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Setting the Operational Framework for Producing Inflation Forecasts[+]

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I. Introduction

The paper reviewed discusses the intricacies and processes involved in the production of the "best possible inflation forecasts". Issues such as the choice of an appropriate index, the forecast design and requirements as well as communication strategies were discussed therein. The significance of the paper lies in the fact that it serves as an operational guide to countries transiting to inflation targeting. A summary of the paper is presented below, followed by lessons for Nigeria.

II. Summary of the Paper

In the study, inflation targeting was defined as a framework which involved the designing and implementation of monetary policy around a long-term inflation objective. The importance of inflation targeting as a monetary policy framework for reducing the lags associated with monetary policy actions, and which could boost the credibility of the monetary authorities in the performance of its mandate was clearly underscored in the paper. The paper also highlighted that an important element of inflation targeting central banks is the production and announcement of an explicit inflation target. The study highlighted the importance of choosing an appropriate price index as a measure of inflation target. Such an index must be provided on a timely basis, not prone to constant revisions and is easily understood by the public. As noted in the paper, most inflation targeting economies

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use the consumer price index. Understanding the time series properties of the index and separating the transitory components of the chosen price index from its permanent components were also highlighted. In the case of computing the core inflation, the authors identified three basic methodologies. The first being the traditional approach of excluding the items prone to transitory shocks such as food and energy prices from the price index. The second approach examined the distribution of price movements in the CPI components and excluded any extremes, while the third method adopted the time series technique to estimate the trend component of the index. According to the authors, either of these methods could be used depending on the objective or purpose. For instance, the traditional approach is considered appropriate for communication purposes, while the last two are considered more useful for forecasting exercises.

Some factors that central banks needed to take account of when producing inflation forecasts were identified. In preparing such forecasts, the authors noted that it was important for central banks to consider the interest rate path either by making no explicit assumption (unconditional forecasts) or identifying explicit interest rate path (conditional forecasts). Basic types of explicit interest rate paths identified were (i) a constant interest rate path, which determines future interest rate path in the absence of any policy changes by the central bank, (ii) determination of inflation forecasts based on market forecasts of interest rates, (iii) central banks, through its monetary policy committees can decide on the future path of the policy interest rate on a discretionary basis (iv) determine interest rate path based on the policy reaction function of the Central Bank to shocks in the economy. It was noted that the fourth option was the "best, most consistent and technically sound for developing a professional inflation forecasts". It was however stated that central banks may not need to disclose the policy interest rate path to the public, (as is the case in practice of most central banks) in order to avoid a possible loss of credibility when there were deviations from projected interest rate.

Other factors considered include, the forecast design and organization, which involved identifying and assigning tasks to the forecasting team according to their competencies, determining if the forecasts would be

point or range estimates. The third factor was data management. This entailed gathering of data/information as relevant for the forecasting process, minimizing errors and gaps in the data, storing the database, regular update of the database as revisions are received and documentation of the forecasting exercise. The fourth factor identified was that inflation forecasts must be consistent with other policy decisions of the Central Bank. The forecast estimates must be provided in a short term (quarterly) and medium term frequency (yearly/policy horizon). The short term forecasts reviews the current state of the economy and provides quarter-ahead forecasts relying on expert judgment, time series analysis, survey evidences on macroeconomic conditions and expectations on future economic activity. On the other hand, the medium term forecasts involved expert judgment about the future path of economy based on assumptions of endogenous and exogenous variables, the central bank's view of the transmission mechanism and the development of structural models that would examine the impact of policies such as interest rates on the medium term inflation. It was stated that the forecasts would, of necessity, depend on an identified transmission mechanism, which could be adaptive or forward looking in nature. In deciding which of the forecast estimates to use, the authors stated that the medium term forecast that relied on core macroeconometric models were useful in the decision making process and becomes the basis on which information is exchanged. This was not meant to connote that short term forecasts were irrelevant, but rather they complement the results from the medium term forecasts.

As measures to boost public confidence in the inflation forecasts, it was recommended that central banks should involve the private sector and reputable international experts in the production of alternative forecasts for comparison purposes. Such forecasts could be centralized on an electronic bill board which would also afford central banks the opportunity of assessing new developments in forecasting techniques. According to the authors, independent reviewers could also be called upon at varying times to review the monetary policy framework and forecasting methodologies adopted by the bank as is the practice with Bank of England, Reserve Bank of New Zealand, and Norges Bank. Another measure could be through organizing forums at intervals which would provide the

opportunity to educate and increase the awareness of the private sector of the uncertainty associated with the production of inflation forecasts as well as generate discussions on modern inflation forecasting techniques. The authors, however, noted that the risks of the private sector involvement could mean using privileged information for their own profit purposes, which may reduce the credibility of the central bank. Thus, the central bank's involvement of the private sector would require careful choice and timing of various strategies.

