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A REASSESSMENT OF THE IMPACT OF MONETARY POLICY ON ECONOMIC GROWTH: STUDY OF NIGERIA

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ABSTRACT: *Nigeria has over the years been controlling her economy through various macroeconomic policies of which monetary policy is among using some monetary policy instruments in efforts to drive along the desired path. This study empirically reassessed the impact of monetary policy on economic growth of Nigeria adopting the Error Correction Model approach. It utilized time series secondary data spanning between 1982 and 2013. The result showed that a unit increase in Cash Reserve Ratio (CRR) led to approximately seven units increase in economic growth in Nigeria. The result was in consonance with economic literature as monetary policy among other objectives is geared towards achieving the macroeconomic objectives of sustained economic growth and price stability. Therefore, the study recommends that monetary authorities should give priority attention to CRR monetary policy tool as it will produce a more desired result in terms of economic stabilization. And also some combination of fiscal policy measures are needed to attain the complementary balance required to drive an economy towards to desired goals.*

KEYWORDS: Monetary Policy, GDP, Economic Stability, Economic Growth, Interest Rate, Cash Reserve Ratio, Monetary Policy Rate.

INTRODUCTION

BACKGROUND TO THE STUDY

Monetary policy as a technique of economic management is to bring about sustainable economic growth and development. This has been the pursuit of nations, as observed by Onyewu (2012) and formal articulation of how money affects economic aggregates. And this view dates back to the time of Adam Smith and later championed by the monetary economists. Since the expositions of the role of monetary policy in influencing macro-economic objectives like economic growth and development which include employment generation, stability in prices, growth in Gross Domestic Production (GDP), equilibrium in balance of payments and host of others monetary authorities are saddled with the key responsibility of using monetary policy to formulate and implement policies that gear toward driving the economy on an even keel.

If the economy slows and employment declines, policy makers will be inclined to soften monetary policy to stimulate aggregate demand. When growth in aggregate demand is boosted above growth in the economy's potential to produce, slack in the economy will be absorbed and employment will return to a more sustainable path. In contrast, if the economy is showing signs of overheating and inflation pressures are building, the Central Bank will be inclined to counter these pressures by tightening the economy through monetary policy to bring growth in aggregate demand below that of the economy's potential to produce for as long as necessary to

defuse the inflationary pressures and put the economy on a path to sustainable expansion. While these policy choices seem reasonably straightforward, monetary policy makers routinely face certain notable uncertainties because the actual position of the economy and growth in aggregate demand at any point in time is only partially known as key information on variables only come with lags such that policy makers are constraint to rely on estimates of these economic variables when assessing the choice of appropriate policy and therefore could act on the basis of misleading information. More so, monetary policy is not the only force acting on output, employment, and prices. Many other factors affect aggregate demand and aggregate supply and, consequently, the economic position of economic units. Some of these factors can be anticipated and built into spending and other economic decisions while others like shifts in consumer and business confidence, posture of creditors, natural disasters, disruptions in the oil market that reduce supply, agricultural losses, and slowdowns in productivity growth can be totally unpredictable and influence the economy in unforeseen ways.

The works of Christiano *et al.* (1999); Mishkin (2002); Bernanke *et al.* (2005); and Rafiq and Mallick (2008) showed that there is substantial evidence of the effectiveness of monetary policy innovations on real economic parameters in developed economies like the United States (US) and some core European countries. However, there have been various regimes of monetary policy in Nigeria. The economy often witnessed either expansionary or contractionary monetary policy in an attempt to achieve its set objectives. Nevertheless studies by Gertler and Gilchrist (1991); Batini (2004); Folawewo and Osinubi (2006); Onyemu (2012); Fasanya *et al*. (2013) observed that despite efforts made towards achieving the desired macroeconomics objectives through monetary policy that the results have not been sustainable enough as there are evidences of relatively high rate of unemployment, increased poverty rate, low standard of living, unacceptable rate of inflation etc. especially in less developed economies. The prevalence of these macroeconomic vices as mentioned above clearly showed that the issues of economic development especially in Nigeria has not been visibly addressed by monetary policy. This therefore gave rise to the need to investigate the actual relationship existing between the monetary policy and economic growth in Nigeria. The question therefore remains: "could the period of growth and development be attributed to appropriate monetary policy or could the period of economic down-turn be blamed on factors other than monetary policy inefficiencies?

