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MONETARY POLICY AND ECONOMIC GROWTH NEXUS: FURTHER EVIDENCE FROM NIGERIA

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ABSTRACT: *This study examined the link between monetary policy and economic growth in Nigeria using data from 2000 to 2017. The study adopted gross domestic product (GDP) as proxy for economic growth and the dependent variable, while broad money supply (BMS), interest rate (INT), cash reserve ratio (CRR), and liquidity ratio (LQR) were used as proxies for monetary policy and the independent variables. Time series secondary data for the variables were sourced from annual reports of Central Bank of Nigeria (CBN) Statistical Bulletins and the Federal Office of Statistics covering the period 2000 to 2017. The study employed descriptive statistics and multiple regression technique based on the E-views 9.0 software as methods of data analysis. The empirical results showed that all the independent variables (broad money supply, interest rate and liquidity ratio) had significant positive effect on gross domestic product, proxy for economic growth except cash reserve ratio which had an insignificant negative link with gross domestic product. On the whole, the findings of this study established that monetary policy had a significant link with economic growth. In other words, monetary policy intervention plays a crucial role in economic growth and development. Based on the findings, the study recommended that monetary policy authorities should ensure general stability in broad money supply, try to maintain a stable interest rate regime as well as stable liquidity position, and put sound monetary policies in place to direct the flow of funds to highly productive sectors to spur growth in the economy and national development.*

KEYWORDS: cash; interest; liquidity; money; product

INTRODUCTION

Monetary policy refers to the economic actions taken by the monetary authorities usually through the apex bank of a country to control the value, supply and cost of money in the economy in order to achieve set macroeconomic objectives decided upon by government. In Nigeria the apex bank, the Central Bank of Nigeria (CBN) is the relevant monetary authority which regulates money supply in such a way as to achieve full-employment equilibrium, rapid economic growth, price stability, and external balance of payment (Fasanya & Onakoya, 2013). The CBN was established through the CBN Act of 1958. That law and its subsequent amendments vest on the CBN the responsibility to control the economy through monetary policies, and spells out clearly the objectives of monetary policy (Sulaiman & Migiro, 2014).

Money supply by definition comprises narrow money and broad money. Narrow money includes currency in circulation with non-bank public and current account balances with banks. While broad money includes narrow money in addition to savings and time deposits as well as foreign denominated accounts balances (CBN, 2006). Broad money therefore represents the total volume of money available in the economy. Excess money supply or liquidity may arise in the economy when the amount of broad money is over and above the level of total output (economic activity), a situation that may lead to high prices of goods and services or inflation, if not controlled through monetary policies. The implication of this is that there should be a stable relationship between the quantity of money supply and economic activity. The above presents a strong presumption that monetary policy can be linked to economic growth as it influences aggregate demand and supply which would ultimately affect the growth of the economy (Gul, Mughal & Rahim, 2012).

Having introduced the subject of monetary policy and money supply above, there is need also to briefly talk about economic growth here since this study examined the nexus between monetary policy and economic growth. Economic growth is viewed as a sustained increase in per capita national output or net national product over a long period of time (Dwivedi, 2004). It is considered as growth if the rate of increase in total output (goods and services) is greater than the rate of growth of the population. It is the quantitative increase in the monetary value of goods and services produced in the economy within a given year, and can be measured as a percentage change in the gross domestic product or gross national product. Growth can be achieved by an efficient use of available resources to increase the production capacity of the economy. Godwin and Thomas (1994) explained that economic growth is increase in the average rate of output produced per person, usually measured on a per annum basis, and adjusted for inflation. It is considered as the rate of change in national output or income in a given period. It is the increase of per capita gross domestic product or aggregate income, often measured as the rate of change in real gross domestic product.

Many studies have been carried out in the past on the link between monetary policy and economic growth. The review of past empirical literature revealed a lack of consensus in the study findings of previous scholars. The lack of consensus by past researchers leaves a research gap which indicated that more studies are required on this subject. This study therefore examined the monetary policy and economic growth nexus in Nigeria using time series data covering 2000 to 2017 as a contribution to fill that research gap. The study employed gross domestic product (GDP) as proxy for economic growth and the dependent variable, while broad money supply (BMS), interest rate (INT), cash reserve ratio (CRR), and liquidity ratio (LQR) are used to proxy monetary policy (the independent variable). The specific objectives of the study were to determine the effect of the selected monetary policy variables on gross domestic product. These objectives informed the research questions addressed as well as the hypotheses tested in this study. The significance of this study lies in the fact that it was driven by the need to establish a real link between monetary policy and economic growth as every stakeholder in the economy is desirous of fast tracking growth and development in the economy. In the final analysis, the findings of this study would be of immense benefit to the monetary policy authorities, the policy makers in government, the academia and consultants in general.

