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An Evaluation of Monetary Policy and Its Implications for Nigerian Economic Growth

Atayi Abraham Vincent[1], Rahila Timothy Dantong[2], Chinshaka Ayuba Sitdang[3], and Abdullahi Aishatu[4]

[1,3]Department of Economics, Plateau State University Bokkos, Nigeria.

[2]Department of Political Science, Plateau State University Bokkos, Nigeria

[4]Department of Statistics, Central Bank of Nigeria, Nigeria.

***Abstract*—** This study dealt with the evaluation of monetary policy and its effects on economic growth in Nigeria from the period (1995-2021). The Nigerian government has adopted various monetary policies through Central Bank of Nigeria over years to achieve economic growth. The study made used of secondary data involving time series. The technique of analysis used for the estimation is the Granger Causality and the Autoregressive Distributed Lag Model (ARDL). The regression results show that shows that a negative and an insignificant relationship existed between MS and economic growth in Nigeria. Its shows that a unit change in MS will lead to 825% decrease in economic growth in Nigeria at 5%. It further indicates that there exist a positive and a significant relationship between Monetary Policy and economic growth in Nigeria and that the overall significance is measured by the value of the probability F-statistic which is 0.000000 and is less than 0.05 significant levels. The study conclude that Monetary Policy can only contribute to growth significantly when properly manages by the monetary authority and that the central bank must make sure that its blocked all the channel of hoarding of the naira note by the public through the design of new naira note from time to time. This study recommends among other things that Government through the CBN should regulate the economy using monetary instrument such as open market operation, Suitable bank reserved requirement etc. when there is inflation to reduce it, so as to ensure stable economic growth.

***Keywords*—** Monetary Policy, Economic Growth, inflation, Granger Causality, ARDL and Nigeria.

INTRODUCTION

Nigeria is a growing nation that faces numerous economic difficulties. The Nigerian central bank was established in response to the requirement for a centralized, legally-mandated body to oversee bank operations and the country's economy. Monetary policy, as defined by the Central Bank of Nigeria (2021), is an arrangement or deliberate measure intended to control the amount, cost, and value of money in an economy in accordance with the anticipated level of economic activity. To control the amount of money in circulation, either directly or indirectly, the monetary authority through the central bank employs a variety of monetary policy tools, such as the money supply, lending interest rate, cash reserve ratio, discount rate, open market operation, and monetary policy rate.

The CBN Act of 1958 created the Central Bank of Nigeria, and on July 1, 1959, it officially opened for business (Wisdom, 2022). Since then, the monetary policy of the central bank has regulated the economy. Nigeria's economy, which depends heavily on imports, experiences economic volatility, erratic business cycles, and stagnant growth. Usually, this leads to disequilibrium in the balance of payments, inflation, unemployment, and inefficiency. In order to ensure that resources are distributed and used efficiently and to enhance citizen welfare, the government has, in one form or another, regulated and controlled the economy. The Nigerian government, like that of any other developing nation, implements three different public policy frameworks to achieve the goals of resource allocation and income distribution. These are some examples of public policy tools: loan rates, monetary policy, etc. The Nigerian government has historically relied on monetary policy to accomplish a number of macroeconomic goals, such as employment, economic growth and development, equilibrium in the balance of payments, and a generally stable level of prices (Frank, Ogoja & Ayaundu, 2020). Monetary conditions are frequently employed to assess central banks' positions on monetary policy. According to Kingsley and Akinlosotu (2018), monetary circumstances are the result of interest rates, inflation, and exchange rates acting together on the economy. These are the main elements that monetary policy uses to boost economic activity. Monetary conditions are designed to promote economic growth during a period of economic downturn. On the other hand, when economic activity

