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IMPACT OF MONETARY POLICY ON ECONOMIC GROWTH IN NIGERIA

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ABSTRACT

The study examined the impact of monetary policy on economic growth in Nigeria. This research work covers the period between 1986-2020. The data was analyzed using Ordinary Least Square (OLS).. Findings from the research showed that there is no causality between monetary policy rate and economic growth in Nigeria; Money supply causes economic growth in Nigeria; There is no causality between exchange rate and economic growth in Nigeria; Economic growth (GDP) causes interest rate in Nigeria and that investment causes economic growth in Nigeria. it was therefore recommended among others that Monetary policies should be used to create a favourable investment climate by facilitating the emergency of market based interest rate and exchange rate regimes that attract both domestic and foreign investments, create jobs, promote non-oil export and revive industries that are currently operation far below installed capacity. In order to strengthen the financial sector, the Central Bank has to encourage the introduction of more financial instruments that are flexible enough to meet the risk preferences and sophistication of operators in the financial sector.

Keywords: Gross Domestic Product at current market prices, Monetary policy rate, Money supply, Real exchange rate, Interest rate, and Investment.

1.0 INTRODUCTION

The global crisis resurrected deep-rooted concerns about the functioning of the international Monetary system (IMS). Despite its relative stability, the current "non-system" has the inherent weaknesses of a setup with a dominant country-issued reserve currency, wherein the reserve issuer runs fiscal and external deficits to meet growing world demand for reserve assets and where there is no ready mechanism forcing surplus or reserve-issuing countries to adjust. The problem has amplified in recent years in line with a sharp rise in the demand for reserves, reflecting in part emerging markets' tendency to self-insure against costly capital account crises. On the demand side, it explores alternative insurance arrangements that could mitigate the precautionary demand for reserves. On the supply side, it assesses a menu of alternative reserve assets that could offer sustained stability and efficiency (Lago, Duttagupta and Goya, 2019).

Increased financial globalization has renewed the debate on monetary policy and frameworks in open economies. The rising sensitivity of domestic credit and asset prices to external influences has heightened concerns about central banks' ability to manage domestic financial conditions. Monetary policy is a deliberate action of the Central Bank of Nigeria to use its monetary policy instruments such as interest rates, open market operations, liquidity ratios, cash reserve ratios, statutory reserves, and moral suasion amongst others to regulate and control the availability of money in circulation in the economy (CBN, 2014).

In Nigeria, monetary policy has been based on a medium-term perspective framework in recent times. The shift was to free monetary policy implementation from the problem of time inconsistency and minimize over-reaction due to temporary shocks. Policies have ranged from targeting monetary aggregates to monitoring and manipulating policy rates to steer the interbank rates and by extension other market rates in the desired direction (Okoro, 2015; Uchendu, 2019). The extent these strategies have helped to stabilize the economic and engender growth is of immense concern to policy makers and academics.

Monetary policy can be described as the central banks action to influence the availability and the cost of money and credit as a means of promoting national economic goals (Patrick and Xavier, 2000). Specifically, it can be defined as a combination of measures designed to regulate the value, supply and cost of credit in an economy in consonance with the expected level of economic activity (Olekah, 2016). Uchendu (2019) posits that monetary policy is the use of the instruments at the disposal of the monetary authorities to influence the availability and cost of credit/money with the ultimate objective of achieving price stability. In the same vein, Okafor (2019) also argues that monetary policy is a blend of measures and or set of instruments designed by the central bank to regulate the value, supply and cost of money consistent with the absorptive capacity of the economy or the expected level of economic activity without necessarily generating undue pressure on domestic prices and the exchange rate.

The centrality of these definitions is that monetary policy is a measure designed to influence the availability, volume and direction of money and credit to achieve the desired economic objectives. The set objectives are achieved through the use of monetary policy instruments (Ajayi, 2017). The policy tools under the control of central bank are not however directly linked to the policy objectives. Consequently, the usual practice is that intermediate target such as money supply; interest rate and bank credit are employed to achieve monetary policy objectives. Generally developing a practical understanding of how monetary policy action transmits to the economy remains a day to day challenge to the central banks.

In Nigeria, monetary policy formulation is the sole prerogative of the Monetary Policy Committee (MPC) of the Central Bank of Nigeria (CBN). The MPC which was formally consolidated in 1999, consisting of the governor of the bank as the chairman, the four deputy governors of the bank, two members of the board of directors of the bank, three members appointed by the president and two members appointed by the governor. The MPC has the responsibility for formulating monetary and credit policies. The traditional function of

Central Bank of Nigeria is to ensure financial stability, favourable macroeconomic environment and safe guard the external value of Naira.