This paper is organized into five sections. Following the background introduction in section one above, is the review of related literature in section two. Section three covers the methodology adopted for the study, and the results of data analysis and discussion of findings are covered in section four, while section five deals with the study conclusion and recommendations.

REVIEW RELATED LITERATURE

This section presents the review of related literature covering the theoretical framework and review of past empirical studies to provide the theoretical justification and foundation for this study on monetary policy and economic growth nexus in Nigeria. The review is presented in the following sub-sections.

Theoretical framework

Several theories exist in monetary economics and finance that can be found to give theoretical support for a study on the relationship between monetary policy and economic growth. The three major theories relating to the subject are the Classical Monetary Theory, the Keynesian Theory and the Monetarist Theory. However, this study is anchored on the Monetarist Theory to provide the theoretical background and justification for this study, as briefly stated hereunder.

Monetarist theory

The theoretical foundation of this study is anchored on the monetarist theory. The monetarist theory of economic growth was led by monetarists such as Friedman, which emphasized that money supply is the critical factor affecting the economic well-being of a nation (Friedman, 1974). This implies that in order to promote a steady rate of growth in an economy, money supply has to grow at a fixed rate rather than being regulated and controlled by the monetary authorizes (the apex banks). Friedman argued that money supply is a substitute, not just for bonds, but also for goods and services. Therefore changes in money supply would have both direct and indirect impact on spending and investments in a manner that the demand for money would depend on the rates of return on different competing assets. This theory therefore contends that changes in money supply are the most important determinants of economic growth.

Empirical review

Many studies have been carried out in the past on the link between monetary policy and economic growth, using different approaches. For example, Ekwe, Ogbonnaya and Omodero, (2017) examined the impact of monetary policy on economic growth in Nigeria using secondary data obtained from the Central Bank of Nigeria for the period 1996 to 2016. They adopted GDP as proxy for economic growth and the dependent variable, while broad money supply and credit to private sector were used as proxies for monetary policy (the independent variable). The study employed multiple regression technique based on the SPSS computer software as the statistical tool for data analysis. They found that monetary policy had no significant impact on economic growth. Similarly, Anowor and Okorie (2016) investigated the impact of monetary policy on

economic growth in Nigeria using secondary time series data from 1982 to 2013. Monetary policy variables adopted include; interest rate, cash reserve ratio, and monetary policy rate. These variables were regressed against gross domestic product proxy for economic growth. The statistical techniques used for data analysis include Unit root test, Johansen co-integration test and Error Correction model. (ECM) The results revealed that cash reserve ratio had positive impact on GDP, while interest rate and monetary policy rate had negative link with GDP. The study recommended that monetary authorities should give priority attention to handling cash reserve ratio.

Adigwe, Echekoba and Onyeagba (2015) examined the impact of monetary policy on economic growth in Nigeria for a period of 21 years spanning 1980 to 2010. Two models were tested in the study. In model one (the model of interest in this study) gross domestic product used to proxy economic growth was regressed against selected monetary policy variables such as liquidity ratio, broad money supply and cash reserve ratio. Secondary time series data obtained for the study was therefore analyzed using the Augmented Dickey-Fuller unit root test and the ordinary least squares method. The results showed that broad money supply had significant positive link with gross domestic product, while liquidity ratio and cash reserve ratio had positive but insignificant link with gross domestic product. The implication is that broad money supply had positive impact on economic growth. Another study by Udude (2014) examined the impact of monetary policy on economic growth using secondary data obtained from the Central Bank of Nigeria for the period spanning 1981 to 2012. The study employed monetary policy instruments such as broad money supply, interest rate, exchange rate and liquidity ratio as the explanatory variables, and gross domestic product proxy for economic growth the response variable. Data analysis techniques used include ADF unit toot test, Johansen co-integration test and Vector Error Correction Mechanism (VECM). The test results indicated that only exchange rate had significant impact on gross domestic product (proxy for economic growth). The study concluded therefore that monetary policy had no significant impact on economic growth. The findings of this study contradicts the study results of Adigwe et al (2015),