goes to the exact opposite, monetary conditions hinder growth; this is known as contractionary monetary policy. The "natural" or "equilibrium" rate, often known as the neutral monetary policy, is the monetary state that neither promotes nor inhibits economic growth. If the economy is experiencing stable, sustained growth, low inflation, and full employment, then neutral monetary policy is both appropriate and effective. The goal of the activity is to control the amount of money in the economy by adjusting the money supply and/or interest rates. Therefore, countries have sought to use monetary policy as a tool for economic management to promote sustainable economic growth and development. Formal explanations of how money influences economic aggregates date back to Adams Smith and were later promoted by monetary economists. Monetary authorities are tasked with using monetary policy to expand their economies since the role of monetary policy has been shown to influence macroeconomic goals such as price stability, economic growth, balance of payments equilibrium, and a host of other goals (Ufoeze, et al 2018). In order to fight inflation and preserve price stability, direct monetary tools including cash reserve requirements, credit limitations, managed interest and exchange rates, and special deposits were used before 1986. The primary purpose of setting interest rates at comparatively low levels was to encourage growth and investment. Through the availability of credit, money influences aggregate spending volumes directly. On the other hand, money indirectly affects aggregate spending volumes via influencing interest rates. In addition, low interest rates cause the money supply to expand, and this expansion is linked to high inflation. As a result, the demand for money influences interest rates, which in turn influences the demand for investments, which in turn influences the variety in income. In order to accomplish certain defined macro-economic policy goals, monetary policy is thought to be the primary tool for economic stabilization. It is used to measure, regulate, and control the amount, cost, availability, and direction of money and credit within an economy (Salami & Toriola, 2021).

In order to accomplish a number of economic goals, such as employment, economic growth and development, balance of payments stability, and a generally steady level of prices, the Nigerian government has historically relied on monetary policy. Even with the growing focus on monetary policy manipulation in Nigeria, the issue of the country's slow economic growth still exists. According to Nwoko, Ihemeje, and Anumadu (2016), referenced in Salami & Toriola (2021), these issues include a high unemployment rate, poor investment, a high rate of inflation, and an unstable foreign exchange rate, all of which have an impact on the nation's growth prospects and economic success. In light of this, it is critical to evaluate how monetary policy affects Nigeria's economic expansion.

In order to attain economic growth, the Nigerian government has implemented a number of monetary policies through the Central Bank of Nigeria over the years. The issue with Nigeria's economic growth continues, even with the focus on monetary policy manipulation growing. According to Frank, Ogoja, and Ayaundu (2020), these issues include a high unemployment rate, low investment, a high rate of inflation, and an unstable foreign currency rate. It is asserted that these alleged issues are what led to Nigeria's economic growth to rapidly drop. In essence, the CBN guidelines' sector-specific distribution of bank credit was intended to boost the economy's productive sectors and lessen inflationary pressures, while the fixation of interest rates at comparatively low levels was primarily intended to encourage investment and growth. Nevertheless, a number of issues plaguing the Nigerian economy, including high rates of inflation, poor investment, and unemployment, work against the country's ability to expand economically (Ayodeji & Oluwole, 2018). In actuality, these issues are caused by changes in other significant economic variables as well as the shortcomings of monetary policy alone.

In addition to the significant degree of uncertainty surrounding the monetary policy process, policy makers do not yet have a clear set of policies and procedures at their disposal to handle any eventuality. Thus, it becomes imperative to draw attention to Nigeria's monetary policy and assess the degree to which it has genuinely aided in the country's economic expansion. This study looked at how much changes in the amount of money in circulation have affected and could continue to affect Nigerian output.

LITERATURE REVIEW

Economic Growth

Amadeo (2022) defines economic growth as a rise in the output of commodities and services over a given time frame. The impacts of inflation must be eliminated in the measurement. The rise in the value of an economy's products and services, which boosts corporate profits, is

known as economic growth. Consequently, stock prices increase. This provides financing to businesses so they can expand and recruit additional staff. Incomes increase as more jobs are created. With more money in their pockets, consumers can purchase more goods and services, which spurs economic growth. All nations seek to see positive economic growth as a result. Since it accounts for the entire economic output of the nation, the gross domestic product is the most accurate indicator of economic growth. All products and services produced for sale by national enterprises are included in the GDP. Whether they are sold domestically or abroad makes no difference.