It is in against the following backdrop that the objectives of this study is to reassess the impact of monetary policy on economic growth in Nigeria by determining the relationship existing between reserve ratio (RR) and the gross domestic product (GDP), the relationship existing between interest rate and GDP and the relationship existing between monetary policy rate (MPR) and the GDP.

LITERATURE REVIEW

Monetary policy is certainly one of key drivers of economic growth and development through its impact on economic variables. Economic growth is essential in an economy as it is expected to lead to reduction in the level of poverty, help narrow the inequality gap in the society, create employment as well as improving livelihoods. The growing importance of monetary policy as opined by Chipote and Makhetha-Kosi (2014) has made its effectiveness in influencing economic growth a priority to most governments. Nkoro (2005) as cited in Chipote and Makhetha-Kosi (2014) pointed that despite the lack of consensus among economists on how

monetary policy actually works and on the magnitude of its effect on the economy; there is a remarkable strong agreement that it has some measure of effects on the economy. Nigeria and other developing economies use monetary policy as expected means of promoting desired economic goals. According to Onoh (2007) and Central Bank of Nigeria (2011) Nigeria has used these instruments at different stages of the country's development. Baumol and Blinder (1979), Wonnacott and Wonnacott (1979), Jingan (2007), Gordan (1981) believe that the effective use of the monetary policy instruments depend on a number of factors, including the level of development of the money markets. The situation is worse in developing economies, Jingan (2007) asserted and corroborated by Akujuobi*, (2010)* Iyaji *et al.* (2012), and Fasanya *et al.* (2013), because of large non-monetized sector, under-developed money and capital markets, large numbers of non-formal financial institutions, high liquidity nature of most of the deposit money banks, small percentage of bank money vis-à-vis money supply and the culture of most people not having banking habit. This is so because monetary policy instruments work through transmission paths.

One of the most striking advances in macro-economic theory along the past few years is the change of paradigm in the analysis of monetary policy. The new Keynesian model developed by Clarida, Gali and Gertler (1999), Gali (2002) among many others became a central tool for the understanding of how short non-economic conditions are determined by the intervention of the monetary authority. Fisher (1932) argued that an increase in commodity prices since output and velocity were fixes initially and therefore a rise in commodity prices would exceed the increase in interest rate which was regarded as a component of a firm's operating cost. In the whole analysis by implication posits that rise in commodity prices will lead to an increase in a firms profit, demand, money stock and deposit which will eventually lead to a further rise in investment and commodity price. The excess reserved for lending will decline with interest rate, which was stocky earlier. In the analysis of long-term transmission of monetary influence, Fisher replaced ''Interest-Investment'' channel with ''Real Cash Balance''. He noted that when wealth rises due to rise in money stock, people tend to reduce their cash balances by purchasing goods and service. Since the velocity (v) and output (y) in Fisher's equation of exchange (MVPT) is fixed, the risen money stock (M) cannot lead to increased holding of goods and services but will lead to decline in price level (P). Keynes (1936) accepted that change in money supply relative has substitution effect and considered investment to be quite responsive to interest rates.

This monetary policy framework has received several modification and improvements in its structure, this original framework considers a quadratic objective function and a linear Phillips curve. Various authors, like Cukierman (2000), Ruge-Murcia (2002, 2004), Nobay and Peel (2003) Dolado *et al.* (2004) and Surico (2004), claim that a symmetric objective function does not represent properly the true policy problem, while other authors point batteries to the shape of the Phillips curve, which Clark *et al.* (1996), Debelle and Laxton (1997), Schalling (1999), Tambakis(1999) and Akerlof *et al.* (2001), among others represent.

