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INFLATION TARGETING AS A POSSIBLE MONETARY FRAMEWORK FOR NIGERIA

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ABSTRACT

One of the issues facing Nigeria today is the choice among two nominal anchors: exchange rate pegging or inflation targeting. The incessant increase in interest rates, exchange rates, money supply and domestic credit have all accumulated, leading to persistent inflation in Nigeria. At this instant, it is pertinent to look for another nominal anchor to keep inflation in check because the present exchange rate pegging seems useless. This groundbreaking study, in an effort to do this, examines inflation targeting as a possible monetary framework for Nigeria, using time series data and with the aid of Granger Causality test and impulse response functions. The empirical results show evidence that inflation is highly sensitive to exchange rate and interest rate while economic growth is highly sensitive to exchange rate and inflation in Nigeria. Further, the causation from real exchange rate to economic growth is stronger than the causation from inflation to economic growth, meaning exchange rate determines economic growth in Nigeria more than inflation does. Therefore, inflation targeting will be less preferable to exchange rate targeting in Nigeria as a policy alternative. This unexpected finding has important implications for monetary policy conduct in Nigeria.

JEL: E31, E52, E44, E58

KEYWORDS: Inflation Targeting, Monetary Policy, Inflation

INTRODUCTION

Inflation targeting, as an economic policy, is an attempt to direct inflation towards an expected, or "target" inflation rate using monetary tools such as interest rate changes (Coy, 2005). Under the policy, the actions of the central bank become more transparent. Investors, knowing what the central bank estimates as the target inflation rate, can easily factor in possible interest rate changes in their investment sets, leading to better economic stability. One of the issues facing Nigeria today is the choice among two nominal anchors: exchange rate pegging or inflation targeting. Volatility in price and hyperinflation are huge economic challenges, able to create financial instability and tumble economies. Many industrialized economies, after experiencing persistent inflation rates for decades, have reduced inflation to extremely low levels recently with the aid of inflation targeting. Nigeria can do the same. In fact, inflation targeting frameworks have regularly and successfully been adopted in economies suffering from chronically high inflation. Can inflation targeting regime work effectively in Nigeria which employs the exchange rate stability objectives? Bakradze and Billmeier's (2007) study observed that the rising number of countries embracing inflation targeting and its success are inducements for countries that employ monetary or exchange rate targeting to consider a change to inflation targeting.

Thus, countries like Nigeria need to consider earnestly such a change now or in the near future, bringing us to the question if Nigeria is ready for inflation targeting now, later or maybe never. According to Mishkin (2000), for inflation targeting to successfully raise output growth, lower unemployment, increase external competitiveness -- through monetary policy, there must exist a strong institutional commitment to make price stability the primary goal of the central bank. This is particularly important in an emerging market