There is no consensus among economist as to whether government intervention through the use of monetary policy will bring about economic stabilization. This disagreement divided the economy into different schools of thought. They are, the classical school, the Keynesian school, and the monetarist school. Each of them has its view on how variation in monetary aggregates could affect the economic stabilization.

The classicists believe that given the equation of exchange and stability in the velocity of money plus the assumption that economy operates at full employment, the change in money supply will only affect price without any effect on real demand, investment and output. The Keynesians on the other hand believe that variations in money supply could lead to an increase or decrease in interest rate. A decrease in interest rate will affect aggregate investment and enhance aggregate income and output. This is based on the belief that interest rate is the key determinant of investment in the market economy. The investment process involves the employment of factors such as labour and capital which lead to increase in total employment.

The monetarists base their views on money supply as the key factor affecting the wellbeing of the economy. They believe that an increase in money supply will lead to an increase in nominal demand, and where there is excess capacity they believe that output will be increased. In the long-run, the monetarist position is that the increase in money supply will be inflationary without any effect on investment, employment and aggregate demand.

In spite of these controversies, the Nigeria government in collaboration with its monetary authority still adopts monetary policy to regulate the economy. Thus adopting monetary policy in manipulating the fluctuations experienced so far in the economy, Central Bank of Nigeria (CBN) undertake both contractionary and expansionary measures. The reason for this action is because monetary policy has been successfully being introduced and implemented in developing economy. Therefore, it becomes necessary to examine how variations in monetary policy (money supply) can be used to influence output. The examination will cover a period of twenty-one years.

One of the major objectives of monetary policy in Nigeria is stabilization of economic growth. Nigerian government has adopted various monetary policies through Central Bank of Nigeria over years to achieve economic growth. Despite the increasing emphasis on manipulation of monetary policy in Nigeria, the problem surrounding its economic growth still persists. Such problems include high unemployment rate, low investment, high rate of

inflation and unstable foreign exchange rate. These perceived problems are being claimed to have caused a fast decline in the economic growth of Nigeria. It, therefore, becomes necessary to highlight the monetary policy in Nigeria and examine the extent to which it has actually contributed to the growth in the economy. Despite the increasing emphasis on manipulation of monetary policy in Nigeria, the problem surrounding its economic growth still persists. This concern has exerted pressures on the view to finding possible solutions. As a result of this the structural adjustment program was introduces in the economy and to liberalized the financial system. The failure of the monetary policy in curbing price instability has caused growth instability as Nigeria's record of growth and development has been very poor. An examination of the summary of the long-term pattern reveals the following secular swings: 1965-1968 Rapid Decline (Civil War Years), 1969-1971 Revival, 1972- 1980 Boom, 1981-1984 crash, 1985 – 1991 Renewed Growth, 1992-2010 Wobbling, (CBN, 2010).

Moreso, despite the various monetary regimes that have been adopted by the Central Bank of Nigeria over the years, inflation still remains a major threat to Nigeria's economic growth. Nigeria has experienced high volatility in inflation rates. Since the early 1970's, there has been more than three major episodes of high inflation in excess of 30 percent. The growth of money supply is correlated with this high inflation episode because money growth was often in excess of real economic growth. More so, the dualistic nature of financial and product market in Nigeria constitutes a fundamental constraint militating against the formulation and efficient implementation of monetary policy. The informal sector in Nigeria accounts for about 30 percent of the GDP, thus the existence of a large informal credit market and exchange rate market in Nigeria has many implications for the transmission mechanism of monetary policy. Furthermore, the payment system is a vital link between the financial and the real sector of the economy. The payment system in Nigeria is predominantly cash and the prominence of cash for transaction purposes increases the volume of money/currency in circulation which renders monetary control difficult.

Another problem is the power response of the financial system to monetary policies control measures which has to do with lack of transparency in the separation of financial intermediaries. These problems have necessitated further for solution. The problems of monetary management with particular reference to monetary policy and foreign exchange management in the Nigerian economy include the following (a) Inadequacy of monetary instruments, (b) Under development of the money and capital markets, (c) low interest rate structure, (d) slow monetary transmission, (e) High unemployment rate, (f) Low investment, (g) High rate of inflation, and (h)unstable foreign exchange rate.

The main objective of the study is to assess the effectiveness of the monetary policies in Nigeria and its role in returning the economy backs to equilibrium after an inflationary imbalance. Specifically, this study:

i. investigated the impact of monetary policy on Nigeria economy.
ii. examined the influence of money supply on gross domestic product in Nigeria
iii. determined the influence of interest rate on Gross Domestic Product in Nigeria.