In a similar vein, Mckinsey (2022) defines economic growth as the rate at which a nation or other entity increases and improves the goods and services that it produces. The ability of an economy to generate products and services increases over time, and this is known as economic growth.

Real terms—which account for inflation—or nominal terms might be used to measure it. Although other metrics are occasionally employed, gross national product (GNP) or gross domestic product (GDP) is the traditional measure of aggregate economic growth (Investopedia 2023). According to Romer (2023), economic progress happens when people take resources and reorganize them to create additional value. The kitchen serves as a helpful metaphor for production in an economy. We combine cheap elements as directed by a recipe to make valuable final products. The availability of ingredients restricts what may be cooked, and most cooking in the current economy has unfavorable side effects. If the only way to increase economic growth was to cook the same food over and over again, eventually we would run out of raw materials and experience unacceptably high levels of pollution and annoyance. But as human history shows, economic prosperity results from more than just cooking more; it also results from better recipes. New recipes typically yield better economic value per unit of raw material and have fewer negative side effects.

Economic growth, in the words of Pettinger (2022), is the rise in real GDP (real output). The national output, national income, and national expenditure are all measured by the GDP. In essence, it gauges the entire amount of products and services generated inside an economy. According to this study, economic growth is defined as a quantitative rise in the value of products and services over a given time frame, often a year.

Monetary Policy

Thomas (2022) defines monetary policy as a collection of instruments used by a country's central bank to encourage steady economic growth and manage the total amount of money that the country's banks, citizens, and companies can access. Similarly, the European Central Bank (2021) defines monetary policy as the actions performed by central banks to affect the price and quantity of money in the economy. The European Central Bank often makes the most significant decisions in this regard in relation to the key interest rates within the euro area.

Monetary policy, according to CBN (2021), is a tool of broad macroeconomic management that is controlled by the monetary authorities and intended to accomplish a number of government economic goals, including employment creation, price stability, economic growth, and balance of payments equilibrium. Moreover, monetary policy—which includes actions intended to regulate and control the amount, cost, availability, and direction of money and credit in an economy in order to achieve certain defined macroeconomic policy objectives—is a key tool for economic stabilization, according to Adigwe, Echekoba, and Justus (2015). In summary, monetary policy is the strategy used by a country's monetary authority to control the money supply or the interest rate that banks must pay each other to meet their short-term borrowing needs. This is often done in an effort to lower inflation or the interest rate, maintain price stability, and foster public confidence in the value and stability of the country's currency. Additionally, according to CFI (2023), monetary policy is an economic strategy that controls the amount and rate of expansion of the money supply in an economy. It is an effective strategy for controlling macroeconomic factors like unemployment and inflation.

A variety of instruments are used to carry out these objectives, such as modifying the amount of money in circulation in the economy, buying or selling government assets, and adjusting interest rates. These rules are made by the central bank or another regulatory body of a similar nature. In Nigeria, monetary policy is intended to accomplish a number of goals, including price stability, balance of payments equilibrium, and rapid economic growth, according to Simon and Elias (2021). Stated differently, monetary policy refers to the

measures taken by a country's central bank to regulate the amount of money in circulation (Simon & Elias, 2021).

Comparably, in macroeconomics, the entire amount of money in circulation at any given time is referred to as the money supply. Although the term "money" can be defined in a variety of ways, common definitions include currency in circulation, or actual cash, and demand deposits, or the readily accessible assets of depositors recorded on the books of financial institutions.

Lending interest rates, according to Adeneye (2021), are the costs associated with using money borrowed from a lender. That's what banks charge one another for loans made over night. The percentage of a loan that is charged to the borrower as interest is known as the interest rate, and it is usually stated as an annual percentage of the loan balance.

The cost of borrowing money or the return on savings are referred to as interest (Banton, 2020, referenced in investopedea.com, 2021). An interest rate, in the words of Marco and Hernandez (2021), is the price associated with saving money or requesting a loan. It is computed as a percentage of the total amount that a bank, financial organization, or private individual delivered.