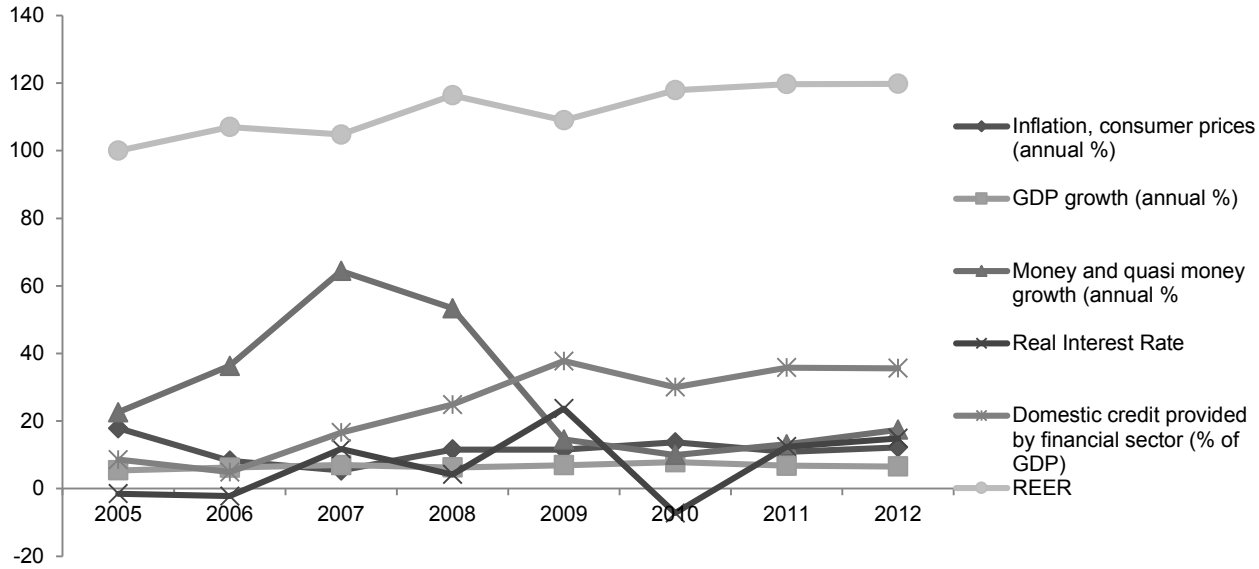
country such as Nigeria which has often had a past history of monetary mismanagement. Table 1 and Figure 1 show the evolution of the monetary policy outcomes in Nigeria from 2005 till 2012. It shows the quantum of monetary policy in Nigeria. Price stability is not accorded the highest priority in Nigeria, to the detriment of the aforementioned "institutional commitment to price stability which requires that the central bank be given a mandate to have price stability as its primary goal, making it clear that when there is a conflict with other goals, such as exchange rate stability or promotion of high employment, price stability should be accorded the highest priority" (Mishkin, 2000, pp. 3). A look at Table 1 and Figure 1 shows that interest and inflation rates in Nigeria have been on a double-digit value averagely over the period of 2005-2012. In recent years, inflation in Nigeria has been steadily above 10%, except 2007. As well, interest rate has been high, especially excessively highest in 2011 and 2012. The real exchange rate against the US dollar rises over the years. In the same vein, the consumer price index (CPI) is not left out in the steady increase. Within the same period, money and quasi money growth has reduced while Domestic credit provided by financial sector (% of GDP) has increased remarkably. The increase in interest rates, exchange rates, persistent growth in money supply and domestic credit have all accumulated, leading to persistent inflation in Nigeria.

Table 1: Monetary Policy Outcomes (2005-2012)

	2005	2006	2007	2008	2009	2010	2011	2012
Inflation, consumer prices (annual %)	17.863	8.240	5.382	11.578	11.538	13.720	10.841	12.217
GDP growth (annual %)	5.400	6.211	6.972	6.270	6.934	7.840	6.791	6.531
Money and quasi money growth (annual %)	22.604	36.351	64.417	53.360	14.543	9.969	13.142	17.416
Real Interest Rate	-1.513	-2.214	11.764	4.190	23.707	-7.231	12.416	14.870
Domestic credit provided by financial sector (% of GDP)	8.600	4.909	16.575	24.891	37.772	30.009	35.800	35.617
Real Exchange rate	100.0	107.0	104.8	116.4	109.0	117.9	119.7	119.8

This table shows the evolution of the monetary policy outcomes in Nigeria from 2005 till 2012. It shows the quantum of monetary policy in Nigeria.

Figure 1: Monetary Policy Outcomes (2005-2012)



This figure shows the evolution of the monetary policy outcomes in Nigeria from 2005 till 2012. It shows the size and trend of the variables, thus depicting the thrust of monetary policy in the recent years.

Thus, at this instant, it is pertinent to look for another nominal anchor to keep inflation in check because the present exchange rate pegging seems useless. This groundbreaking study, in an effort to do this, examines inflation targeting as a possible monetary framework for Nigeria. The remainder of this paper is structured as follows: section 2 reviews the literature. Section 3 presents the data and methodology. Sections 4 give the results. Section 5 concludes.

LITERATURE REVIEW

A popular choice since the early 1990s, inflation targeting has gained adherence from more than twenty countries in developed and emerging-market economies. Countries have adopted inflation targeting under varying conditions, ranging from the answer to a currency crisis (e.g. United Kingdom) to a planned switch from a completely different policy regime (e.g. Canada and New Zealand). Likewise inflation targeting has been practiced with varying verve and under diverse institutional arrangements (Bamidele, 2007). Forged in 1990 in New Zealand, inflation targeting is now in use by the central banks of Canada (Bank of Canada), United Kingdom (Bank of England), Australia (Reserve Bank of Australia), Iceland (Central Bank of Iceland) South Korea (Bank of Korea), Egypt, and Brazil (Brazilian Central Bank) South Korea (Bank of Korea), and Brazil (Brazilian Central Bank) and South Africa (South African Reserve Bank), among others, and empirical evidence shows that it does what its proponents claim (Coy, 2005). Only two countries, in Sub-Saharan Africa, have officially embraced inflation targeting: Ghana and South Africa (Hajj et al., 2013). Till date, the outcome of prior studies on the performance of inflation targeting has been diverse.

