted macro-variables; and
- Indicating how much attention is given to measures of financial conditions in the monetary policy reports.

Lastly, the questions concerning the “Transparency about Policy Process” uniquely examine the central bank policy process along the following 7 aspects:

- Holding press conference soon after every policy meeting and at pre-announced date and time.
- Webcasting Press conference and Q&A session and the transcripts (in English) made available at the bank’s website
- Organizing regular meetings with market analyst to clearly explain the assumptions underpinning policy decisions.
- Regular presentation of forecast update (including Q&A sessions) to journalist, market analyst and participants.
- Publication of minutes of detailed contribution of each MPC member during the meeting
- Clearly defining the role of staff and policymakers in the decision-making process
- Allowing external and independent evaluation of the policy framework and the FPAS every 5 years.

For brevity, readers are referred to Al-Mashat et al (2018) for the justification of each question under the broad categories of the CBT-IT index. The proposed CBT-IT index was applied to Czech National Bank (CNB). They derive a policy transparency index of 11.5 for CNB based on the CBT-IT methodology in 2018. The study also finds that the transparency of CNB is growing over the years but there are areas that should be improved (see Al-Mashat et al., 2018).

4. Empirical Analysis of Policy Transparency in Ghana

This section presents the current state of monetary policy transparency in Ghana using both DE and CBT-IT methodologies.

4.1 Transparency Index for Bank of Ghana: CBT-IT Approach

In this section, we ascertain Ghana's policy transparency score by using the newly developed transparency index for inflation-targeting central banks (CBT-IT index) by Al-Mashat et al., (2018) which overcomes the shortcomings of DE index. Basically, the CBT-IT index hinges on three main categories. In this study, Category A denotes transparency about policy objectives. Category B focuses transparency about the Forecasting and Policy Analysis System (FPAS), while Category C represents transparency about the policy process. Appendix A3 provides the CBT-IT questions, scoring system for the index and our score for BOG. We proceed in the subsequent paragraph to justify each transparency score. The score for BOG in this paper is solely contingent on information provided at the Bank's website and statutes, annual reports, other published documents and the routine procedures as well as events (at least two weeks) before and after (at most one month) policy meetings.

In Category A, the transparency about policy objectives has 4 dimensions. The first dimension borders on clear statement of policy objectives. A perfect score is attained if Inflation is the primary objective such that any other objective (output, etc.) cannot be inconsistent with the primary objective of anchoring inflation and inflation expectations. In this case, BOG has a perfect score (1/1) because the Section 3 Subsection 1 of the Bank of Ghana Act 2002 (Act 612) clearly stipulates that the primary objective of the BOG is to maintain price stability. This core objective of monetary policy can also be found at the bank's website. In addition, the second dimension of Category A ascertains whether there is a clearly defined inflation target. We find that BOG has a clearly defined the medium-term inflation target of 8% with a symmetric band of 2% and this information is easily accessible at the bank's website. The clarity and publicity of inflation target also gives a perfect score (1/1) for BOG regarding clear communication of the objective under Category A. The third dimension of question under Category A concerns the communication of performance of the central bank in terms of managing the short-run tradeoffs between output and inflation (sacrifice ratio). A thorough review of press releases and transcripts at the bank's website reveals that there is no official or policy document on loss function that is easily accessible to the public. Consequently, we score zero (0) for BOG on the question relating to publicity of its loss function. The next question under category A focuses on the role of financial stability in monetary policy communication. In this case, it first ascertains whether another institution is responsible for financial stability. A perfect score is attained when 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. The leg of the last dimension also determines whether the central bank is at least partly responsible for financial stability. In both case, we give a perfect score (2/2) to BOG as financial stability mandate of BOG besides the prime objective of price stability is well articulated in the Section 3 Subsection 1 & 2 of the BOG Act 2002 and amendment Act 2016 (Act 612 and 918 respectively). The Section 3 Subsection 1 of the Act 612 stipulates that the prime (legal) objective of Bank of