A percentage applied to the entire amount borrowed or saved is called an interest rate. It is the sum that a lender charges a borrower for using the lender's assets, on top of the principal (Central Bank of Nigeria, 2021).

Objectives of Monetary Policy

According to CFI (2023), maintaining currency exchange rates and controlling inflation or unemployment are the key goals of monetary policies.

- Inflation

Inflation levels can be targeted via monetary policy. It is thought that a low rate of inflation is beneficial to the economy. A contractionary policy may be used to combat high inflation.

- Unemployment

Monetary policy has the power to impact the economy's unemployment rate. An expansionary monetary policy, for instance, typically lowers unemployment because it encourages economic activity, which expands the labor market.

- Currency Exchange Rates

A central bank can control the exchange rates between its own and foreign currencies by using its budgetary authority. The central bank might, for instance, issue more currency to expand the money supply. When this happens, the local currency loses value in comparison to its outside equivalents.

- Tools of Monetary Policy

Central banks use various tools to implement monetary policies. The widely utilized policy tools include:

- Interest Rate Adjustment

By altering the discount rate, a central bank can affect interest rates. The interest rate that a central bank charges banks for short-term loans is known as the discount rate, or base rate. For instance, the cost of borrowing for banks rises if a central bank raises the discount rate.

The banks will then raise the interest rates that they charge their clients as a result. As a result, borrowing will become more expensive and there will be less money in circulation.

- Change Reserve Requirements

The minimal quantity of reserves that a commercial bank is required to hold is typically established by central banks. The central bank can alter the quantity needed to affect the money supply in the economy. The money supply falls if monetary authorities raise the minimum reserve requirement because commercial banks would have less money to lend to their customers.

The reserves are not available for use by commercial banks to finance loans or investments in start-up companies. The commercial banks lose out on this chance, so central banks give them interest on the reserves. IOR, or interest on reserves, or interest on needed reserves, is the term used to describe the interest.

- Open Market Operations

To modify the money supply, the central bank may buy or sell government-issued securities. Central banks, for instance, are able to buy government bonds. Consequently, banks will acquire additional funds to augment lending and money supply within the economy.

- Expansionary vs. Contractionary Monetary Policy

Depending on its objectives, monetary policies can be expansionary or contractionary.

- Expansionary Monetary Policy

This monetary strategy seeks to expand the amount of money in the economy by lowering reserve requirements for banks, buying government securities by central banks, and lowering interest rates. An expansionary policy encourages consumer spending and business activity while lowering unemployment. Increasing economic growth is the main objective of expansionary monetary policy. But it can also result in increased inflation.

- Contractionary Monetary Policy

Reducing the amount of money in the economy is the aim of a contractionary monetary policy. It can be accomplished by boosting reserve requirements for banks, selling government bonds, and hiking interest rates. When the government wishes to keep inflation under control, it employs the contractionary policy.

Theoretical Framework

- Classical View of Monetary Policy

The quantity theory of money forms the basis of the monetary policy perspective held by classical economics. Most discussions of the quantity theory of money use the Fisher-Venerian equation of exchange, which may be expressed as MV = PY. The statement uses M to represent the money supply, which is somewhat under the control of the federal government; V to represent the velocity of circulation, or the average annual number of times a currency is spent on final products and services; and P to represent the GDP price level. Therefore, PY is the current nominal GDP. The present market value of all final products and services (nominal GDP) must equal the money supply multiplied by the average number of times a currency is used in a transaction in a given year, according to the equation of exchange. According to the classical economist, real GDP is always at or close to its natural level. They therefore believe that the Y in the equation of exchange is fixed in the short term. They contend further that money tends to circulate at a constant pace. in order for V to be considered Fixed as well. Assuming that Y and V are both fixed, it follows that the only outcome of an expansionary or contractionary monetary policy by the Central Bank of Nigeria (CBN) would be a change in the money supply (M), which would have the direct effect of raising or lowering the price level P. Put otherwise, an expansionary monetary policy can only result in inflation, while a contractionary monetary strategy can only cause a decrease in the level of prices.