The first set of empirical studies finds no significant improvement in the economies between pre- and post-inflation targeting or between the economies of inflation-targeting countries and non- inflation targeting countries (for examples Cecchetti & Ehrmann, 2000; Honda, 2000; Ball & Sheridan, 2005; Berument & Yuksel, 2006). The second set finds meaningful improvement as inflation targeting causes improvement in economic structure and inflationary path (for examples Garcia, 2000; Pétursson, 2004 and so on). Yet, a set of studies, constructing indicators to measure the impact of inflation targeting, evaluates the performance of inflation targeting through disinflation cost and observations of country-specific data (e.g. Pétursson, 2004). Some authors assess the impact of inflation targeting from the perspective of the cost of disinflation (i.e. the ratio of loss in output divided by the fall in inflation). The studies, evaluating the impact of inflation targeting employing the cost of disinflation include Senda & Smith, 2008 Tunali, 2008; Goncalves & Carvalho, 2006 and so on. All this previous works have shown that the performance of inflation targeting differs across dimensions, countries and over time (Ramos-Francia & Capistran, 2007; Mishkin & Schmidt-Hebbel, 2007). As well, evidence suggests that the credibility of the central bank and the economic structure are factors in the various outcomes of inflation targeting. For instance, Fraga, Goldfajn & Minella's (2003) study demonstrates that inflation targeting is more successful in developed economies compared to emerging market economies in terms of reduced volatility in output, inflation, exchange rate and interest rate. Additional factors shaping the performance of inflation targeting include type of demand or supply shock (Lai & Chang, 2001) and exchange rate (Bleaney, 2000 and Brenner & Sokoler, 2006).

Mthuli Ncube and Eliphas Ndou (2012), using a Bayesian VAR sign restriction approach, derives the inflation equation to comb for a plausible transmission channel between the inflation rate, real interest rate, exchange rates and real output growth rate. The empirical findings indicate that the real interest rate responds negatively to inflation rate shocks; in the long run the Fisher effect holds. They demonstrate that strict inflation targeting is incompatible with significant output growth. Conversely, a flexible inflation-targeting framework which places importance on real effective exchange rates leads to a significant real output growth. Hajj, Dufrénot, Sugimot and Wolf's (2013) study examines the monetary policy actions with which Sub-Saharan African central banks have sought to reduce or eliminate the negative consequences of the shocks confronting their economies. Comparing two types of monetary policy regimes: a currency board regime in the CFA zone countries and an inflation targeting policy regime in Ghana and

South Africa, they found that both policies are unsuitable for economies exiting from the impacts of negative demand shocks. However, both policies are vital when negative shocks to primary balance arise. Alvaro Angeriz and Philip Arestis (2006), using intervention analysis on structural time series models of ten countries, investigates the empirical aspects of inflation targeting. The outcome shows that if the initial impacts of inflation targeting are taken into consideration, central banks, that have followed this strategy, have been unsuccessful. Sek (2006) evaluates inflation targeting in three emerging East-Asian economies: Korea, Philippines and Thailand by comparing the changes in the economy between the pre- and post-inflation targeting periods. Applying a bivariate GARCH (1,1) model to study the relationship between inflation and output gap, he detects lower inflation rate in the post-IT period and no significant correlation between inflation and output gap was found. He concludes that inflation targeting has bettered the economies of those countries. Besides, inflation targeting and the exchange rate flexibility have a close relationship. Exchange rate, a vital instrument in an open economy like Nigeria, plays as a transmission channel for monetary policy and simultaneously as an influencer of the real economy. Undue volatility of exchange rate can be injurious to trade and growth. Thus, responding to inflation and exchange rate variability conjointly in the policy function can lead to the risk of tradeoff or compromise between inflation and exchange rate variability.