Ghana “is to maintain stability in the general levels of prices”. The Subsection 2 promulgates that “without prejudices to Subsection 1, the Bank shall support the general economic policy of the Government and promote economic growth and *effective and efficient operation of banking and credit systems* in the country, independent of instructions from Government or any other authority”. Accordingly, the BOG is the sole regulator of the banking system to ensure financial stability. Various macro-prudential benchmarks for each segment of the banking system are provided and systemic stress tests are carried out by relevant departments of the Bank. For instance, the link for the BOG’s financial laws for the Banking sector can be found at BOG’s website¹³. Also, the mandate of BOG is clearly stated at its website as “We formulate and implement monetary policy to achieve price stability, contribute to the promotion and maintenance of financial stability, and ensure a sound payment system” (see, www.bog.gov.gh). On aggregate, our total score for BOG in Category A is **4/5**, implying that BOG has done pretty well by clearly and satisfactorily articulating its policy objectives to the general public.

In Category B, the transparency about the FPAS also has nine (9) dimensions. The first dimension (i.e. B1) determines public accessibility to basic economic data relevant for the conduct of monetary policy and whether they are available in a downloadable format at the bank’s website. According to CBT-IT, a perfect score is attained if all series used in producing the MPR are published in a downloadable format, such as an Excel spreadsheet. These include at least the seven series (capacity utilization (preferably the output gap), inflation, inflation expectations, wages, unemployment, and GDP growth). However, the score becomes 0.5 if a minimal set of the aforementioned series is publicly available and zero score when none of the series is available. We find that BOG recently publishes a summary of Economic and Financial Dataset (SEFD, including inflation, inflation expectation, GDP, monetary and financial dataset, fiscal data, etc.) after each press briefings. We find, however, that BOG does not published output gap, wages and unemployment data in any of its bulletin or press releases or monetary policy reports. Consequently, we score 0.5 for BOG in the first dimension of Category B. Besides, the subsequent question (B2) relates to the public availability of core quarterly projection model and its documentation updated within the last 5 years. We find that although the FPAS model is used by BOG for policy forecasting and analysis, this is not made easily accessible to the general public. In this case, a zero (0/1) score is given to BOG for question B2. Similar BOG attained a zero score for the question (B3) of how transparent is the central bank regarding its reaction function (loss function). This is because there is currently no documentation on policy reaction function for BOG nor any reference made in the press release or monetary policy report to a publication of that sort. Questions 4-6 of Category B also focus on (i) central bank’s regular publication of a consistent endogenous-instrument (e.g., policy rate) in its FPAS over a horizon of at least two years, (ii) the provision of forecast densities (fan charts) to communicate forecast uncertainty and (iii) whether the underlying methodology for the

¹³ Available at: <https://www.bog.gov.gh/supervision-a-regulation/financial-laws>

construction of the forecast densities is available to the public respectively. According to Al-Mashat et al. (2018), a perfect score is given if the bank publishes the variables such as inflation, GDP growth, the endogenous interest rate path, the output gap, and the exchange rate in questions 4 and 5 (i.e. . Each variable has a weight of 0.2. For question B6, however, a perfect score is obtained if the methodology of fan charts published in all monetary policy reports is clearly explained and/or the links to a technical paper is provided. A review of the bank's website however unveils that (1) no quarterly forecasts of any for the macroeconomic variables are published by BOG in the case of B4; (2) only a fan chart of inflation with trajectory up to two years is published in a form of fan chart in the monetary policy report of BOG¹⁴ (i.e. score 0.2 for B5); and (3) BOG does not explain the underlying methodology for constructing the fan chart (for B6). As a result, we assign a total score of 0.2/3 to BOG for these three dimensions of Category B4-B6.