The authors also identified the need for central banks to develop and institutionalize a framework for the decision making process as well as communicating policy changes or otherwise to the public in a transparent manner. Such a framework could be in the form of holding regular meetings (annual or quarterly) where the forecasting team presents forecasts to the monetary policy committee or technical committee, as the case may be. According to the authors, such presentations provide the forum for discussions on various scenarios/assumptions, risks and uncertainties in the forecast, future inflation path, policy variables consistent with the central banks' objective and eventual communication of forecasts through any means as agreed upon by the central bank. Furthermore, the authors noted the need for appropriate timing, designing a communication strategy (In most central banks, this is done through the publication of an inflation report) and deciding on the content of any published inflation report. These critical issues when properly implemented would serve to improve the credibility of the central banks, the forecast quality and provide a better understanding of the actions of the monetary authorities. Overall, the authors reiterated the need to have a flexible forecasting framework that takes into account the evolution of the structure of an economy, new theories and data management techniques.

III. Comments and Lessons for Nigeria

The paper is quite apt and timely, especially for economies transiting to inflation targeting. Indeed, it contains summarized, yet relevant information on the practice of inflation targeting in several economies, which could serve as a reference point for other central banks to further improve or

modify existing structures in place. An important characteristic of this article is the authors' use of unambiguous words in ensuring that readers were not left in the dark as to the issue being discussed. The lessons for Nigeria are discussed in the following paragraphs.

The institution responsible for designing and implementing monetary policy in Nigeria is the Central Bank of Nigeria. A paper of this nature brings to the drawing table, the initial conditions and necessary framework required to operationalize an inflation targeting regime in the event of its adoption. Though, the Nigerian economy has witnessed some developments such as improved fiscal prudence/adherence to the fiscal rule, increased autonomy of the central bank and improved depth of the financial markets that makes a case for adopting inflation targeting, the issues discussed hereunder need to be carefully addressed by the monetary authorities in the event of a transition to inflation targeting.

Inflation forecasting is the pivot in the monetary policy decision making process of an IT central bank for two reasons. First, forecasts serve as indicators of achievable long-run target and deviations from this forecast act as a signal to economic agents. Therefore, the credibility or otherwise of the central bank is hinged on the reliability of its forecasts for future inflation. Adopting inflation targeting as a monetary policy framework has led to the growing importance of the need to understand the dynamics of inflation and the transmission mechanism of monetary policy in an economy in order to forecast its future path.

The need for timely data generation in an IT regime is crucial in the entire framework. Thus, real time data generation, storage as well as dissemination should be intensified. This could be enhanced through an improved design of surveys, questionnaires as well as the provision of relevant tools for the compilation and computing of data. Building and maintenance of the database would include regular updates and revisions of data series, in order to minimize errors and data gaps, stating the sources/time when the data is received and checking the accuracy of data. The impact of all such revisions of the data series as well as their potential impact on the modeling and forecasting exercise must be clearly understood. In some

central banks, such as the Reserve Bank of New Zealand, this led to huge devotion of resources on real time database, which contain data releases for a variety of series. Such a database should be accessible to all members of the modeling and forecasting team as well as the Monetary Policy Committee. It has been proffered in literature that the forecasting team should not be saddled with the added task of data collection and entering data into the database, but should be left to direct its efforts towards producing forecasts, adapting new estimation techniques and improving on its professional ability to make forecasts.

Secondly, in most central banks that have adopted inflation targeting, developing models and generating the forecasts is an inter (intra) departmental effort with clearly defined roles (Table 1). It is imperative for all staff of the Bank, therefore, to understand that irrespective of the fact that there may be an office/department responsible for forecasting, the process of forecasting is all involving. This is very important as the forecasting team may not have access or easily lay hands on policy related and market information that may affect the forecast process. The forecasting team could provide an idea of basic data needed for the forecast process to the relevant offices/department/institutions to assist them in knowing what data to furnish the team with. Following from this, every staff of the Bank should endeavor to pass across revisions of data, without necessarily waiting for a request from the forecasting team as they could affect the forecast estimates. Moreover, time is a crucial element in the entire process that should not be taken for granted, evermore so in an inflation target regime, irrespective of whether it is full-fledged, lite or eclectic in nature.