- Keynesian View of Monetary Policy

The idea that there is a direct and proportionate relationship between money and pricing was rejected by Keynesian theory. They both believe that it is indirect because of the interest rate. They also reject the idea that Y in the equation of exchange may be fixed since the economy is always at or close to the natural level of real GDP. They also disagree with the idea that money circulates at a constant speed. Keynesians contend that lower interest rates result from an expansionary monetary policy that expands the amount of loanable money accessible through the banking system. 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

Milton Friedman is the head of the monetarist school of thought. This line of thinking is a contemporary take on traditional macroeconomics. They created a more nuanced and applicable form of the money quantity theory. Like any school of thought, Friedman (1963) acknowledged the necessity of an efficient monetary policy to stable an economy and placed a strong emphasis on the money supply as the primary element influencing economic performance. Additionally, he believes that rather than being controlled and adjusted by the monetary authority, the money supply should expand at a set rate in order to support a consistent growth rate. 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, expansionary monetary policies may raise real GDP in the near term by boosting aggregate demand, according to monetarists. Nonetheless, they contend that the quantity theory continues to provide a reasonable approximation of the relationship between the money supply, the level of prices, and the real GDP over the long term, when the economy is functioning at full employment. Furthermore, an expansionary monetary policy over the long term merely raises inflation; it has no effect on real GDP levels. A link between the supply and demand for money and other aggregate economic

variables, such as the general level of prices, output, income, savings, and investment, is necessary for the implementation of monetary policy. (Anyanwu, 1996). This relationship influences the effectiveness of the mix of policy instrument. The monetarist view has Milton

Among the most influential proponents are Friedman, the Keynesian school, and Raddiffe's group. According to Friedman, shifts in the money supply have a direct impact on changes in the level of prices and, indirectly, on other broad economic variables. The public's desire to own a certain quantity of money in relation to their income distorts the relationship's rigidity. The efficacy of monetary policy is limited by the time lags between its development and execution.

The Keynesian premise in the monetary transmission mechanism is the determination of real output, general price level, and other macroeconomic variables. Keynesians contend that the relationship between interest rates and expected rates of profit determines national revenue. The availability and demand of money affect interest rates.

- Empirical Review

Ufoeze and colleagues (2018) examined how monetary policy affected Nigeria's economic expansion. Against the explanatory monetary policy variables—monetary policy rate, money supply, exchange rate, lending rate, and investment—the natural log of the GDP was employed as the dependent variable. The market-controlled time frame for the time series data is 1986–2016. The unit root and co-integration tests were also performed, and the study used an Ordinary Least Squares methodology. The study demonstrated that there is a long-term link between the variables. Furthermore, the primary outcome of this investigation demonstrated that investment, interest rates, and monetary policy rates have negligible positive effects on Nigeria's economic growth. Nonetheless, the money supply significantly boosts Nigeria's economic growth. Nigeria's GDP is significantly impacted negatively by exchange rates. In Nigeria, interest rates are a result of economic growth, which is driven by the money supply and investment opportunities. In general, 98% of the variations in Nigeria's economic growth may be attributed to monetary policy. The study came to the conclusion that monetary policy is a useful instrument for maintaining price stability and increasing output because it can be utilized to successfully govern the Nigerian economy.

Salami and Toriola (2021) use an ex post facto research design and regression model to investigate the relationship between monetary policy shocks and economic growth in Nigeria. Economic growth is the dependent variable, and the explanatory factors are the money supply, inflation, and interest rate. Time series data from the World Bank Development Index (WDI) and the Central Bank of Nigeria (CBN) Statistical Bulletin covering the years 1986 to 2018 were used. The analysis in the study used Vector Autoregression (VAR) methodologies. According to the results of the vector autoregression estimation, money supply has a major positive impact on Nigeria's economic growth, whereas inflation and interest rates have a negligible positive impact. The outcome demonstrates that while interest rates and inflation have no bearing on economic growth in Nigeria, monetary policy shocks have a major impact. The Monetary Policy Rate should be reviewed reduced from 12% to 9%, as suggested by the CBN, to increase financial accessibility.