Sulaiman and Migiro (2014) investigated the link between monetary policy and economic growth in Nigeria using data from 1981 to 2012. The study regressed GDP a measure of economic growth against monetary policy instruments such as cash reserve ratio, minimum rediscount rate, exchange rate, money supply and interest rate. Time series data obtained from the Central Bank of Nigeria for the study period were analysed using econometric tools such as Johansen co-integration, Granger Causality and ADF unit root tests. They found that monetary policy had noticeable impact on economic growth, which suggest positive contribution to national productivity and development. Ebiringa, Onuorah and Obi (2014) investigated the impact of monetary policy on economic growth in Nigeria using secondary data from 1982 to 2012. The study employed a combination of Breusch-Godfrey serial correlation, Augmented Dickey-Fuller unit root test, Johansen co-integration test, Ordinary Least Squares, among other tests to analyse data. The results show that monetary policy instruments such as interest rate, inflation rate and money supply had negative effect on economic growth. But their findings are not in agreement with the findings of (Sulaiman et al, 2014).

Fasanya, Onakoya and Agboluaje (2013) investigated the influence of monetary policy on economic growth in Nigeria using secondary time series data covering the period 1975 to 2010. The study employed Error Correction Model (ECM) as the statistical tool for analysing data. The results show that the monetary policy variables used such as inflation rate, exchange rate and external reserves had significant impact on economic growth. Also, Onyeiwu (2012) examined the impact of monetary policy on economic growth in Nigeria for the period 1981 to 2008 using secondary data collected from the Central Bank of Nigeria on the study variables. In the model of interest, the study regressed GDP against broad money supply, liquidity ratio and cash reserve ratio. Multiple regression analysis based on the OLS technique was employed to test the data. The results showed that broad money supply had positive significant effect on economic growth, while cash reserve ratio and liquidity ratio had positive but insignificant impact on economic growth. Chuku (2009) conducted a controlled experiment based on a Structural Vector Auto-regression (SVAR) model to trace the impact of monetary policy shocks on output and prices in Nigeria. They made the assumption that the Central Bank of Nigeria cannot foresee unexpected changes in output and prices within the same period. Their experiment was conducted using three monetary policy instruments such as broad money (M2), minimum rediscount rate (MRR) and real effective exchange rate (REER). They found that monetary policy innovations carried out on the quantity-based nominal anchor M2 had modest impact on output and prices with very fast speed of adjustment. Whereas, innovations conducted on the price-based nominal anchor MRR and REER had neutral effects on output. They concluded that money supply in the economy is the most influential monetary policy instrument.

Chipote and Makhetha-Kosi (2014) examined the relationship between monetary policy and economic growth in South Africa over the period 2000-2010. The study made use of secondary time series data obtained from publications of South African Reserve Bank, South African Department of Statistics and the World Bank for the aforementioned period. GDP, proxy for economic growth and the dependent variable was regressed against monetary policy variables such as money supply, repo rate, consumer price index and exchange rate. The techniques of data analysis employed include unit root test, Johansen co-integration test and Error Correction Model. The results revealed that money supply, repo rate and exchange rate had insignificant link with GDP, while consumer price index significantly influenced economic growth. Based on their findings they concluded that monetary policy alone was unable to spur economic growth in South Africa.

Agbonlahor (2014) conducted an empirical investigation of the impact of monetary policy on economic growth in the United Kingdom using secondary time series data spanning 1940 to 2012. Data analysis techniques employed include Unit root test, Johansen co-integration Vector Error Correction Model (VECM), among others. The study revealed the existence of long run relationship among the variables, and found specifically that among the six monetary policy instruments adopted only price level changes and money supply were significant drivers of economic growth in the UK.

Chaudhry, Qamber and Farooq (2012) examined the link between monetary policy, inflation and economic growth in Pakistan using time series data from 1972 to 2012. The results showed that

credit to the private sector, financial depth, exchange rate and budget deficit had significant influence on GDP. It also showed a bi-directional link between GDP and exchange rate, while a one-way directional link existed from GDP to financial depth, private sector credits and budget deficit. In a similar study Nouri and Samimi (2011) investigated the impact of monetary policy on economic growth in Iran using time series data from 1974 to 2008. They employed Ordinary Least Squares regression technique as the statistical tool for data analysis. The study established a positive significant relationship between money supply and economic growth.