If, for example the central bank sees impending increase in inflation; to tighten the price of tradable goods, interest rates are raised. As soon as the inflation is under control, interest rates are lowered and the exchange rate depreciates. Thus the fall in inflation variability has brought about the rise in the volatility of exchange rate. Exchange rate stability is inconsistent with inflation targeting regime; inflation targeting regime certainly necessitates exchange rate flexibility (Debelle, 2000). Foreign exchange intervention policy and inflation targeting, according to Brenner & Sokoler (2006), cannot coexist because there is conflict between the two policies. Taguchi and Kato's (2011) assessment of inflation targeting in some East-Asian economies shows that flexibility in exchange rate is a prerequisite to the success of inflation targeting regime. Then again, there are contradictory views that intermediate regimes would be good for inflation targeting. In fact, the case of Chile and Israel show that exchange rate objectives is containable within an inflation targeting regime (Debelle, 2000). Finally, there is an argument that inflation targeting cannot work well in emerging markets, like Nigeria, as emerging markets are deficient of the preconditions for a proper operation of inflation targeting. According to Kadioğlu et. al (2000), the prerequisites for the success of inflation targeting consist of sound economic structure; exchange rate flexibility; central bank independence; the institutional set-up; political commitment; a great deal of transparency and accountability of the Central Bank; absence of fiscal dominance; a single, clear inflation target; a sound inflation forecasting model; virile financial markets. The absence or inadequacy of these prerequisites may pose huge challenges for emerging markets like Nigeria trying to embrace inflation targeting.

DATA AND METHODOLOGY

Model

After a meticulous review of foregoing studies and refining upon the theoretical postulates explicated above, the two models for this study are expressed as follows:

$$INFLATION_t = \alpha_0 + \alpha_1 GROWTH_t + \alpha_2 MONEY_t + \alpha_t INTEREST_t + \alpha_4 CREDIT_t + \alpha_5 EXCHANGE_t + \alpha_6 EXPENDITURE_t + \alpha_7 OIL_t + \xi_t \quad (1)$$

$$GROWTH_t = \beta_0 + \beta_1 INFLATION_t + \beta_2 MONEY_t + \beta_t INTEREST_t + \beta_4 CREDIT_t + \beta_5 EXCHANGE_t + \beta_6 EXPENDITURE_t + \beta_7 OIL_t + \xi_t \quad (2)$$

Where:

Inflation	=	Inflation, Consumer Prices (Annual %)
Growth	=	Gdp Growth (Annual %)
Money	=	Money And Quasi Money Growth (Annual %)
Interest	=	Real Interest Rate
Credit	=	Domestic Credit Provided By Financial Sector (% Of Gdp)
Exchange	=	Real Exchange Rate
Expenditure	=	Recurrent Government Expenditure
Oil	=	Oil Revenue
Trade	=	Trade Openness
Capital	=	Gross Capital Formation

Vector Autoregressive Model

The vector autoregressive model (VAR) is used to analyse the variables' system. Each endogenous variable of the system is a function of the lagged values of the endogenous variables.
The VAR model is as follows:

$$y_t = A_1 y_{t-1} + A_2 y_{t-2} + ... + A_p y_{t-p} + c + \varepsilon_t \quad (3)$$

Where:

y_t is a vector of n endogenous variables,
x_t is a vector of m exogenous variables,
A_1, A_2..., A_p are matrices of the parameters being estimated
c is the constant term
ε_t is a vector of terms produced by a white noise process with these proprieties:

$$E[\varepsilon_t] = 0 \quad \forall t$$
$$E[\varepsilon_t \varepsilon'_t] = \begin{cases} \Omega & s = t \\ 0 & s \neq t \end{cases} \quad (4)$$

This shows that the ε's are serially uncorrelated.

Granger Causality

The Granger (1969) approach is used to investigate how much of the current y is explained by the lagged values of y and if, after adding past values of x we can increase the explanation of the model. Succinctly, we say "x Granger causes y" if the coefficients of the lagged variables of x are statistically significant.
The Granger causality entails the estimation of two regressions like the following:

$$\begin{aligned} y_t &= \alpha_0 + \alpha_1 y_{t-1} + ... + \alpha_l y_{t-l} + \beta_1 x_{t-1} + ... + \beta_l x_{t-l} + \varepsilon_t \\ x_t &= \alpha_0 + \alpha_1 x_{t-1} + ... + \alpha_l x_{t-l} + \beta_1 y_{t-1} + ... + \beta_l y_{t-l} + u_t \end{aligned} \quad (5)$$

for all the possible values of the series (x,y).