Using annual data from 2006 to 2020, Ovat et al. (2022) conducted an empirical assessment of the monetary policy rate's (MPR) impact on Nigeria's economic development. Their study used a simultaneous equation model with two Stage Least Squares (2SLS) as the methodology. Interest-related variables included the broad money supply as a GDP ratio (M2/GDP), credit to the private sector as a GDP ratio (CPS/GDP), liquidity ratio (LQR), cash reserve ratio (CRR), and lending interest rate (LIR). Their research showed that inflation (INFL) has a negative and minor impact on economic growth, monetary policy rate has a negative but significant effect, and real exchange rate (REXR) has an inverse link and significant effect on economic growth.

The paper made the recommendation that the Central Bank of Nigeria identify the Monetary Policy Rate threshold that is appropriate for price stability, investment, and output growth. This is because the monetary policy rate has a significant impact on economic growth in Nigeria. The goal is to fix the policy rate in a way that facilitates credit flow in the desired direction, thereby boosting investment and economic activities.

Using data from 2000 to 2018, Frank et al. (2020) investigated how much the Central Bank of Nigeria utilizes monetary policies to encourage economic growth. Time series data from the Central Bank of Nigeria (CBN) Statistical Bulletin are used in the study.

Multiple regression models were the primary statistical instrument of analysis used to examine the impact of money supply and lending rate on GDP. Research indicates that the CBN Monetary Policy procedures are successful in controlling aggregates from the monetary and real sectors, including prices, employment, lending rates, money supply, and the pace of economic growth.

The study's conclusions show that while lending rates had a negative and statistically insignificant association with GDP, the money supply had a positive and significant influence on GDP. Therefore, it is advised that central bank monetary policy could be a useful instrument to promote investment, lower unemployment, lower lending rates, and stabilize Nigeria's economy. Ayodeji and Oluwole (2018) investigated the relationship between monetary policy and economic growth in Nigeria by using a model that uses multivariate regression analysis to look into how the government's monetary policy has impacted growth. Their analysis uses the Money Supply (MS), Exchange Rate (ER), Interest Rate (IR), and Liquidity Ratio (LR) as stand-in variables for monetary policy instruments. The Gross Domestic Product (income) at constant prices served as a proxy for economic growth. After doing a unit root test, all of the estimating variables were found to be stationary at first difference, with the exception of the interest rate component. This indicates that the model's interpretation is accurate and true to the relationships between the explained and explanatory variables. To have a parsimonious model, they introduced the Error Correction Model in their estimation. According to their findings, the money supply and exchange rate had a favorable but negligible effect on economic growth. Contrarily, measures of the interest rate and liquidity ratio showed a highly substantial negative impact on economic growth, supporting the claim made by Busari et al. (2002) that monetary policies are more appropriate when they are employed to target inflation as opposed to promoting growth. A long-term correlation between monetary policy and economic growth in Nigeria was also demonstrated by the Engle-Granger co-integration test. Lastly, a granger causality test was performed on the variables, and the findings indicated that while there is a bidirectional causal relationship between interest and economic growth, there is a unidirectional causal relationship between money supply and economic growth, and economic growth granger causes liquidity ratio and exchange rates. Their analysis suggests that the Nigerian central banks, which are constantly influenced by politics and government meddling, should be granted complete autonomy instead of just partial autonomy. Finally, by supporting the implementation of market-based interest rate and currency rate regimes that draw in both local and foreign investments, monetary policy should be utilized to foster a positive investment climate.

METHODOLOGY

Secondary data gathering was the method employed in this investigation. Secondary data come from a variety of sources, including government reports, publications, books, journals, unpublished works, and the internet. The secondary times series data set used in this analysis covers the years 1990–2021.The Central Bank of Nigeria Statistical Bulletin, indexmundi, and the National Bureau of Statistics (2021) are the main sources from which the data are gathered.The study's data sources are of the quantitative variety. As previously mentioned, the numerical values of the variables are derived from several sources. Therefore, from 1990 to 2021, information on Nigeria's GDP, broad money supply (MS), exchange rate (EXR), and inflation rate (INFL) will be gathered.