Ivrendi and Yildirim (2013) examined macroeconomic variables and monetary policy dynamics in a cross-section of six fast growing economies such as Brazil, China, India, Russia, South Africa and Turkey. The study employed a Structural Vector Auto-regression (SVAR) model for data analysis, and it found that strict monetary policy increases the value of legal tender, interest rates and reduces inflationary pressure and output in most of these economies. There was no evidence of exchange rate, price, trade and output relationships. The study concluded that exchange rate is the most influential macroeconomic variable in the six countries.

Balogun (2007) investigated the link between monetary policy and economic growth in the Economic Community of West African States; namely Gambia, Ghana, Guinea, Nigeria and Sierra Leone. The study adopted aggregate GDP of these counties as the dependent variable which was regressed against monetary policy variables such as money supply, minimum rediscount rate, bank credits to the private sector, bank credits to public sector and US Dollar exchange rate. The Generalized Least Squares (GLS) method of data analysis was employed to analyse their data, and the findings revealed monetary policy as a veritable source of economic stagnation rather than promoting growth in the region.

Starr (2005) examined the link between monetary policy, prices and output in the post-stabilization period in four core CIS countries (Belarus, Kazakhstan, Russia and Ukraine) using time series quarterly data covering 1995 to 2003. They employed Granger Causality test as the technique for data analysis. The results showed little evidence of real growth effects of monetary policy in the four core CIS countries except that interest rate had significant impact on output in Russia.

Gap in Literature

The review of past empirical literature as reported in the foregoing paragraphs revealed a lack of consensus in the study findings of previous scholars. The lack of consensus by past researchers leaves a research gap which indicated that more studies are required on this subject. This, in addition to the need to contribute to the literature on monetary policy-economic growth nexus, was the motivation for this study.

METHODOLOGY

This section covers the methodology adopted for the study, which is ex post facto research design since the study relies on already existing time series secondary data. This makes it impossible for the researcher to manipulate the data used in the study. Other sub themes covered in this section include the source of data, variables of the study, model specification and methods of data analysis.

Source of data

Time series secondary data for the study variables covering the period 2000 to 2017 were collected from various annual reports from the Central Bank of Nigeria (CBN) Statistical Bulletins and the Federal Office of Statistics. These sources are considered the most reliable data sources for this type of study. The period covered by the study is 18 years, which was considered long enough for the researcher draw meaningful conclusions.

Variables of the study

The aim of this study was to examine the link between monetary policy and economic growth in Nigeria using secondary data for the period from 2000 to 2017. The study adopted the gross domestic product (GDP) as proxy for economic growth and the dependent variable. While broad money supply (BMS), Interest Rate (INT), Cash Reserve Ratio (CRR) and Liquidity Ratio (LQR) were adopted as proxies for monetary policy and the explanatory variables.

Gross domestic product (GDP)

GDP is used to proxy economic growth which is viewed as an increase in per capita national output or net national product over a long period of time. It is considered as growth if the rate of increase in total output (goods and services) is greater than the rate of growth of the population. It is the quantitative increase in the monetary value of goods and services produced in the economy within a given year, and can be measured as a percentage change in the gross domestic product or gross national product.

Broad money supply (BMS)

Broad money supply represents the total volume of money available in the economy which comprises narrow money (that is, currency in circulation with the non-bank public and current account balances with banks); and savings and time deposits as well as foreign denominated accounts balances.

Interest rate (INT)

Interest rate is either the cost for borrowing or the reward for saving money. In developed economies interest rates are fixed by market forces and are only indirectly influenced by official policy invention. But in Nigeria interest rate is an integral part of the monetary policy adopted by the CBN to control and manage money supply in the economy. Interest rates affect the cost of borrowing which, all things being equal, should lower demand for loans and curb the growth of bank credits. Interest rates are subject ‘caps’ from time to time.

Cash reserve ratio (CRR)

Cash reserve ratio is a CBN regulation to set the minimum proportion of customer deposits and notes that deposit money banks must hold in reserves rather than lend out. This requirement is normally in the form of deposits with the Central Bank, or physical cash in the vault of the banks.