The rest of the paper discussed the related literatures, stated the methodology, analysed and interpreted data, summarised and discussed the findings, as well as concluded and made necessary policy recommendations.

2.0 REVIEW OF RELATED LITERATURE

Classical View of Monetary Policy

The classical economists' view of monetary policy is based on the quantity theory of money. The quantity theory of money is usually discussed in term of fisherian equation of exchange, which is given by the expression MV = PY. In the expression, M denotes the supply of money over which the Federal Government has some control; V denotes the velocity of circulation which is the average number of times a currency is spent on final goods and services over the course of a year; P denotes the price level GDP. Hence PY represents current nominal GDP. The equation of exchange is an identity which states that the current market value of all final goods and services (nominal GDP) must equal the supply of money multiplied by the average number of times a currency is used in transaction in a given year.

The classical economist believes that the economy is always at or near the natural level of real GDP. Thus, they assume that in the short run, the Y in the equation of exchange is fixed. They further argue that the velocity of circulation of money tends to remain constant. So that V can also be regarded as Fixed. Given that both Y and V are fixed, it follows that if the Central Bank of Nigeria (CBN) were to engage in expansionary (or contractionary) monetary policy, it will lead to an increase (or decrease) in money supply (M), the only effect would be to increase (or decrease) the price level P, in direct proportion for the change in money supply (M). In other words, expansionary monetary policy can only lead to inflation, and contractionary monetary policy can only lead to deflation of the price level.

Keynesian View of Monetary Policy

Keynesian theory did not buy the notion that the relationship between money and price is direct and proportional. They share the view that it is indirect through the rate of interest. Also they reject the notion that the economy is always at or near the natural level of real GDP so that Y in the equation of exchange can be regarded as fixed. They also reject the proposition that the velocity of circulation of money is constant. Keynesians believe that expansionary monetary policy increases the supply of loanable funds available through banking system, causing interest rates to fall. With lower interest rate, aggregate expenditures on investment and interest sensitive consumption goods usually increase, causing real GDP to rise. Hence, monetary policy can affect real GDP indirectly.

The Monetarist View of Monetary Policy

Monetarist is a school of thought led by Milton Friedman. This school of thought is a modern variant of classical macroeconomics. They developed a subtler and relevant version of the quantity theory of money. Like any school of thought, Friedman (1963) emphasized on the supply of money as the key factor affecting the well-being of the economy and as well, accepted the need for an effective monetary policy to stabilize an economy. He also has the notion that, in order to promote steady growth rate, money supply should grow at a fixed rate, instead of being regulated and altered by the monetary authority(ies). Friedman equally argued that since money supply might be demanded for reasons other than anticipated transaction, it can be held in different forms such as money, bonds, equities, physical goods and human capital. Each form of this wealth has a unique characteristic of its own and a different yield. These effects will ultimately increase aggregate money demand and expand output. The Monetarists acknowledge that the economy may not always be operating at the full employment level of real GDP. Thus, in the short-run, monetarists argue that expansionary monetary policies may increase the level of real GDP by increasing aggregate demand. However, in the long-run, when the economy is operating at the full employment level, they argue that the quantity theory remains a good approximation of the link between the supply of money, price level, and the real GDP. Also, in the long-run expansionary monetary policy only lead to inflation and do not affect the level of real GDP.

Monetary policy presupposes a form of relationship between the supply and demand for money on one hand, and other aggregate economic variables like general price level, output, income, savings and investment on the other hand. (Anyanwu, 1996). This relationship influences the effectiveness of the mix of policy instrument. The monetarist view has Milton Friedman as the most profound advocates, another is the Keynesian school and lastly the one

represented by Raddiffe. Friedman is of the view that changes in the stock of money are closely related to changes in the price level and through it, on other general economic aggregates. The amount of money the public desires to hold relative to its income distorts the rigidity of the relationship. Lags that exist between the formulation and implementation of monetary policy is a constraint on its effectiveness. The determination of real output, general price level and other Macro-economic variables is the Keynesian postulation in the monetary transmission mechanism. According to Keynesians, national income depends on the interplay between expected rate of profit and interest rate. The rate of interest is determined by supply of and the demand for money. Equilibrium income depends on two conditions in this model, that is: (1) Planned saving must be equal to planned investment, and, (2) At any point in time, supply of money must equal demand for money. Rate of interest influences Savings, investment, demand for and supply of money (See Anyanwu, (1996) for this and related issues). Within this content, monetary policy will consist of altering the rate of interest to achieve the desired trend in the economy. The effectiveness of monetary policy will then depend on the interest elasticity of demand for money. Here, monetary policy is likely to be effective, the less interest elastic the demand for idle balances, the less interest elastic the investment and consumption schedule that depend on active or transaction balances. Therefore, the effectiveness will be in combating depression rather than inflation (Anyanwu, 1996). Monetary expansion includes relaxation in credit rationing by the banking sector resulting to an increase in investment, income and aggregate consumption, Increase in income increase savings which will further increase the bank's ability to give loans and advances to the business sector. The effectiveness of the transmission mechanism lies on the stock of money which in turn increases effective demand. The Central Bank has at its disposal a number of control mechanisms usually referred to as "tools of monetary policy". Some of these tools are quantitative while others are selective Sanusi (2002).

