MODELING REQUIREMENTS OF PROPOSED INFLATION TARGETING IN NIGERIA

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I. INTRODUCTION

In most economies of the world whether developed, emerging or developing, there appears to be growing consensus on the need for the pursuit of price stability, a mandate which is usually vested in the Central Bank. However, academic as well as practicing economist involved in day-today policy formulation still differ in their opinions on what is the best and most effective mechanism for achieving price stability. To a large extent this debate remains an unresolved issue warranting continuing research that is still quite limited both at the theoretical as well as at an empirical level. The paucity of empirical studies on the subject is due primarily to the fact that inflation targeting as a means of pursuing price stability is a recent phenomenon that has been pursued by a limited but growing number of countries. The first country to adopt explicit inflation targeting as a monetary policy framework for attaining price stability was New Zealand in 1990. She was to be followed by a number of economies which include Australia, Brazil, Canada, Chile, Mexico, Sweden and the United Kingdom and more recently the Republic of South Africa. Towards the end of 2007, the Central Bank of Nigeria announced its agenda for strengthening the Naira. A cardinal component of the new policy thrust was to be the explicit adoption of formal inflation targeting as the monetary policy framework for ensuring price stability in the Nigerian economy effective from the middle of 2008. Considerable emphasis had hitherto been placed on indirect inflation targeting through the management of growth in money supply as part of the country's International Monetary Fund [IMF] sponsored Policy Support Instrument [PSI].

How effective the Bank's monetary policy has been in recent years may be subject for formal empirical research.

However casual observation of the behavior of the rate of inflation over the last couple of years would show that the rate inflation has climbed down from the two digit levels that averaged around 20-25 percent prior to 2005, to a one-digit level that has consistently on a year-on-year basis remained below 10 percent.

Going by the recently announced new direction of policy of the Bank it is likely t to switch to formal inflation targeting as soon as the necessary infrastructure for implementing this can be put in place. One major requirement in this regard which is the primary focus of the paper is the modeling or more specifically the forecasting requirements for effective inflation targeting.

The rationale for adopting inflation targeting as monetary policy framework differs from country to country. However it is generally agreed that most monetary authorities find it desirable for the following reasons among others (Van der Merwe 2004):

(i) First compared with other monetary policy mechanisms such as money supply targeting, it makes for greater transparency of monetary policy because policy changes are made to depend directly on expected developments in inflation.

(ii) Secondly, inflation targeting makes for better co-ordination between monetary policy and other economic policy objectives especially where the target is made to be consistent with other economic policy objectives.

(iii) Thirdly, inflation targeting serves to discipline monetary policy and increase the central bank's accountability. It is much easier for the general public to appreciate what the specific goal or target for containing inflation is and be able to evaluate whether this is being realized or not, with the monetary policy authorities being obliged to explain deviations from expected performance.

(iv) Lastly, inflation targeting it is argued affects inflationary expectations thereby ipso facto helping to reduce inflation.

II. DEFINININITION OF INFLATION TARGETING

According to Mishkin (July 2001:1), "inflation targeting involves five main elements which are:

- the public announcement of medium-term numerical targets for inflation;
- an institutional commitment to price stability as the primary goal of monetary policy, to which other goals are subordinated;
- an information inclusive strategy in which many variables, and not just monetary aggregates or the exchange rate, are used for deciding the setting of policy instruments;
- increased transparency of the monetary policy strategy through communication with the public and markets about the plans, objectives, and decisions of the monetary authorities; and
- increased accountability of the central bank for attaining its inflation objectives".

In a recent paper by Carare and Stone (2003) a broader definition of inflation targeting is provided. Three inflation-targeting regimes are distinguished: Full-fledged inflation targeting is defined in accordance with the definition of inflation targeting by Mishkin. In addition, "eclectic inflation targeting" and "inflation targeting lite" are also regarded as inflation-targeting regimes.

Eclectic inflation-targeting countries are described as countries that “have so much credibility that they can maintain low and stable inflation without full transparency and accountability with respect to an inflation target. Their record of low and stable inflation and high degree of financial stability affords them the flexibility to pursue the objective of output stabilization, as well as price stability” (Carare and Stone, 2003:3).

Inflation targeting lite countries “announce a broad inflation objective but owing to relatively low credibility is not able to maintain inflation as the foremost policy objective” (Carare and Stone, 2003:3). They differ considerably in stating their objectives in the operation of monetary policy, and are normally prone to economic shocks, financial instability and a weak institutional framework.

According to Van der Marwe(2004), often there can be differences in the way and manner inflation targeting is implemented. However regardless of the method or approach adopted by each monetary authority, it requires that the monetary authorities make decisions regarding the following:

(a) Who sets the target: In countries such as Spain, Sweden, Mexico and Poland the inflation target is set and announced by the central bank. In countries such as Brazil, Israel, Korea, Peru and Thailand it is set by government in consultation with the central bank. In some others like Australia, Canada, Columbia and New Zealand the target is set jointly by government and the central bank. As far as could be determined, it is only in the United Kingdom that the target is set only by government. The way the inflation target is determined depends on the autonomy of the central bank. the case of Nigeria given the new Central Bank Act of 2007 which grants it autonomy, it would be expected that this would be the responsibility of the Central Bank.