The Granger causality test implies the F Wald test for the joint hypotheses $\beta_1 = \beta_2 = ... = \beta_l = 0$ for each equation. The hypotheses are expressed as:

H_0: 'x does not Granger cause y', in one equation, and
H_1: 'y does not Granger cause x', in the other.
This test statistic can be expressed as:

$$F = \frac{(SQEr - SQEnr)/m}{SQEnr/(n-k)} \quad (6)$$

Where:

m is the number of lagged terms of Y
k is the number of parameters estimated without restrictions,
SQEr is the sum of squared errors in the restraint regression (when H_0 is true) and
SQEnr is the sum of squared errors with the unrestricted regression.
With m and n-k degrees of freedom, this statistic follows the F-distribution.

Impulse Response Function

Modeled in the framework of a vector autoregression, the impulse response functions are used to describe how the economy responds over time to shocks or exogenous impulses. Succinctly, it is used to describe the reaction of endogenous variables such as inflation, GDP growth, money growth, interest rate, and exchange rate at the time of the shock and over succeeding points in time.

Data Bank

The data covers annual data between the years between 1980-2012. The values employed in the empirical analysis were mined from the data banks of the World Bank and the Central Bank of Nigeria. They are published on their sites, www.cenbank.org/documents/data.asp and data.worldbank.org/Indicators. They are Inflation, consumer prices (annual %); GDP growth (annual %); money and quasi money growth (annual %); real interest rate; domestic credit provided by financial sector (% of GDP); real exchange rate; growth rate of recurrent government expenditure, growth rate of oil revenue, growth rate of trade openness and growth rate of capital formation.

Table 2: Augmented Dickey Fuller Unit Root Test (Trend and Intercept)

Series	ADF Test Statistic	5% Critical Values	10% Critical Values	Order	Remarks
Growth	-4.948	-3.556	-3.211	I(1)	Stationary
Money	-6.949	-3.556	-3.211	I(1)	Stationary
Interest Rate	-7.934	-3.556	-3.211	I(1)	Stationary
Credit	-5.314	-3.556	-3.211	I(1)	Stationary
Exchange Rate	-6.904	-3.556	-3.211	I(1)	Stationary
Expenditure	-5.119	-3.556	-3.211	I(1)	Stationary
Oil Revenue	-5.951	-3.556	-3.211	I(1)	Stationary
Trade	-5.897	-3.556	-3.211	I(1)	Stationary
Capital	-5.843	-3.556	-3.211	I(1)	Stationary
Inflation	-5.788	-3.556	-3.211	I(1)	Stationary

This table shows that all the time series are I(1). They have the same order of integration, as the Augmented Dickey Fuller Unit Root Test (Trend and Intercept) shows.

RESULT AND DISCUSSION

Unit-Root and Cointegration Tests

The first thing is to determine the order of integration of the individual time series using Augmented Dickey Fuller Unit Root Test (Trend and Intercept) and Phillips-Perron Unit Root Test (Trend and Intercept) as shown in Table 2 and Table 3.

Table 3: Phillips-Perron Unit Root Test (Trend and Intercept)

Series	P Test Statistic	5% Critical Values	10% Critical Values	Order	Remarks
Growth	-4.917	-3.556	-3.211	I(1)	Stationary
Money	-7.311	-3.556	-3.211	I(1)	Stationary
Interest Rate	-8.933	-3.556	-3.211	I(1)	Stationary
Credit	-5.316	-3.556	-3.211	I(1)	Stationary
Exchange Rate	-7.973	-3.556	-3.211	I(1)	Stationary
Expenditure	-6.386	-3.556	-3.211	I(1)	Stationary
Oil Revenue	-7.377	-3.556	-3.211	I(1)	Stationary
Trade	-7.540	-3.556	-3.211	I(1)	Stationary
Capital	-7.704	-3.556	-3.211	I(1)	Stationary
Inflation	-7.867	-3.556	-3.211	I(1)	Stationary

This table shows that all the time series are I(1). They have the same order of integration using Phillips-Perron Unit Root Test (Trend and Intercept).