Empirical Review

Aliyu and Daida (2017) investigated the effect of monetary policy on bank performance in Nigeria. Bank rate, inflation rate, and exchange rate are total credit enhancing while liquidity ratio and cash reserve ratio(,,,this statement is not complete). They further add that monetary policy instruments are not effective to stimulate credit in the long run, while bank total credit is more responsive to cash reserve ratio.

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.

Agbokhese and Asekone (2016) appraised the impact of monetary policy on bank credit creation in Nigeria between 1980-2010 found that there was a positive linear relationship between total credit creation and the explanatory variables, total credit creation, total deposit and treasury bill rate while reserve requirement ratio and interest rate had a negative relationship with total credit creation. They further add that any monetary policy by the monetary authorities to control credit that emphasizes on reserve requirement could not be effective as the banks could afford to raise and keep substantial deposit as reserve contrary to the action of the monetary authorities.

Fasanya et al. (2013) examined the impact of monetary policy on economic growth using time series data covering the period 1975-2010. The effects of stochastic shocks of each of the endogenous variables were explored using Error Correction Model (ECM). Findings of the study reveal a long run relationship among the variables. Also, the core finding of the study shows that inflation rate, exchange rate and external reserve are significant monetary policy instruments that drive growth in the economy.

Nampewo et al (2013) investigated the sectoral effects of monetary policy in Uganda over the period 1999 to 2011 via the interest rate, bank credit and the exchange rate channels by employing pairwise granger causality test and recursive VAR. They analyzed sectors adjudged to be the key drivers of Uganda's GDP growth namely; agriculture, manufacturing and service sectors. They found evidence that a positive shock in exchange rates result in increase in output of agriculture and service sectors, while the output in the manufacturing sector declined. They found evidence that the exchange rate channel is the most effective monetary policy transmission channel to all the three sectors studied, while the interest rates and bank credit channels remain relatively weak, especially within the manufacturing sector.

In a related study, Adeoye and Saibu (2014) analysed the effects of monetary policy shocks using changes in various monetary policy instruments on exchange rate volatility in Nigeria.

The results from the paper show that both real and nominal exchange rates in Nigeria have been unstable during the period under review. In the short, the variation in the monetary policy variable explains the movement/behaviour of exchange rate through a self-correcting mechanism process with little or no intervention from the monetary authority (CBN). It was concluded that inflation rate, reserves, interest rate and money supply depreciate and cause volatility in nominal exchange rate which further reinforce other findings that monetary policy is crucial to exchange rate management in Nigeria.

Udude (2014) examined the impact of monetary policy on the growth of Nigeria economy between the period of 1981 and 2012. Applying co-integration test, the result shows that there is a positive relationship between money supply and economic growth though not statistically insignificant.

Onyeiwu (2012) viewed the impact of monetary policy on the Nigeria economy using Ordinary Least Squares. The result showed that monetary policy represented by money supply exert a positive impact on GDP growth and balance of payment but negative impact on rate of inflation and he concluded that CBN monetary policy is effective in regulating the liquidity of the economy which affects some macroeconomic variables such as output, employment and prices.

Owalabi and Adegbite (2014) examined the impact of monetary policy on industrial growth in Nigerian economy using multiple regression analysis. They analyzed the relationship between manufacturing output, treasury bills, deposit and lending, and rediscount rate and industrial growth, and found that the variables have significant effects on the industrial growth.

Micheal and Ebibai (2014), examined the impact of monetary policy on selected macroeconomic variables such as gross domestic product, inflation and balance of payment in Nigeria using OLS regression analysis. The result shows that the provision of investment friendly environment in Nigeria will increase the growth rate of GDP.