It is used as a monetary policy tool to influence borrowing and interest rates in the country by limiting the amount of money available for banks to grant loans.

Liquidity ratio (LQR)

This specifies the ratio of certain liquid assets and securities banks must maintain against their deposit liabilities. The CBN prescribes whenever it so desires the percentage of liquid assets that deposit money banks must maintain against their customer deposits. The liquid assets considered are usually cash and short marketable securities including government securities such as treasury bills and certificates.

Model specification

The functional relationship of the dependent variable and the explanatory variables are expressed in the following model which is an adaptation of a model that has been widely used by previous researchers such as (Ekwe et al, 2017; Anowor et al, 2016; Adigwe et al, 2015; Ebiringa et al, 2014; Chipote et al, 2014; and Sulaiman et al, 2014).

$GDP = f\ (BMS, INT, CRR, LQR)$

The above functional relationship is translated into an econometric equation as follows:

$GDP = \beta_0 + \beta_1 BMS + \beta_2 INT + \beta_3 CRR + \beta_4 LQR + \mu$ Equation 1

Where:

GDP = Gross Domestic Product
BMS= Broad money supply (explanatory variable 1)
INT= Interest rate (explanatory variable 2)
CRR = Cash Reserve Ratio (explanatory variable 3)
LQR = Liquidity Ratio (explanatory variable 4)
β_0 = intercept or constant
β_1, β_2, β_3 & β_4 = coefficients of the explanatory variables or factor sensitivities
A priori expectations: $\beta_0 > 0$, β_1, β_2, β_3 & $\beta_4 \neq 0$
μ = the error term

Methods of data analysis

The study employed descriptive statistics and multiple regression technique based on the E-views computer software as methods of data analysis for predicting the link between the monetary policy variables (BMS, INT, CRR and LQR) and economic growth proxy by gross domestic product (GDP) based on the model specified above. The multiple regression technique possesses the unique property of best linear unbiased estimator including efficiency and consistency when compared with other estimating techniques.

The statistics tested for in the regression equation included the coefficient of determination (R^2), the probability of F-statistics, and the Durbin-Watson statistics. The coefficient of determination (R^2) measures the explanatory power of the independent variables on the dependent variable. The

probability of F-statistics test for the overall statistical significance of the regression model, which is used to generalize the hypotheses. While the Durbin-Watson statistics is used to test for autocorrelation in the regression equation. The coefficients of the explanatory variables indicate the extent to which the independent variables individually influence the dependent variable.

Results of data analysis and discussion of findings

Annual data obtained for the study, the results of data analysis and the discussion of the findings including the test of hypotheses are presented in this section.

Annual data for study variables

The annual data collected for study variables from 2000 to 2017 are presented in Table 1 below. GDP and BMS are indicated in billions of Nigerian (Naira) currency, while INT, CRR and LQR are stated in per cent points.

Descriptive statistics

The descriptive statistics of the study variables, generated from the E-views 9.0 computer software are presented in Table 2 below. From Table 2, the mean figures of GDP, BMS, INT, CRR and LQR are 43626.26, 9447.97, 22.19, 10.53 and 44.97 respectively. In the order the variables are presented, the minimum figures are 6713.57, 878.46, 18.09, 1.00 and 30.00 respectively, while the maximum figures are 94487.93, 23590.06, 30.19, 22.50 and 64.10, with standard deviation of 35234.10, 7526.30, 3.42, 6.95 and 9.87 respectively.

Table 1: Annual Values, Rates and Ratios of the Study Variables

	Dependent Variable	Independent Variables			
Year	**GDP (Nb)**	**BMS (Nb)**	**INT (%)**	**CRR (%)**	**LQR (%)**
2000	6,713.57	878.46	21.55	9.80	64.10
2001	6,895.20	1,269.32	21.34	10.80	52.90
2002	7,795.76	1,505.96	30.19	10.60	52.50
2003	9,913.52	1,952.92	22.88	10.00	50.90
2004	11,411.07	2,131.82	20.82	8.60	50.50
2005	14,610.88	2,637.91	19.49	9.70	50.20
2006	18,564.59	3,797.91	18.41	4.20	55.70
2007	20,657.32	5,127.40	18.09	2.60	48.80
2008	24,296.33	8,008.20	18.36	3.00	44.30
2009	24,794.24	9,411.11	22.62	1.30	30.70
2010	54,612.26	11,034.94	22.51	1.00	30.40
2011	62,980.40	12,172.49	22.42	8.00	42.00
2012	71,713.94	13,895.39	23.79	12.00	49.70
2013	80,092.56	15,160.29	26.69	13.00	46.20
2014	89,043.62	17,679.29	25.74	20.00	38.30
2015	94,144.96	18,901.30	26.71	20.00	42.30
2016	92,544.50	20,908.86	18.90	22.50	30.00