The dimension 7 of Category B (i.e. B7) determines whether forecast revisions are made available to general public. The detailed decomposition of forecast changes (of all the key policy variables) vis-à-vis the previous forecast is not published. We however identify mixed results as the press statement normally provides upside and downside risks to forecast revisions (inflation and output growth) but there is no such information provided regularly to the public for other policy variables like exchange rate, endogenous interest rate output gap. For instance, Paragraph 23 of the November 2018 MPC Press Statement reads:

“Ladies and Gentlemen, although inflation is forecasted to remain within the medium-term target band, the latest assessment shows that there are underlying pressures including risks from the continuing escalating global trade tensions, steady rise in global inflation, further hikes in US interest rates, and a stronger US dollar. On the downside, the recent significant decline in crude oil prices since mid-October 2018 by about 24 percent could lower ex-pump prices, and help moderate the risks going forward.”¹⁵

We therefore assign a score of 0.4/1 for BOG in the case of B.

The next question in Category B (i.e. B2) ascertains the central bank publishes alternative scenarios in the monetary policy reports to illustrate key risk(s) in the baseline forecast. We notice that although no alternative forecast scenario(s) is (are) published graphically to the public, the monetary policy report (MPR) however communicates the imminent risks to the baseline forecast. All the same, the risks are just communicated in the MPR without accompanying forecast output(s) and hence the public cannot easily evaluate the risks by themselves. In this case, BOG has a zero (0) score. For dimension 9, the Category B determines whether the monetary policy reports include historical data and forecasts for financial variables. According to Al-Mashat et al (2018), 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

¹⁴ Available at: https://www.bog.gov.gh/monetary_policy_rpts/

¹⁵ Source: https://www.bog.gov.gh/privatecontent/MPC_Press_Releases/MPC%20Press%20Release%20-%20November%202018.pdf

surveys). In this case, a perfect score is attained if historical data on 5 or more policy variables are available, and forecasts for 5 or more of the policy variables are available. A thorough review of the bank's website shows there is no forecast series for the above financial variables. In addition, the summary of economic and financial dataset reports the historical series for long-term government bond yields, consumer lending rates, equity prices and credit aggregates¹⁶. More so, the survey on credit aggregates and standards are reported in the Banking Sector report although the historical data is unavailable to the general public but could be obtained from the BOG upon request. This report can be assessed at https://www.bog.gov.gh/banking_sect_report/. In this case, we gave BOG a score of 0.5/1 because a few number of observed financial datasets is made available to the general public. In sum, total score for BOG in Category B of CBT-IT transparency measure is 1.8/9, which suggests that BOG ought to significantly improve the transparency of its policy analysis and forecasting framework.

In the case of Category C, CBT-IT's transparency about policy process (TPP) has seven (7) dimensions. Notably, first question (C1) of Category C determines whether the central bank publishes press statement immediately following the policy decisions. According CBT-IT, a perfect score to this question is attained (1/1) if the press statement is published in English immediately following the policy decisions. If it is however published in a native language only, the score is 1/2. In this regard, we gave a perfect score (**i.e. 1/1**) to BOG as press release or statement is always published immediately following the policy decision at the press conference. The press statement is readily available at the Bank's website and in English language. It is easily accessible at <https://www.bog.gov.gh/monetary-policy/press-releases>. The second question (C2) of this category also scores the institution if its policy decision is explained at a press conference immediately after it is announced and there are presentations available in English. In this case, a perfect score is given if 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. After thorough review of the routine processes during the time of monetary policy meeting, we gave a perfect score of **1/1** to BOG. This is because the interest rate decisions are announced at a pre-determined date after all policy meetings and the reasons underpinning such policy directions are adequately explained during the press briefing. In addition, a section of the press briefing is rather telecasted while downloadable forms of both the press releases and the transcripts of the MPC press briefing are made publicly available at the Bank's website in English¹⁷. The next question (C3) ascertain whether the central bank presents its regular forecast updates with the Q&A session to journalists, analysts, and market participants. A perfect score is given if the response is affirmative and the presentation and Q&A are available in English. We find that BOG only meets the press immediate after rate decisions. There is however intermittent meetings with investors and market analysts but deliberations of

¹⁶This information can be found at: <https://www.bog.gov.gh/monetary-policy/press-releases/3871-summary-of-economic-and-financial-data-november-2018>

¹⁷ This information is readily available at https://www.bog.gov.gh/mpc_press_release/.

such meetings are not made available to the general public. Consequently, we gave a score of **0/1** to BOG for C3 as there is no evidence or public knowledge of such regular forecast updates with the Q&A session to journalists, analysts, and market participants.