Akujobi (2012), investigated the impact of monetary policy instrument on economic development of Nigeria using multiple regression technique and found that treasury bill, minimum rediscount rate and liquidity rate have significant impact on economic development of Nigeria.

Okwo, et al (2012) examined the effect of monetary policy outcomes on macroeconomic stability in Nigeria. The study analyzed gross domestic product, credit to the private sector, net credit to the government and inflation using OLS technique. None of the variables were significant, which suggested that monetary policy as a policy option may have been inactive in influencing price stability.

Bernhard (2013) examined the channels of monetary transmission mechanism in Nigeria using Granger casualty test to estimate the relationship between the various channels and the selected macroeconomic aggregates. The study shows that three channels of transmission were functional for inflation targeting. They include the interest rate, exchange rate and credit channels.

Okoro (2013) examined the impact monetary policy on Nigeria economic growth by testing the influence of interest rate, inflation, exchange rate, money supply and credit on GDP. Augumente Dickey Fuller (ADF) test, Philips–Perron Unit Test, Co-integration test and Error Correction Model (ECM) techniques were employed. The results show the existence of long–run equilibrium relationship between monetary policy instruments and economic growth.

Umaru and Zubairu, (2012) investigated the impact of inflation on economic growth and development in Nigeria between 1970-2010 through the application of Augmented Dickey-Fuller technique in testing the unit root property of the series and Granger causality test of causation between GDP and inflation. The results of unit root suggest that all the variables in the model are stationary and the results of Causality suggest that GDP causes inflation and not inflation causing GDP. The results also revealed that inflation possessed a positive impact on economic growth through encouraging productivity and output level and on evolution of total factor productivity. A good performance of an economy in terms of per capita growth may therefore be attributed to the rate of inflation in the country.

Gul, Mughal, Rahim (2012) reviewed how the decisions of monetary authorities influence the macro variables such as GDP, money supply, interest rates, exchange rates and inflation. The method of least squares is used in the data. The sample was taken from 1995-2010 and included observations are 187. Result shows that interest rate has negative and significant impact on output. Tight monetary policy in term of increase interest rate has significant negative impact on output. Money supply has strongly positive impact on output that is positive inflation and output is negatively correlated, exchange rate also have negative impact on output which is show from the values.

3.0 METHODOLOGY

Research Design

The study adopted the descriptive survey research design. This involves the collection of data for the purpose of describing and interpreting the existing situation. The data reflect the impact of monetary policy on economic growth in Nigeria. This research work is covers the period between 1980-2020..

Specification of model

To achieve the objectives of this study and test the hypotheses the following regression model was developed to capture Adegbite and Alabi (2013), whom have regressed output of industrial production, inflation, money supply, exchange rate, and interest rate against economic growth proxied by GDP. The present study modified both models to include monetary policy rate in order to capture the core main tool of monetary policy that influences all other monetary policy targets. The study also replaced external reserves and output of industrial production with investment because investment is theoretically postulated to have direct influence from interest rates (lending and deposit rates), which the CBN monetary policy rates directly influence.

The model of this study is functionally represented as follows:

GDP = f (MPR, MS, EXCH, INT, INV) ……..……(1)

The above model was transformed into econometric equation as shown below;

$LnGDP = \beta 0 + \beta 1\ MPR + \beta 2\ MS + \beta 3EXCH + \beta 4INT + \beta 5INV + \mu$

Adopted from: Ufoeze, Odimgbe and Ezeabalisi (2018)

Where

GDP = Gross Domestic Product at current market prices

MPR = Monetary policy rate

MS = Money supply proxied by the broad money supply (M2)

EXCH = Real exchange rate

INT = Interest rate proxied by bank lending rate.

INV = Investment to the productive sector proxied by Credit to the private

μ = Error term

Ln = Natural Logarithm of the variables used to smoothen possible scholastic effect from variables at level. β0 is the constant while β1 – β5 are the coefficients of the relationships between the independent variables and the dependent variable. μ is the stochastic error term for the time period covered by the study.

Apriori Expectations: $\beta1<0$, $\beta2>0$, $\beta3<0$, $\beta4<0$, $\beta5>0$.

Source and Method of data Collection

This study made use of secondary data obtained from the statistical bulletin of the Central Bank of Nigeria from the period of 1986-2020.

Data Analysis and Estimation Techniques:

Ordinary Least Square (OLS)

Ordinary Least Square (OLS) was used to analyze the data. Historical data covering a period of 34 years are to be estimated using Auto correlation test, it often occurs in time series data and it can make an Ordinary Least Square (OLS) inefficient for drawing inferences. Heterskedasticity test is also a factor commonly associated with time series data. It affects the standard error as well as the t-statistics. Bound test is a test for measuring long run relationship. It measures whether a long run relationship exists between the independent variables and the dependent variable.