Nigeria's Experience

The primary goal of monetary policy in Nigeria has been the maintenance of domestic price and exchange rate stability since it is critical for the attainment of sustainable economic growth and external sector viability. Adefeso and Mobolaji, (2010) employed Jahansen maximum likelihood co-integration procedure to show that there is a long run relationship between economic growth, degree of openness, government expenditure and money supply (M2) in Nigeria. Ajisafe and Folunso, (2002) observed that monetary policy exerts significant impact

on economic activity in Nigeria. Kogar (1995) examined the relationship between financial innovations and monetary control and concludes that in a changing financial structure, Central Banks cannot realize efficient monetary policy without setting new procedures and instruments in the long-run, because profit seeking financial institutions change or create new instruments in order to evade regulations or respond to the economic conditions in the economy. Examining the evolution of monetary policy in Nigeria in the past four decades, Nnanna, (2001) observed that though, the Monetary management in Nigeria has been relatively more successful during the period of financial sector reform which is characterized by the use of indirect rather than direct monetary policy tools yet, the effectiveness of monetary policy has been undermined by the effects of fiscal dominance, political interference and the legal environment in which the Central Bank operates. Busari *et al.* (2002) state that monetary policy stabilizes the economy better under a flexible exchange rate system than a fixed exchange rate system and it stimulates growth better under a flexible rate regime but is accompanied by severe depreciation, which could destabilize the economy meaning that monetary policy would better stabilize the economy if it is used to target inflation directly than be used to directly stimulate growth. They advised that other policy measures and instruments are needed to complement monetary policy in macroeconomic stabilization. In the same stride, Batini (2004) stress that in the 1980s and 1990s monetary policy was often constrained by fiscal indiscipline. Monetary policies financed large fiscal deficit which averaged 5.6 percent of annual GDP and though the situation moderated in the later part of the 1990s it was short lived as Batini (Ibid), described the monetary policy subsequently as too loose which resulted to poor inflation and exchange rates record.

Folawewo and Osinubi, (2006) investigate how monetary policy objectives of controlling inflation rate and intervention in the financing of fiscal deficits affect the variability of inflation and real exchange rate. The analysis is done using a rational expectation framework that incorporates the fiscal role of exchange rate. The paper reflects that the effort of the monetary authority to influence the finance of government fiscal deficit through the determination of the inflation-tax rate affects both the rate of inflation and the real exchange rate, thereby causing volatility in their rates. The paper reveals that inflation affects volatility of its own rate as well as the rate of real exchange. The policy implication of the paper is that monetary policy should be set in such a way that the objective it is to achieve is well defined. This suggests that the ability of the CBN to pursue an effective monetary policy in a globalised and rapidly integrated financial market environment depends on several factors which include, instituting appropriate legal framework, institutional structure and conducive political environment which allows the bank to operate with reference to exercising its instrument and operational autonomy in decision-making, the degree of coordination between monetary and fiscal policies to ensure consistency and complementarity, the overall macroeconomic environment, including the stage of development, depth and stability of the financial markets as well as the efficiency of the payments and settlement systems, the level and adequacy of information and communication facilities and the availability of consistent, adequate, reliable, high quality and timely information to Central Bank of Nigeria.

METHODOLOGY

Model Estimation and Data Issues

From the foregoing review, the paper adopts the Error Correction Model to reassess the impact of monetary policy on economic growth of Nigeria. The model is expressed thus:

RGDP = f (IR, CRR, MPR) …………………………………………………….. (1)

Where;

RGDP = Real Gross Domestic Product
IR = Interest Rate
CRR = Cash Reserve Ratio
MPR = Monetary Policy Rate

In our model, RGDP measures economic growth of Nigeria while IR, CRR, MPR are our monetary policy variables, whose impacts were reassessed in this paper.

From the functional relationship above (1), the econometric model was specified thus below (2). The econometric form represents the actual population representation of the true relationship or the structural or explicit function of the relationship. Thus, our model is structurally specified as:

$RGDP = \psi_0 + \psi_1 IR + \psi_2 CRR + \psi_3 MPR + \varepsilon$ ……………………………… (2)

Source of Data

The data required for this study are of the secondary nature and were collected mainly from the Central Bank of Nigeria (CBN) Statistical Bulletin, Annual Reports and Statement of Accounts (of various issues). These data were supplemented with data from the National Bureau of Statistics (NBS) as well as the Federal Ministry of Finance.

EMPIRICAL RESULTS

By the rule of thumb and assuming every other thing remains equal/constant we employed the Ordinary Least Square (OLS) and other time series estimation techniques to test the hypotheses in this paper. The tables below show our various results.