2017	94,487.93	23,590.06	18.90	22.50	30.00

Source: Annual Reports of CBN Statistical Bulletin & Federal Office of Statistics

Table 2: Descriptive Statistics

	GDP	BMS	INT	CRR	LQR
Mean	43626.26	9447.979	22.18944	10.53333	44.97222
Median	24545.29	8709.655	21.98500	9.900000	47.50000
Maximum	94487.93	23590.06	30.19000	22.50000	64.10000
Minimum	6713.570	878.4600	18.09000	1.000000	30.00000
Std. Dev.	35234.10	7526.300	3.415998	6.951767	9.873721
Skewness	0.369043	0.420971	0.716151	0.411347	-0.202188
Kurtosis	1.417417	1.838927	2.782761	2.173260	2.274590
Probability	0.318701	0.462384	0.455206	0.600422	0.772091
Sum	785272.6	170063.6	399.4100	189.6000	809.5000
Observations	18	18	18	18	18

Source: E-views 9.0 output

REGRESSION RESULTS/DISCUSSION OF FINDINGS

From the multiple regression results in Table 3 above, the regression equation could be stated as:
GDP = -53924.74 + 5.20BMS + 946.30INT – 88.92CRR + 630.76LQR + 6632.47
This indicates that the constant or intercept is -53924.74, meaning that if all the independent variables (broad money supply, interest rate, cash reserve ratio and liquidity ratio) are held constant, the dependent variable, GDP (proxy for economic growth would decrease by 53924.74 units in an annual basis. This implies that without the intervention of the monetary authorities the economy of Nigeria would be growing at a declining rate. BMS, INT and LQR have positive coefficients of 5.20, 946.30 and 630.76 with significant probability values of 0.0000, 0.0545 and 0.0472 respectively. Secondly, CRR has a negative coefficient of -88.92 with an insignificant (greater than 5% level of significance) probability value of 0.1079. The results as it where in Table 3 showed that BMS, INT and LQR have significant positive link with GDP, while CRR has an insignificant negative effect on GDP.

Table 3: Multiple Regression Results
Dependent Variable: GDP
Method: Least Squares
Date: 03/20/19 Time: 00:26
Sample: 1 18
Included observations: 18

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-53924.74	17474.95	-3.085831	0.0087
BMS	5.199340	0.481946	10.78823	0.0000
INT	946.3028	488.0645	1.938889	0.0545
CRR	-88.92378	358.3226	-0.248167	0.1079
LQR	630.7554	287.7037	2.192378	0.0472

R-squared	0.972903	Mean dependent var	43626.26
Adjusted R-squared	0.964566	S.D. dependent var	35234.10
S.E. of regression	6632.469	Akaike info criterion	20.66747
F-statistic	116.6903	Schwarz criterion	20.91480
Prob(F-statistic)	0.000000	Durbin-Watson stat	1.923593

Source: E-views 9.0 output

Whereas all the explanatory variables have significant relationship with the response variable as indicated by the probability values (except CRR with a negative effect and an insignificant probability value); the coefficient of determination R^2 value at 0.97 shows that 97% of changes in the response variable are explained by the combined effect of changes in the explanatory variables; and the value of the Adjusted R^2 shows at 96% confidence level that the regression model adopted as the basis of the analysis is a proper and good fit.

Also, the Durbin-Watson statistics value of 1.92, which is approximately equal to the 2.0 benchmark, indicates that there was no autocorrelation among the explanatory variables. Therefore, with the coefficient of determination, R^2 value at 0.97 and the probability of the F-statistic value of 0.0000 it was established in this study that monetary policy exerted a significant influence on economic growth in Nigeria.