For question 4 in Category C (i.e. C4), the CBT-IT focuses on the publication of policy deliberations (“minutes”) in less than one month after the meeting. This question seeks to determine whether policy decisions are made by a (i) monetary policy committee (MPC) or (ii) single policymaker. Also, a perfect score is assigned if the response is affirmative for either (i) or (ii) along with detailed contributions by individual MPC members as well as the voting results on the main policy instrument. In this regard, although policy decisions are BOG is based on consensus, there is no evidence of publication of the minutes of the policy deliberations with detailed voting records of each member of MPC at the website. Consequently, our score for BOG in C4 is **0/2**. The fifth dimension of Category C (i.e. C5) however investigates whether the role of staff and policymakers in the baseline forecast process communicated clearly. In this instance, if the ownership of the forecast and its role in the decision-making process is defined clearly, a perfect is assigned. The score is however zero if the response to C5 is negative. Upon enquiries, we find that although the forecast is the key, it is not the only input to monetary policy decision-making at BOG. Staff level meeting precede every pre-MPC and MPC meetings to discuss the current forecast and macroeconomic developments and risks to the forecast. As a result, we assign a score **1/1** for BOG in the case of C5. The ensuing question (C6) of Category C explores the forecasting performance of the central bank reviewed at least once a year in the monetary policy reports or in a separate document. A thorough search on the Bank’s website points to no publication of regular review of forecasting performance in the monetary policy report or in any official documents, even though such exercise could be in-house. Due to lack of documentation and publicity of such exercise, we therefore gave a score of **0/1** for BOG regarding C6.

For the last dimension of Category C (i.e. C7), the CBT-IT focuses on the last time the central bank or the government held or invited an external evaluation of the policy framework and the FPAS, and whether the results were made publicly available. The staffs of International Monetary Fund (IMF) visit the BOG on routine missions under the Ghana/IMF programs or on special request (assistance) to assist and evaluate the policy framework. Their findings and recommendations are usually included in their communiqué for the missions. For instance, Ms. Annalisa Fedelino, the lead of the IMF team that visited Ghana from June 20-26, 2018 concluded that: “**The monetary policy stance remains appropriate** and inflation is expected to continue to decline to the 8 percent target before the end of the year. Responding to the gradual lowering of the monetary policy rate, lending rates have also been inching down. Recent exchange rate pressures are expected to be short-lived, provided that fiscal consolidation continues. A key priority is to strengthen foreign exchange (FX) management to help foster a deeper and more

liquid FX market.”¹⁸ However, since a somewhat partial report on the evaluation of the policy framework or FPAS is provided to general public, we assign a score of **0.5/1** for BOG in this category of question. So, total score of Category C for BOG is **3.5/7**, implying the need for rapid improvement in TPP by BOG.

Our analysis identify that out of 20 questions based on the three broad categories of CBT-IT index, BOG had a transparency score of 8.3, indicating a moderate degree of monetary policy transparency in Ghana. We check the robustness of our score by further estimating the transparency index for BOG using the DE-EG methodology.

4.2 Transparency Index for Bank of Ghana: DE-EG Approach

The DE-EG measure of central bank transparency focuses on five thematic areas: Political, Economic, Procedural, Policy and Operations (henceforth, PEPPO). Appendix B presents the various questions for PEPPO transparency with DE-EG score and our corresponding scores for the extent of BOG transparency. Similarly, our score for BOG is based on the information provided at the Bank’s website and statutes, annual reports, other published documents and the routine procedures during and after MPC meetings. On the whole, we find the Bank to perform creditably well as it has higher score for transparency index in 3 out of 5 thematic areas based on DE-EG approach. Particularly, the Bank performs well in Political and Policy Transparency measures with perfect score of 3/3 each. Also, the score for the Bank’s Operational Transparency is quite high as well (scored 2/3). In contrast, the Bank performed very poor in both Economic and Procedural Transparency measures with values of 0.5/3 and 0/3 respectively. The assessment of the score reveals a weak policy adherence to procedural and economic transparency. On aggregate, we find an overall DE-EG transparency score of 8.5 out of 15 for Bank of Ghana, indicating 57.5% degree of monetary policy transparency in Ghana as at end 2018. This compares with a score of 5.5 (36.7%) reported by Nascodi et al., (2016) for the year 2009.