Unit Root Test

This is the pre Co-integration test. It was used to determine the order of integration of a variable that is how many times it has to be differenced or not to become stationary. It is to check for the presence of a unit root in the variable i.e. whether the variable is stationary or not. The null hypothesis is that there is no unit root. This test is carried out using the Augmented Dickey Fuller (ADF) technique of estimation. The rule is that if the ADF test statistic is greater than the 5 percent critical value we accept the null hypothesis i.e. the variable is stationary but if the ADF test statistic is less than the 5 percent critical value i.e. the variable is non-stationary we reject the null hypothesis and go ahead to difference once. If

the variable does not become stationary at first difference, we differentiate twice. However, it is expected that the variable becomes stationary at first difference.

4.0 DATA ANALYSIS AND RESULTS

Data analysis:

Table 1: ADF Unit Root test for Stationarity (with constant, no trend)

Variables		At Level 1(0)	First Difference 1(1)	Order of Integration	Remark
LnGDP		-1.311578	-4.115498*	1(1)	Stationary
MPR		-2.157415	-5.426151*	1(1)	Stationary
LnMS		-1.626638	-2.389475		Non Stationary
EXCH		-0.566438	-3.325049**	1(1)	Stationary
INT		- 2.664755***	-5.148422*	1(1)	Stationary
LnINV		-0.349929	-3.740636*	1(1)	Stationary
Critical values	1%	-3.7076	-3.7204		
	5%	-2.9798	-2.9850		
	10%	-2.6290	-2.6318		

Notes:

Null hypothesis is the presence of unit root.

*1% level of significance, **5% level of significance, ***10% level of significance.

Unit roots tested at 5% level of significance.

Decision rule – The critical value should be larger than the test statistical value for unit root to exist

Source: Researcher's Estimation using Eviews 10

The results of the unit root test show that none of the critical values of the variables are greater than the ADF statistical values at level. However, LnGDP, MPR, EXCH, INT and INV are stationary at first difference [1(1)]. Only the LnMS is stationary at second difference [1(2)]. Since most of the variables are integrated at the same order, that is, at first order, we therefore suspect evidence of co-integration in the model, the result is presented below.

Table 2: Co-integration Test for Long-run Relationship between Monetary Policy and GDP

Sample: 1986 2019

Included observations: 33

Test assumption: Linear deterministic trend in the data Series: LnGDP MPR LnMS EXCH INT LnINV

Lags interval: 1 to 1

Eigenvalue	Likelihood Ratio	5 Percent Critical Value	1 Percent Critical Value	Hypothesized No. of CE(s)
0.861805	126.0999	94.15	103.18	None **
0.686450	74.64356	68.52	76.07	At most 1 *
0.579114	44.48888	47.21	54.46	At most 2
0.332831	21.98864	29.68	35.65	At most 3
0.257224	11.46612	15.41	20.04	At most 4
0.133804	3.734749	3.76	6.65	At most 5

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

L.R. test indicates 2 co-integrating equation(s) at 5% significance level Source: Researcher's Estimation using Eviews.

The results of the multivariate co-integration tests were validated using the Johansen (1991, 1995) approach. The Johansen's framework provides a number of co-integrating equations and estimates of all co-integrating vectors in the multivariate case. The Johansen co-integration test result is presented in Tables 2. The likelihood ratios were conducted to establish the number of co-integrating relations in each of the equations. Test results indicate the existence of two co- integrating equations in the equations at the 1% and 5% significance level. Thus, we conclude that there is long-run relationship between monetary policy and economic growth in Nigeria.

Table 3: Test of the Direction and Significance of the Relationship between Monetary Policy and GDP

Dependent Variable: LnGDP
Sample: 1986 2020
Included observations: 34

Variable	Coefficient	Std. Error	t-Statistic	Prob.
MPR	0.017958	0.015539	1.155698	0.2602
LnMS	1.305625	0.383575	3.403832	0.0025
EXCH	-0.005700	0.002409	-2.366476	0.0272
INT	0.002401	0.015245	0.157502	0.8763
LnINV	0.223778	0.346292	0.646212	0.5248
C	1.341845	0.485953	2.761267	0.0114
R-squared	0.985763			
Adjusted R-squared	0.982527			
F-statistic	304.6520			
Prob(F-statistic)	0.000000			
Durbin-Watson stat	0.924534			

Source: Researcher's Estimation using Eviews.