MODEL SPECIFICATION

In order to achieve the objectives of this study, multiple regression and Granger causality model is formulated and estimated, using Ordinary Least Square method, which assumes a linear relationship between variables. Thus, based on the nature of data used in this study it gives more reliable estimates

The functional relationship between the variables is presented thus:

GDP = F (MS, EXR, INFL)

The functional relationship is translated into an econometric model for regression:

$RGDP = \beta o + \beta 1MS + \beta 2\ EXR + \beta 3\ INFL + \mu$

Where:

GDP= Gross Domestic Product (proxy for Economic growth)

MS = Money Supply (Broad Money Supply M2)

EXR= Exchange Rate

INFL = Inflation Rate

μ = Error term at time

A priori Expectation

The apriori expectation of signs and magnitude of parameter estimates are that: $\beta 1>0$, $\beta 2<0$, $\beta 3>0$, Parameters in the model are expected to have signs and sizes that conform to economic theory, if they do they

are accepted, otherwise they are rejected. Unless there is an explanation to believe that in this instance, the principles of economic theory do not hold.

The technique of analysis employed in this study includes; The Ordinary Least Square estimation technique, which is used to estimate the relationships between the variables. In order to better explain the dynamic nature of the relationship, the used of the Autoregressive Distributed Lag Model is also employed in the estimation model. In addition to the ARDL, it is important to carry a preliminary test in order to ascertain the time-series properties of the variables in the model using Unit Root Test (Augmented Dickey-Fuller Test ADF). In order to determine the direction of the causal relationship between Gross Domestic Product, Agricultural Value Added as percentage of GDP, Exchange Rate, Money Supply as well as Inflation Rate. According to Granger and Engel (1986), Causality tests are also carried out on the variables as well.

RESULTS AND DISCUSSION

Unit root test

Conventionally, the universal assumption in testing economic model is that the variables be stationary, but is not generally true. Therefore, before estimating the model of the research, we shall check for the time series properties of the data. The unit root was tested using Augmented Dickey-Fuller test at 5% level of significance. The choice of lag length was lag (9) which was used uniformly for all variables. The result is shown in the table below:

Table 1: *Summary of the Augmented Dickey-Fuller Test*

Variables	ADF Statistics	5% Critical value	Probability	Order of integration	Remark
EXCR	-5.249461	-2.963972	0.0002	1(1)	Stationary
LOGGDP	-3.926508	-3.568379	0.0232	1(1)	Stationary
INF	-3.534354	-2.945842	0.0126	1(0)	Stationary
LOGMS	-3.523781	-2.945842	0.0129	1(1)	Stationary
Sources: Authors computation using Eview 10					

The table above shows the results of the unit root test. The decision rule state that if the Augmented Dickey Fuller statistics is > than the critical value at 5% then there is no unit root in the data, but its stationary.

The result shows that Inflation Rate (INF) is stationary at level while GDP, MS and EXCR were stationary at 1st difference, hence the data is stationary. Following Pesaran and Pesaran (1997) procedure.

However, ADF unit root test for this study confirmed that only one of the variables in the research model is stationary at 1(0) and the remaining three are stationary at first difference1(1).

The result in table 1 above indicates that when the variables are tested at levels, only one variable is stationary, the rest are not stationary.

Moving forward, differencing the respective variables and performing the unit root test on each of the resultant time series. The rationale behind this procedure is as Box and Jenkins (1976) have argued that differencing non-stationary time series will make it attain stationarity. The data of this nature warrant the use of Autoregressive Distributed Lag Model.

Granger Causality Test

Although regression analysis deals with the dependence of one variable on the other, it does not imply causation. In other words, the existence of a relationship between variables does not prove causality or the direction of influence (Gujarati, 2004).