4.3 Discussion of results

Generally, it is clearly apparent that CBT-IT score for BOG does not deviate significantly from corresponding value from DE-EG measure. The two transparency measures (DE and CBT-IT) thus surmise that BOG currently has a policy transparency score of 8.3 - 8.5, indicating that BOG is 41.0% -57.5% transparent in its current policy regime. In contrast, Al-Mashat et al. (2018) derived a transparency score of 14.5 out of 15 and 11.5 out of 20 for the Czech National Bank based on the D-E and CBT-IT measures respectively. According to the CBT-IT approach, the relatively moderate score for BOG emanated largely from low level of transparency about the FPAS and policy processes and this is consistent with the poor performance of BOG within the Economic and Procedural thematic areas under the DE index.

¹⁸ Available at: <https://www.imf.org/en/News/Articles/2018/06/26/pr18256-imf-staff-concludes-visit-to-ghana>

The two transparency measures for BOG clearly suggest that several areas of policy communication need to be improved in order to boost transparency, and hence the effectiveness and credibility of the current monetary policy regime. Notably, increased transparency by BOG is required in the: (1) documentation and publication of the Bank's core quarterly projection model (FPAS) with key equations (especially the loss function); (2) provision of more information about how the BOG is dealing with the short-run sacrifice ratio (i.e. tradeoffs between output and inflation); (3) public access to the minutes from the MPC meetings with more detailed contributions by MPC members; (4) evaluating and publishing how each decision on policy instrument or target are attained; (5) Besides the fan chart for inflation that is regularly published in the monetary policy report, BOG should also consider publishing other core macroeconomic variables that are included in their baseline forecasts with confidence bands, risk assessments, and decomposition of forecast revisions; (6) the underlying methodology for constructing the forecast confidence bands should be clearly explained; (7) Regular review of forecasting performance of the central bank and made accessible to the public; (8) Continuous external evaluation of the policy framework and the FPAS at least every 5 years even when not under IMF program, and publishing the findings.

5. Conclusion

Greater policy transparency is broadly inevitable as monetary policy necessitates a dual role by central banks. This is because a central bank must not only be a heedful observer of outcomes but also be able to shape the outcomes. In addition, greater policy transparency has not been linked to policy accountability but also endorsed a medium to boost monetary policy credibility, effectiveness and flexibility. As a consequent, this study determines the degree of monetary policy transparency in Ghana following over decade practice of inflation targeting regime. In this regard, we employ the methodologies proposed by both DE and CBT-IT. Prior to that, we assess the institutional and structural framework of Bank of Ghana (BOG) vis-à-vis the tenets of inflation targeting regime with regards to clarity of policy objective, extent of central bank independence and policy accountability and transparency.

The following observations are worth mentioning. We uncover that the legal framework for the BOG operations (such as clarity in policy objective, central bank independence, etc.) is consistent with the IT tenet. Our analysis also reveals that DE method yields a transparency index of 8.5 out of 15 points while the CBT-IT gives 8.3 out of 20 points for Bank of Ghana as at mid-2019. Both measures robustly imply a moderate degree of monetary policy transparency in Ghana ranging between 41% and 57%. Compared to the estimate of 5.5 (37%) for 2009 by Naszodi et al (2016), our estimates strongly suggest that monetary policy transparency has certainly improved since 2009.