(b) Definition of the Target: According to Van der Merwe 2004, in all inflation-targeting countries the target has been specified in terms of the consumer price index, or some variant thereof. There are, however, differences in the way that inflation is measured. Preferably the index should include a range of products fully reflecting the domestic cost of living and should be generally accepted by the public. The calculation of this index must be accurate and timely. Many countries have opted for a “core” consumer price index, which excludes prices affected by exogenous shocks over which the central bank has no direct control, the first-round effects of indirect tax changes and the first-round effects of interest rate changes. In the Nigerian case the appropriate measure or index to adopt would need to be agreed upon between the CBN and National Bureau of Statistics, given the often conflicting magnitude of inflation that is often announced by both authorities.

(c) How is the target to be set: Again according Van der Merwe op cit, in setting the target a decision has to be made about the level of the target. If the level of the target is set too high it could give the impression that the authorities are not serious about combating inflation. If the level is set too low it could initially lead to very stringent policy measures which could distort domestic production, consumption, saving and investment. This decision becomes even more difficult when the prevailing inflation rate at the time of the introduction of the target is relatively high. Most inflation-targeting countries specify their targets in terms of a range or a single point. A wide range reduces the credibility of the target because it acts less as an anchor of inflation expectations. The disadvantage of a narrow range is that it provides less flexibility to monetary policy than a wider range and that frequent breaches of the range could undermine credibility.

The time horizon over which the target is set could also affect its credibility. Monetary policy measures affect inflation with a long lag. Although there is no certainty about the exact lengths of these lags in. For example in South Africa, It is estimated that changes in interest rates probably take from 18 to 24 months to fully affect inflation. A too short time horizon for an inflation target could lead to very stringent policy measures and unnecessary instability in domestic demand and output. If the target is set over a too long period, the public's interpretation may be that the authorities are not serious about combating inflation and the target may not have any impact on inflationary expectations.

The new specification of the target does not mean that monetary policy must necessarily react if the inflation rate moves outside the target. If it is expected that the inflation rate will again move into the target range within a short period of time, no reaction of monetary policy is required. However, if the inflation rate is expected to remain out of the target for an extended time period, then monetary policy will have to be adjusted. It is not the current rate of inflation that is important in making policy decisions, but the expected future trend in inflation.

III. MODELING REQUIREMENTS IN IMPLEMENTATION PROCESS

The primary responsibility for implementing the new monetary policy would lie with the Monetary Policy of the CBN, whose composition and functions are defined in the new CBN Act 2007. To carry out this function, the committee members would need to be furnished with information that would enable it reach agreement on the likely future path of inflation. It is accordingly essential that a detailed assessment is made of all the factors that could affect inflation based on past experience. A large number of indicators need to be monitored for this purpose, including the following :

- growth in money supply and bank credit extension,

- changes in nominal and real salaries and wages,
- labour productivity,
- nominal unit labour costs,
- the gap between potential and actual domestic output,
- developments in final demand,
- the balance of payments,
- exchange rate changes,
- short and long-term interest rates,
- the yield curve,
- government finances and
- producer and imported prices.

In addition to the foregoing there would also be need to monitor developments in exogenous factors that may be capable of impinging on inflationary pressures. Such factors would include global growth and inflation, international interest rates, international commodity prices, as well as oil prices. Domestic and international agricultural conditions, and administered prices would also need to be taken into consideration.

To further assist the MPC in forecasting inflation staff of the Central Bank in conjunction with research centres such as CEAR would need to develop a portfolio of models. Judging from a country like South Africa which has embarked on inflation targeting since 2002, the portfolio of models as formal forecasting tools would include a core macroeconometric model, a small-scale model specifically targeted at the monetary sector , vector autoregressive models, Phillips-curve models and a disaggregated inflation forecasting model. The idea behind maintaining a portfolio of models is to ensure through comparison of forecasting results or sometimes averaging across them, the MPC would be given the best forecast possible. In making a decision on the monetary policy stance, the MPC would need to supplement the forecasts with other considerations regarding developments in the economy. Consequently the qualification needs to be added that every forecast is based on assumptions and hence the results of models can only be utilized only as aid in policy making. For this reason the MPC would need to rely on a portfolio of models to minimize these risks and possible limitations of the individual models. At the end of the day, the final decision of the MPC but must be judgmental after a careful analysis of all economic data and risk factors as opposed to mechanically basing its decisions on the forecasts alone.

This reliance on forecasting in making decisions is the back-bone of inflation targeting exercise and without which it can not be effectively implemented hence it is sometimes regarded as the major weakness of the inflation targeting framework given the data, resource and expertise requirements of the underlying forecasting exercise. This not withstanding it regarded as a sine-quanon if the objective of attainment of price stability is to be achieved. Attaining such stability would always require that the monetary authorities take into consideration how it's current policy stance would affect future price developments. It is argued that the difference between inflation targeting and other monetary policy frameworks is that inflation targeting makes forecasting explicit and transparent, Van de Merwe (2004).

IV. CONCLUSION

In summary gains by way of monetary policy transparency, accountability and improvements in communication with the general public are some of the benefits the monetary authorities stand to derive from switching from erstwhile indirect inflation targeting to explicit formal inflation targeting. In the policy regimes adopted by the CBN hitherto, there were no explicit benchmarks for judging the performance of the Bank objectively. In the inflation-targeting framework a specific target is set for a particular price index to be achieved within a specific time frame. While this would make for a more effective monetary policy framework, the data and analytical requirements by way of formal forecasting models remains a challenge that must be adequately addressed before the new policy can be embarked upon on a sustainable basis. It is not only that such models need to be developed on a one-off basis necessary collaborative mechanisms between the CBN and research centres such as CEAR would need to be put in place to ensure their operationalisation on a sustainable basis.

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