From Table 3 above, the adjusted coefficient of determination (Adjusted R2) shows that about 98% of the changes in economic growth can be explained by monetary policy. This implies that monetary policy can be effectively used to control Nigerian economy. Additionally, the F-statistics (304.6520) has probability less than 5%, which indicate that monetary policy variables included in the model has combined significant effect on economic growth in Nigeria. This supports the result of the Adjusted R2 and further confirms that monetary policy is a veritable tool for price stability and improved output.

However, the contributions and significance of the individual coefficients of the model is used to test for hypotheses for this study using the t-test. Each of the hypotheses is tested with the coefficient and the t-values.

H01: Monetary policy rate has no significant effect on GDP in Nigeria

The coefficient of the MPR is 0.017958, which means that monetary policy rate has positive relationship with GDP. This indicates that a unit increase in MPR will lead to 1.7% increase in GDP. The t value is 1.155698 with probability value of 0.2602. Since the p value is not less than 5%, we do not reject the null hypothesis and conclude that monetary policy rate has no significant effect on GDP in Nigeria.

H02: Money supply has no significant effect on GDP in Nigeria.

The coefficient of the LnMS is 1.305625, which means that broad money supply has positive relationship with GDP. This indicates that a unit increase in LnMS will lead to 130% increase in GDP. The t value is 3.403832 with probability value of 0.0025. Since the p value is less than 5%, we reject the null hypothesis and conclude that money supply has significant effect on GDP in Nigeria.

H03: Exchange rate has no significant effect on GDP in Nigeria.

The coefficient of the LnMS is -0.005700, which means that the exchange rate has negative relationship with GDP. This indicates that a unit increase in EXCH will lead to 0.57 % fall in GDP. The t value is -2.366476 with probability value of 0.0272. Since the p value is less than 5%, we reject the null hypothesis and conclude that exchange rate has significant effect on GDP in Nigeria.

H04: Interest rate has no significant effect on GDP in Nigeria.

The coefficient of the MPR is 0.002401, which means that the interest rate has positive relationship with GDP. This indicates that a unit increase in MPR will lead to 0.2% increase in GDP. The t value is 0.157502 with probability value of 0.8763. Since the p value is not less than 5%, we do not reject the null hypothesis and conclude that interest rate has no significant effect on GDP in Nigeria.

H05: Investment growth has no significant effect on GDP in Nigeria.

The coefficient of the MPR is 0.223778, which means that there investment has positive relationship with GDP. This indicates that a unit increase in MPR will lead to 22% increase in GDP. The t value is 0.646212 with probability value of 0.5248. Since the p value is not less than 5%, we do not reject the null hypothesis and conclude that investment has no significant effect on GDP in Nigeria.

Table 4: Pairwise Granger Causality Tests

Null Hypothesis:	Obs	F-Statistic	Probability	Interpretation
MPR does not Granger Cause GDP	34	2.15534	0.14080	No causality
GDP does not Granger Cause MPR	34	2.31754	0.12318	
MS does not Granger Cause GDP	34	4.57481*	0.02243	Uni-directional
GDP does not Granger Cause MS	34	0.30730	0.73868	causality (MS --> GDP)
EXCH does not Granger Cause GDP	34	1.75029	0.19813	No causality
GDP does not Granger Cause EXCH	34	2.91096	0.07659	
INT does not Granger Cause GDP	34	0.45850	0.63841	Uni-directional
GDP does not Granger Cause INT	34	5.20179*	0.01462	causality (GDP --> INT)
INV does not Granger Cause GDP	34	5.37514*	0.01303	Uni-directional
GDP does not Granger Cause INV	34	1.11691	0.34597	causality (INV --> GDP)

Source: Researcher's Estimation using Eviews.

At 5% level of significance, we found the following causal relations:

i. There is no causality between monetary policy rate and economic growth in Nigeria.

ii. Money supply causes economic growth in Nigeria.

iii. There is no causality between exchange rate and economic growth in Nigeria.

iv. Economic growth (GDP) causes interest rate in Nigeria.

v. Investment causes economic growth in Nigeria.

5.0 SUMMARY OF FINDINGS, DISCUSSION, CONCLUSION AND POLICY RECOMMENDATION

Summary of Findings

The study examined the impact of monetary policy on economic growth in Nigeria. This research work covers the period between 1986-2020. The study produced fundamental questions, and constructed relevant hypothesis which reflected the relation of the positive effects between study factors. The convincing findings that emerged from this study contributed to solve the study problem, gave logical answers to the study questions, and interpreted the hypotheses. The study reviewed some literatures that covered different models and theories on that focused on the research topic. The chapter also reviewed numerous works empirically done in the area of study.