Since most of the time series have the same order of integration, we tested and saw they are cointegrated, using Johansen's methodology as shown in Table 4 below. Both the maximum eigenvalue and trace tests reject the null hypothesis of no cointegration (r = 0), at both 5 per cent and 10 per cent levels of significance. Consequently the results accept the alternative hypothesis of r =1. This implies that they have cointegration relation and that there is only one cointegrating vector. Thus, the VAR model is set up in the levels of the data. 2 is the maximum lag length for the variables in the VAR, based on the AIC. The VAR is well-specified; we ensure that no serial correlation exists in the residuals for a reliable result. Straight interpretation of VAR model is very longwinded and can lead to poor conclusions. Instead, this study interprets the Granger causality test and impulse response functions (IRF).

Table 4: Johansen Multivariate Co-Integration Test

Unrestricted Cointegration Rank Test (Trace)				
Hypothesized No. of CE(s)	**Eigenvalue**	**Trace Statistic**	**0.05 Critical Value**	**Prob.****
None *	0.4792	53.208	47.856	0.0145
At most 1	0.2717	27.764	29.797	0.0843
At most 2	0.2473	15.396	15.494	0.0517
At most 3 *	0.1047	4.3157	3.8414	0.0378
Trace test indicates 1 cointegrating eqn(s) at the 0.05 level				
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized No. of CE(s)	**Eigenvalue**	**Max-Eigen Statistic**	**0.05 Critical Value**	**Prob.****
None	0.4792	25.443	27.584	0.0917
At most 1	0.2717	12.368	21.131	0.5118
At most 2	0.2473	11.080	14.264	0.1502
At most 3 *	0.1047	4.3157	3.8414	0.0378
Max-eigenvalue test indicates 1 cointegration at the 0.05 level				

This table shows that the variables are cointegrated, using Johansen's methodology. The maximum eigenvalue and trace tests reject the null hypothesis of no cointegration (r = 0), at both 5 per cent and 10 per cent levels of significance.

Granger Causality Tests

The Granger (1969) test is employed to test for causality as shown in Table 5, providing an evaluation of causation from one variable to the other. This table suggests that exchange rate determines economic growth in Nigeria more than inflation does. Thus, inflation targeting will be less preferable to exchange rate targeting in Nigeria as a policy alternative.

Table 5: Granger Causality Wald Tests

	Excluded	chi2	df	Prob > chi2
INFLATION	Growth	4.052	2	0.132
	Money	12.616	2	0.002***
	Interest Rate	0. 142	2	0.931
	Credit	15.764	2	0.000***
	Exchange Rate	17.019	2	0.000***
	Expenditure	7.014	2	0.030**
	Oil Revenue	0.338	2	0.844
	Trade	1.303	2	0.521
	Capital	1.345	2	0.510
	All	91.822	18	0.000***
GROWTH	Inflation	5.894	2	0.049**
	Money	3.563	2	0.168
	Interest Rate	2.154	2	0.341
	Credit	3.754	2	0.153
	Exchange Rate	6.710	2	0.035**
	Expenditure	1.110	2	0.574
	Oil Revenue	1.233	2	0.540
	Trade	3.549	2	0.617
	Capital	.9667	2	0.020**
	All	32.301	18	0.020**

*note: *** and ** denote rejection of the exclusion at the 1 and 5 per cent level. the table shows* and provides an evaluation of causation from one variable to the other using granger (1969) test.

From the results in Table 5, the following causalities have been detected: Causation from MONEY to INFLATION suggesting that the amount of money in the economy determines the quantum of inflation Causation from the CREDIT to INFLATION suggesting that the amount of credit in the economy determines the quantum of inflation. Causation from the REAL EXCHANGE RATE to INFLATION suggesting that the level of real exchange rate determines the quantum of inflation.

Causation from GOVERNMENT RECURRENT EXPENDITURE to INFLATION suggesting that the amount of government recurrent expenditure in the economy determines the quantum of inflation. Causation from INFLATION to ECONOMIC GROWTH suggesting that the amount of inflation in the economy determines the quantum of inflation. Causation from REAL EXCHANGE RATE to ECONOMIC GROWTH suggesting that the level of real exchange rate determines the quantum of inflation. Causation from GROSS CAPITAL FORMATION to ECONOMIC GROWTH suggesting that the amount of gross capital formation in the economy determines the quantum of inflation

The causation from REAL EXCHANGE RATE to ECONOMIC GROWTH is stronger than the causation from INFLATION to ECONOMIC GROWTH suggesting that exchange rate determines economic growth in Nigeria more than inflation. Thus, inflation targeting will be less preferable to exchange rate targeting in Nigeria as a policy alternative.