Testing of hypotheses
GDP and BMS

Hypothesis: Broad money supply (BMS) has no significant influence on gross domestic product (GDP) proxy for economic growth. The results in Table 3 show that the coefficient of BMS is 5.20

at 5% significant level (with a prob. of 0.0000). This means that the null hypothesis is rejected as the results show that BMS has significant positive influence on GDP. A unit increase in BMS will result in 5.20 units increase in GDP. The economic implication being that with increase in broad money supply more money is available at the disposal of the public to invest in productive economic activities which would lead to increase in GDP. This finding agrees with the results of (Chaudhry et al, 2012, Onyeiwu, 2012, Agbonlahor, 2014 and Adigwe, et al, 2015).

GDP and INT

Hypothesis: Interest rate (INT) has no significant impact on gross domestic product (GDP) proxy for economic growth. The coefficient of INT in Table 3 is 946.30 at 5% significant level (with a prob. of 0.0545). The null hypothesis therefore was rejected as INT has a significant positive relationship with GDP. A unit increase in INT would bring about 946.30 units increase in GDP, implying that if the interest rate is increased lenders would grant more loans to borrowers to engage in productive economic activities which would enhance growth in the economy. This result contradicts the findings of (Ebiringa et al, 2014 and Anowor et al 2016).

GDP and CRR

Hypothesis: Cash reserve ratio (CRR) has no significant effect on gross domestic product (GDP) proxy for economic growth. The coefficient of CRR in Table 3 is -88.92 at 11% significant level (with a prob. of 0.1079). This means that an acceptance of the null hypothesis; CRR has a negative effect on GDP, but this not significant at 5% level. Here, it was found that a unit increase in CRR would bring about 88.92 units decrease in GDP only at 89% level of confidence. This implies that monetary authority should relax cash reserve requirement in implementing monetary policies. This result contradicts the findings of (Anowor et al, 2016).

GDP and LQR

Hypothesis: Liquidity ratio (LQR) has no significant influence on gross domestic product (GDP) proxy for economic growth. The coefficient of LQR in Table 3 is 630.76 at 5% significant level (with a prob. of 0.0472). The null hypothesis therefore was rejected as LQR has a significant positive effect on GDP. Again, a unit increases in LQR would bring to about 630.76 units increase in GDP, meaning that a stable liquidity position will spur economic activities. There is little agreement with the findings of (Adigwe et al, 2015 and Onyeiwu, 2012) here.

The overall implication of these findings is for the regulatory authorities to ensure that there is a general stability in broad money supply, interest rates and liquidity ratio while trying to relax cash reserve requirements in the implementation of monetary policies in the economy.

CONCLUSION AND RECOMMENDATIONS

In this final section of the paper is presented the conclusion and recommendations based on the study findings.

Conclusion

This study examined the link between monetary policy and economic growth in Nigeria. The study adopted gross domestic product (GDP) as proxy for economic growth and the dependent variable, while broad money supply (BMS), interest rate (INT), cash reserve ratio (CRR), and liquidity ratio (LQR) were used as proxies for monetary policy and the independent variables. Time series secondary data for the variables were sourced from annual reports of Central Bank of Nigeria (CBN) Statistical Bulletins and the Federal Office of Statistics covering the period 2000 to 2017. The study employed descriptive statistics and multiple regression technique based on the E-views 9.0 software as methods of data analysis.

The empirical results showed that all the independent variables had significant positive effect on gross domestic product, proxy for economic growth except cash reserve ratio which had an insignificant negative link with gross domestic product. On the whole, the findings of this study have established that monetary policy had a significant link with economic growth. Besides, monetary policy intervention plays a crucial role in economic growth and national development. This result is consistent with the study findings of (Adigwe et al, 2015 and Sulaiman & Migiro, 2014), even though what this study established is contrary to the findings of (Chipote & Makhetha-Kosi, 2014 and Balogun, 2007). It is hoped that future researchers would find the results of this study useful just as the findings of this study would be of immense benefit to monetary policy authorities, policy makers and consultants in general.

Recommendations

Based on the findings of this study the following recommendations are made:

1. Monetary policy authorities should ensure that there is general stability in broad money supply, and at the same time try to maintain a stable interest rate regime as well as stable liquidity position to spur growth in the economy.
2. The monetary authorities should put in place sound monetary policies that would direct the flow of available funds to highly productive sectors of the economy to fast track growth and national development.

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