Yet, the two transparency measures clearly suggest that several areas of policy communication need to be improved by BOG in order to boost transparency, and hence effectiveness and

credibility of the current monetary policy regime. Particularly, the area that required significant attention by BOG in order to boost its policy transparency are: (1) documentation and publication of the Bank's core quarterly projection model (FPAS) with key equations (especially the loss function); (2) provision of more information about how the BOG is dealing with the short-run sacrifice ratio (i.e. tradeoffs between output and inflation); (3) public access to the minutes from the MPC meetings with more detailed contributions by MPC members; (4) evaluating and publishing how each decision on policy instrument or target are attained; (5) Besides the fan chart for inflation that is regularly published in the monetary policy report, BOG should also consider publishing other core macroeconomic variables that are included in their baseline forecasts with confidence bands, risk assessments, and decomposition of forecast revisions; (6) the underlying methodology for constructing the forecast confidence bands should be clearly explained; (7) Regular review of forecasting performance of the central bank and made accessible to the public; (8) Continuous external evaluation of the policy framework and the FPAS at least every 5 years even when not under IMF program, and publishing the findings.

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Appendix A: Application and Determination of CBT-IT Transparency question and score for Bank of Ghana

This section applies the CBT-IT questions to the Bank of Ghana (BOG) in 2018 and the scores BOG at 8.3 out of 20. This indicates a low transparency score of 41%.

Category A: Transparency about Objectives

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?	
Single inflation objective or multiple policy objectives without prioritization	0.0
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.	1.0

BOG score: 1/1

A2. Is the inflation target defined clearly?	
No medium-term numerical target over a horizon of 2-3 years or more (hereafter <i>medium term</i>).	<i>0.0</i>
Inflation target defined as a " <i>tolerance</i> " or " <i>control range</i> " target. Inflation target defined as a medium-term target, however, the meaning of the range or the band is not clear.	<i>0.5</i>
Inflation target defined as a well-defined <i>point</i> target. If a band is used, it is clearly communicated.	<i>1.0</i>

BOG score: 1/1

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.	
<i>(i) Another institution is responsible for financial stability.</i>	
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.	<i>0.0</i>
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.	<i>1.0</i>

BOG score: 1/1

<i>(ii) Central bank is at least partly responsible for financial stability.</i>	
The borderlines between the monetary policy and financial stability tools are unclear. This creates confusion about the primary objective of price stability.	<i>0.0</i>
The central bank has both monetary policy and macro-prudential tools and it is clear how the central bank adjusts its tools to achieve its monetary policy and financial stability objectives.	<i>1.0</i>

BOG score: 1/1

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?	
No.	0.0

Yes.	1.0
Perfect score requires: the central bank should publish the values of the loss function and represent them in a chart.	

BOG score: 0/1

BOG's Total Score for Category A =3/4

Category B: Transparency about the FPAS

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.	
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

BOG score: 0.5/1

B2. Is the core quarterly projection model (model used for policy-making) publicly available and documentation updated within the last 5 years?	
No	0.00
Yes, in a “working paper” format only, i.e., irreproducible	0.25
Yes, in a working paper and with code.	0.50
Yes, in a working paper, with code, and web-based front-end to modify forecast assumptions.	1.00

BOG score: 0/1

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?	
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

BOG score: 0/1

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?	
None.	0.0
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.	1.0

BOG score: 0/1. No forecast of the variables is published

B5. Does the central bank regularly publish forecast densities (fan charts) to communicate forecast uncertainty?	
No fan charts.	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.	1.0

BOG score: 0.2/1. Only Fan chart for inflation is published

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)?	
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

BOG Score: 0/1.

B7. Does the central bank regularly publish an assessment of forecast revisions (decomposition of forecast changes vis-à-vis the previous forecast)?	
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

BOG score: 0.2/1

B8. 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).	1.0

BOG score: 0/1

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.	
No data or forecast of financial variables is 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

* 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.