Impulse Response Functions

The impulse response functions (IRF) shows that Economic Growth responds positively to innovations (i) in its own impulses over the 10 years period and (ii) in real exchange rate over the 10 years period. It responds negatively to innovations (i) in inflation over the 10 years and (ii) in real interest rate over the 10 years. The figure shows that the intensity of economic growth reaction is greater for exchange rate, interest and inflation, than for money and the reaction stays steady and durable. As well, the impulse response

functions (IRF) shows that inflation responds positively to innovations (i) in its own impulses over the first 7 years period and (ii) in money over the first 6.5 years. It responds negatively to innovations (i) in the interest rate over the first 4 years, (ii) in economic growth over the first 3.5 years, and (iii) in the exchange rate over the 5 years. The figure shows that the intensity of inflation reaction is greater for exchange rate and interest, than for money and economic growth and the reaction stays steady and durable. Summarily, the impulse response function shows that inflation is highly sensitive to exchange rate and interest rate while economic growth is highly sensitive to exchange rate and inflation.

CONCLUDING COMMENTS

The paper has examined inflation targeting as a possible monetary framework for Nigeria. Particularly, the paper has focused on the relative causality and responses between economic growth, inflation, exchange rate, interest rate, money and credit. The empirical methodology uses Granger causality and impulse response functions. The data (1980-2012) were mined from the data banks of the World Bank and the Central Bank of Nigeria. The variables are Inflation, consumer prices (annual %); GDP growth (annual %); money and quasi money growth (annual %); real interest rate; domestic credit provided by financial sector (% of GDP); real exchange rate; growth rate of recurrent government expenditure, growth rate of oil revenue, growth rate of trade openness and growth rate of capital formation. As to the empirical results of the paper, we have evidence that inflation is highly sensitive to exchange rate and interest rate while economic growth is highly sensitive to exchange rate and inflation in Nigeria. Further, the causation from real exchange rate to economic growth is stronger than the causation from inflation to economic growth, meaning exchange rate determines economic growth in Nigeria more than inflation does. Therefore, inflation targeting will be less preferable to exchange rate targeting in Nigeria as a policy alternative. This finding is in line with Ncube & Ndou's (2012) study which show that strict inflation targeting is incompatible with significant output growth, but a flexible inflation-targeting framework which places importance on real effective exchange rates leads to a significant real output growth. In fact, Taguchi and Kato's (2011) assessment of inflation targeting in some East-Asian economies shows that flexibility in exchange rate is a prerequisite to the success of inflation targeting regime.

Moreover, in interpreting the findings of this study, special emphasis is placed on the argument that inflation targeting cannot work well in emerging markets, like Nigeria, as emerging markets are deficient of the preconditions for a proper operation of inflation targeting. According to Kadioğlu et. al (2000), the prerequisites for the success of inflation targeting consist of sound economic structure; exchange rate flexibility; central bank independence; the institutional set-up; political commitment; a great deal of transparency and accountability of the Central Bank; absence of fiscal dominance; a single, clear inflation target; a sound inflation forecasting model; virile financial markets. The absence or inadequacy of these prerequisites may pose huge challenges for emerging markets like Nigeria trying to embrace inflation targeting. A lot of questions remain unanswered. The monetary authorities in Nigeria in Q4:2014 reacted to the sharp fall in crude oil price by increasing MPR by 100 basis points from 12% to 13% and moved the midpoint of the official exchange rate from N155/US$ to N167/US$.

These changes has nothing to do with difference between the forecast inflation rate and the target inflation. At best the changes are quick fix response to speculative activities in the foreign exchange market. These leaves us with more questions regarding the most appropriate method to track inflation targeting as the next best alternative for Nigeria. How can inflation targeting be best tested or modelled in a country where exchange rate is inflexible and interest rate is literarily managed by the monetary authority? Assuming the target inflation variable is known and the monetary authorities have a well-developed inflation forecasting model, what level should interest rate be raised for it to influence key macroeconomic variables? What is the interest rate threshold level that tracks inflation and economic growth in Nigeria? How effective is inflation targeting in a country that has a strong presence of fiscal dominance and institutional constraints? Perhaps, future studies will provide fuller answers to these questions.

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