Findings from the research showed that;

- There is no causality between monetary policy rate and economic growth in Nigeria.
- Money supply causes economic growth in Nigeria.
- There is no causality between exchange rate and economic growth in Nigeria.
- Economic growth (GDP) causes interest rate in Nigeria.
- Investment causes economic growth in Nigeria.

Discussion

The study found that there is no causality between monetary policy rate and economic growth in Nigeria. This is related to the study of Balogun (2007) using a simultaneous equation model to test the hypothesis of monetary policy effectiveness in Nigeria found that rather than promoting growth, past domestic monetary policy has been a source of stagnation and persistent inflation in the country.

The study found that money supply causes economic growth in Nigeria. This corroborate the findings of Ufoeze, et al (2018) that investigated the effect of monetary policy on economic growth in Nigeria using the Ordinary Least Squared technique, the unit root and co-integration tests. The findings of the study revealed that money supply was found to have significant positive effect on growth in Nigeria.

The study also found that there is no causality between exchange rate and economic growth in Nigeria but in contrary, the result of Omolade and Ngalawa (2017) shows that that

exchange rate has some influences on the monetary policy transmission mechanism and economic growth.

The study still found that economic growth (GDP) causes interest rate in Nigeria. An increase in real gross domestic product (i.e., economic growth), ceteris paribus, will cause an increase in average interest rates in an economy. In contrast, a decrease in real GDP (a recession), ceteris paribus, will cause a decrease in average interest rates in an economy. In relation to the result Obamuyi and Olorunfemi, (2011) on implications of financial reform and interest rate behaviour on economic growth in Nigeria found that the behaviour of interest rate is important for economic growth in view of the empirical nexus between interest rates and investment, and investment and growth.

The study still found that Investment causes economic growth in Nigeria. this corroborates the study of Micheal and Ebibai (2014), that examined the impact of monetary policy on selected macroeconomic variables such as gross domestic product, inflation and balance of payment in Nigeria using OLS regression analysis. The result shows that the provision of investment friendly environment in Nigeria will increase the growth rate of GDP.

Conclusion

The study has investigated the effect of monetary policy on economic growth. Monetary policy is found to have long-run relationship with the economic growth and can be effectively used to control Nigerian economy and thus is a veritable tool for price stability and improves output. In addition, the core finding of this study showed that monetary policy rate, interest rate, and investment have insignificant positive effect on economic growth in Nigeria. Money supply however has significant positive effect on growth in Nigeria. Exchange rate has significant negative effect on GDP in Nigeria. Money supply and investment causes economic growth, while economic growth causes interest rate in Nigeria. On the overall, monetary policy explains 98% of the changes in economic growth in Nigeria. However, it is shown that money supply and investment cause economic growth and economic growth causes interest rate in Nigeria.

Policy Recommendations

Based on the findings made in the course of this study, the following recommendations are hereby suggested below:

1. The connection between monetary expansions and real economic growth capitalizes on imperfections in the public's information about prices. People respond inefficiently in the sense that under perfect information, they would not have altered their behaviour. At best, one party gains at another's expense. A central bank may periodically exploit this connection, but frequent attempts, as some seem to advocate, may ultimately distort the allocation of resources from productive uses to protective enterprises. Countries with high inflation rates tend to have larger financial sectors relative to GDP, not faster rates of economic growth in the long-run, money growth seems to translate only into proportionally higher inflation; it does not foster real economic growth or employment. Ultimately, a central bank can best contribute to a nation's economic health by eliminating the price uncertainties associated with inflation. However, if the central bank restrains from interventions, sharp fluctuations may result in the market.
2. Monetary policies should be used to create a favourable investment climate by facilitating the emergency of market based interest rate and exchange rate regimes that attract both domestic and foreign investments, create jobs, promote non-oil export and revive industries that are currently operation far below installed capacity.
3. In order to strengthen the financial sector, the Central Bank has to encourage the introduction of more financial instruments that are flexible enough to meet the risk preferences and sophistication of operators in the financial sector.
4. For monetary policy to have a desired impact on the real economy and inflation, which is the fundamental objective of monetary policy, it is essential that changes in the short-term market interest rate should ultimately transform into changes in other interest rates in the economy (that is, interest rate changes are passed through to retail interest rates for loans and deposits), which then influence the overall level of economic activity and prices.
5. It is therefore prudent that in seeking to promote economic growth, Nigeria's banks should be committed to the mission of price stability, as well as improving the regulatory and supervisory frameworks to secure a strong financial sector for efficient intermediation.

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