Table 1: Selected Inflation Targeting Countries: Staff Involved in Forecasting Analysis

IT Economies	People Involved in Forecasting/Their Qualifications	Recent Increase in the Number of Staff Working on Inflation Forecasting	Number of Departments/Divisons Involved in Forecasting/degree of policy makers involvement
Australia	Statement of Monetary Policy preparation involves 40 people.	Yes	Four
Chile	10 people; 1/3 Ph.D.s, 2/3 local Master's degrees	Yes	Two (Conjunctural analysis and Modeling); another department provides international scenario, Monetary Policy Committee
Colombia	10 people, most with Master's degree	Yes	One (Programming and Inflation Forecasting Department); there is also a representative from the Macroeconomic Modeling Department
Czech Republic	7*(Ph.D.s, with an international experience)	No	One (Monetary and Statistics Department, 4 divisions)
Peru	26 people; 14 with Master's degrees, 4 with Ph.D.s.	Yes	One (Economic Studies Department, 8 divisions)
Turkey	18 people; 5 Ph.D.s, 10 Master's degrees, 1 M.B.A., 2 B.A.s	Yes	One (General Directorate of Research and Monetary Policy, 2 divisions)
Ghana	------	-------	2 (Monetary Policy Analysis and Financial Stability Department) including the Monetary Policy Committee.

Source: Canales-Kriljenko et al, 2006, Bank

For inflation targeting to be successful, the central bank has to decide *ab initio* and commit to a de facto mandate of inflation objective. To this extent, all other objectives become subordinated to the inflation objective. Furthermore, given the susceptibility of the Nigerian economy to shocks, implementing an inflation targeting framework, which requires a high level of communication and transparency to the public, may not be such an easy task. To this extent, it is suggested that before inflation targeting is adopted as a monetary policy framework, the public should be sensitized through using existing communication infrastructures, such as radio, television, audiovisuals to the more traditional ones like folklores, traditional dramas in local languages on its basic elements and what any deviation of inflation from its target would mean.

Table 2: Transparency and Communication Issues

	Selected Inflation Targeting Economies				
	UK	Canada	Australia	Ghana	New Zealand
Quantitative Inflation Objective?	Yes	Yes	Yes	Yes	Yes
Reports to Legislature?	Yes	Yes	Yes	No	Yes
Reports on Monetary Policy?		Qtrly	Qtrly	Bi-monthly	Qtrly
Release forecasts?	Qtrly	Qtrly	Qtrly	Bi-monthly	Qtrly
Quantitative Risk Assessment?	Yes	No	No	Yes	No
Press Conferences?	No	No	No	Yes	Yes
Press Releases?	Yes	Yes	Yes	Yes	Yes
Decisions announced Immediately?	Yes	Yes	Yes	Yes	Yes
Minutes of MPC published?	Yes	-	No	No	-

Source: BIS Annual Report (2004), Bank of Ghana, Reserve Bank of New Zealand

Overall, it is imperative to underscore that forecasting inflation is a continuous process that requires careful thinking, expert judgment and analytical skills, not a "one stop assignment" or one that should be done in a hurry. Indeed, forecasting inflation for IT countries requires high frequency and real time data, development and continual upgrade of forecasting models that captures the macroeconomic developments/ transmission mechanism of the economy, bank-wide staff involvement,

existence of a forecasting team that is less inundated with ad-hoc jobs and continuously exposed to recent forecasting methodologies a well as sector experts that bring in to the modeling/forecasting exercise relevant insights. This requires a strong and unflinching commitment from the policy decision making committee in terms of its degree of involvement in the forecasting process, devoting huge resources to technical and institutional capacity building. This entails providing the forecasting team with the adequate tools (technical assistance, hardware and econometric software), regular training of the forecasting team on modern developments in forecasting techniques, econometrics, software programmes, recent developments in macroeconomic theories, computer programming, and data management. Such training is indeed helpful to the extent that the forecasting model would need to be reviewed regularly to take account of modern empirical and econometric techniques. Forecasting is an iterative exercise, which gets better with the accumulation of experience.

Although, Inflation targeting is not a “one size fits all” framework and it may be difficult for any forecasting procedure to capture all the relationships or influences within an IT framework, forecasting remains an essential tool in monetary policymaking. Central bankers and analysts do not have the luxury of ignoring estimates derived from it, as monetary policy making requires more than just the qualitative information that theory provides. There must be some quantitative information, even if the information may at times not be perfect. In the metaphoric words of Alan S. Blinder, former Vice-Chairman of the US Federal Reserve, “You can get your information about the economy from admittedly fallible statistical relationships, or you can ask your uncle”. The choice is yours.