BOG score: 0.5/1

BOG's total score for Category B: 1.8/9

Category C: Transparency about Policy Process

C1. 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.	0.0
The central bank publishes press statements in the native language only.	0.5
The central bank publishes press statements in English.	1.0

BOG score: 1/1

C2. Is the policy decision explained at a press conference immediately after it is announced? Are the presentations available in English?	
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

BOG score: 1/1

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?	
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

BOG score: 0/1

C4. Is there a public account of the policy deliberations (“minutes”) published in less than one month after the meeting?	
<i>(i) when policy decisions are made by a monetary policy committee</i>	
No.	0.00
Yes, but condensed, non-attributed, and without voting results.	0.50
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.	1.00

BOG score: 0/1

<i>(ii) when policy decisions are made by a single policymaker</i>	
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No.	0.00
Yes, with arguments/explanations.	1.00

BOG score: 0/1

C5. 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.	0.0
Yes. The ownership of the forecast and its role in the decision-making process is defined clearly.	1.0

BOG Score: 1/1

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?	
No	0.0
Yes	1.0

BOG Score: 0/1

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?	
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

BOG Score: 0.5/1

BOG's Total Score for Category C: 3.5/7

Overall BOG's Transparency Score is: $8.3/20 = 41.0\%$

Appendix B

Application of Dincer-Eichengreen (DE) Central Bank Transparency Questions and Scores for Bank of Ghana

This section applies the DE (2014) transparency questions to the Bank of Ghana (BOG) in 2018 and the scores BOG at 8.5 out of 15. This indicates a moderate transparency score of 56.7%

1. Political Transparency

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

2. Economic Transparency

	Questions	D-E Score	BOG Score
(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.)		
i.	Quarterly time series for at most two out of the five variables	0	
ii.	Quarterly time series for three or four out of the five variables	1/2	1/2
iii.	Quarterly time series for all five variables	1	
(b)	Does the central bank disclose the macroeconomic model(s) it uses for policy analysis?		
i.	No	0	0
ii.	Yes	1	
(c)	Does the central bank regularly publish its own macroeconomic forecasts?		
i.	No numerical central bank forecasts for inflation and output	0	0
ii.	Numerical central bank forecasts for inflation and/or output published at less than quarterly frequency	1/2	
iii.	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

	Questions	DE Score	BOG Score
(a)	Does the central bank provide an explicit policy rule or strategy that describes its monetary policy framework?		
i.	No	0	0
ii.	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?		
i.	No or only after a substantial lag (more than eight weeks)	0	0
ii.	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?		
i.	No or only after a substantial lag (more than eight weeks).	0	0
ii.	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

	Questions	DE Score	BOG Score
(a)	Are decisions about adjustments to the main operating instrument or target announced promptly?		
i.	No or only after the day of implementation	0	
ii.	Yes, on the day of implementation	1	1
(b)	Does the central bank provide an explanation when it announces policy decisions?		
i.	No	0	
ii.	Yes, when policy decisions change, or only superficially	1/2	
iii.	Yes, always and including forwarding-looking assessments	1	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)?		
i.	No	0	
ii.	Yes	1	1

5. Operational Transparency

	Questions	DE Score	BOG Score
(a)	Does the central bank regularly evaluate to what extent its main policy operating targets (if any) have been achieved?		
i.	No or not very often (at less than annual frequency)	0	
ii.	Yes but without providing explanations for significant deviations	1/2	
iii.	Yes, accounting for significant deviations from target (if any); or, (nearly) perfect control over main operating instrument/target	1	1
(b)	Does the central bank regularly provide information on (unanticipated) macroeconomic disturbances that affect the policy transmission process?		
i.	No or not very often.	0	
ii.	Yes but only through short-term forecasts or analysis of current macroeconomic developments (at least quarterly)	1/2	1/2
iii.	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?		
i.	No or not very often (at less than annual frequency)	0	
ii.	Yes but superficially	1/2	1/2
iii.	Yes, with an explicit account of the contribution of monetary policy in meeting the objectives	1	

The Overall BOG's score for DE Transparency Index is $8.5/15 = 56.7\%$, indicating a moderate degree of monetary policy transparency in Ghana. The assessment of the score particularly reveals a weak policy adherence to procedural and economic transparency.