Stationarity Test Results (Unit Root)

Variables	ADF Statistics	Critical Values	Order of Integration
RGDP	-5.823025	1% = -3.6661* 5% = -2.9627 10% = -2.6200	I (1) Stationary at first difference
IR	-6.414077	1% = -3.6661* 5% = -2.9627 10% = -2.6200	I (1) Stationary at first difference
CRR	-2.980288	1% = -3.6661* 5% = -2.9627 10% = -2.6200	I (1) Stationary at first difference
		1% = -3.6661*	I (1)

MPR	-5.833626	5% = -2.9627 10% = -2.6200	Stationary at first difference

Source: Authors' Computation, 2015

From the table above, the Mackinnon critical value for rejection of unit root hypotheses indicates as follows:

RGDP, IR, CRR, MPR are stationary after first differencing and as such they are integrated at order one I (1).

COINTEGRATION TEST

Johansen Cointegrating Test

Eigen Values	**Likelihood ratio**	**5% Critical value**	**1% Critical value**	**Hypothesized no of CE(s)**
0.619867	60.52391	47.21	54.46	None**
0.424298	30.53969	29.68	35.65	At most 1*
0.239480	13.42259	15.41	20.04	At most 2
0.147203	4.936247	3.76	6.65	At most 3*

Source: Authors' Computation, 2015

*(**) denotes rejection of hypothesis at 5% (1%) significant level

Likelihood ratio test indicates two cointegrating equations at 5% level of significance. Therefore, this suggests that there will be long run relationship among the variables.

Error Correction Model Result and Discussion

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-4.208992	8.455188	-0.497800	0.6228
D(D(IR))	-1.946261	1.344124	-1.447977	0.1596
D(D(CRR))	6.971632	3.377270	2.064280	0.0491
D(D(MPR))	-0.653380	1.977099	-0.330474	0.7437
ECM(-1)	-0.066450	0.483509	-4.273861	0.0002
R-squared	0.448543	Mean dependent var.		8.253710
Adjusted R-squared	0.363704	S.D. dependent var.		55.53862
S.E. of regression	44.30215	Akaike info criterion		10.56663
Sum squared resid	51029.69	Schwarz criterion		10.79792
Log likelihood	-158.7828	F-statistic		5.286959
Durbin-Watson stat	1.277534	Prob(F-statistic)		0.002979

Source: Authors' Computation, 2015

From the results estimated above, Cash reserve ratio was statistically significant while Interest rate, monetary policy rate were statistically insignificant. The results therefore, showed that a unit increase in Cash reserve ratio led to approximately 7 units increase in economic growth in Nigeria.

Furthermore, in terms of relationships, the results indicated that Interest rate, monetary policy rate had negative relationships with economic growth while Cash reserve ratio had positive relationship with economic growth.

The implication of the results is that among the monetary policy variables reassessed, it was only Cash reserve ratio that was significant in impacting on economic growth. This showed that as monetary authorities increase the Cash reserve ratio of financial institutions the more effective the money supply will improve economic growth in the Nigerian economy.

The Error correction mechanism of the error correction model was negative and statistically significant, implying that a long run relationship exists among the variables. It also showed that if there is short run disequilibrium in economy, in the long run the economy can return to equilibrium with a poor speed of adjustment of 6%.

CONCLUSION AND RECOMMENDATIONS

The results arising from this study showed that the most effective monetary policy tool among the tools reassessed was Cash reserve ratio as a unit increase in Cash reserve ratio resulted to improvement in economic growth by 7 units without increasing the inflationary pressure in the Nigerian economy.

Therefore, the study recommends that monetary authorities in stabilizing the Nigerian economy should give priority attention to Cash reserve ratio as it will produce a more desired result in terms of economic stabilization.

In the light of the above, the issue of broad monetary policy instruments should be critically looked into by the monetary authorities especially in Nigeria because it can be sometimes dangerous for the economy; rather efforts should be put in place in ensuring that commercial banks (Deposit Money Banks) follow Central Bank's guideline for financial intermediation. Moreover, the recent Central Bank's policy of cashless society should be genuinely pursued with vigor as it will help in minimizing inappropriate moves by commercial banks to meet their customers' demand at the expense of macroeconomic policy objectives.

Also helpful fiscal policy measures should be undertaken alongside monetary policy, as both are re-enforcing and complementary.

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