The essence of employing causality analysis, using the granger causality test in this research work is to actually ascertain whether a causal relationship exists between Inflation Rate (INF), Exchange Rate (EXCR), Money Supply (MS) and Gross Domestic Product (GDP).

The F- statistics is used to reject or accept the null hypothesis of no causation between the variables when F-statistics is greater than 2 and less than 2 respectively.

Or the probability value, the null hypothesis is rejected if p- value is less than 5% level of significance.

Consider the table below to check for direction of influence between the variables in Nigeria for the period under study (i.e. from 1984 to 2021).

Table 2: *Granger Causality Test Result*

Pairwise Granger Causality Tests			
Date: 08/10/23 Time: 13:48 Sample: 1984 2021 Lags: 2			
Null Hypothesis:	Obs	F-Statistic	Prob.
EXCR does not Granger Cause LOGGDP	30	5.55298	0.0101
LOGGDP does not Granger Cause EXCR		0.56471	0.5756
LOGMS does not Granger Cause LOGGDP	30	1.80775	0.1848
LOGGDP does not Granger Cause LOGMS		13.5698	0.0001
INF does not Granger Cause LOGGDP	30	0.23831	0.7897
LOGGDP does not Granger Cause INF		1.59574	0.2227
LOGMS does not Granger Cause EXCR	30	0.05006	0.9513
EXCR does not Granger Cause LOGMS		2.64240	0.0910
INF does not Granger Cause EXCR	30	0.79014	0.4648
EXCR does not Granger Cause INF		2.35830	0.1153
INF does not Granger Cause LOGMS	30	0.24990	0.7808
LOGMS does not Granger Cause INF		0.99987	0.3822

Source: Author's computation using Eview 10

The results alternated between no causality and uni-directional, depending on the lag length allowed, which are all tested on the same lag. The outcome is presented in Table 2 above. The results suggest that the direction of causality is from EXCR to GDP and from GDP to MS. It showed that an increase in Exchange Rate will lead to an increase in Gross Domestic Product in Nigeria, but GDP does not Granger cause EXCR. That is, GDP has a uni-directional relationship with Exchange Rate. So also, GDP granger cause money supply, but money supply does not granger cause GDP at 5% level of significance. Also, the result showed that the rest of the variables their probability is greater than 0.05 and that means they are not Granger causing each other.

The ARDL approach was adopted because its test statistics generally perform much better in small sample than the test statistics computed using the asymptotic formula that explicitly takes account of the fact that the regressors are 1(1). Its permits the combination of the different order of integration (1(1)) and 1(0)) among the variables in the model. The result of the ARDL for the models is represented below:

Table 3: *Showing The Ardl Result*

Dependent Variable: LOGGDP				
Method: ARDL Date: 08/10/23 Time: 13:50 Sample (adjusted): 1988 2015 Included observations: 28 after adjustments Maximum dependent lags: 4 (Automatic selection) Model selection method: Akaike info criterion (AIC) Dynamic regressors (4 lags, automatic): LOGMS EXCR INF Fixed regressors: C Number of models evalulated: 500				
Selected Model: ARDL(3, 4, 4, 0)				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.***
LOGMS	-8.25E-10	6.50E-10	-1.269091	0.2267
EXCR	30.43781	18.21403	1.671119	0.1186
INF	5.058032	15.56346	0.324994	0.7504

C	-325.3732	715.0165	-0.455057	0.6566
R-squared	0.999240	Mean dependent var		25564.84
Adjusted R-squared	0.998421	S.D. dependent var		30347.31
S.E. of regression	1205.879	Akaike info criterion		17.33198
Sum squared resid	18903885	Schwarz criterion		18.04566
Log likelihood	-227.6477	Hannan-Quinn criter.		17.55016
F-statistic	1220.501	Durbin-Watson stat		2.109279
Prob(F-statistic)	0.000000			
***Note: p-values and any subsequent tests do not account for model selection.**				

The coefficient of the constant intercept β0 is -325.3732 which show that if all the explanatory variables were held constant, the GDP will be negatively affected as -325, a decrease in economic growth in the economy. In relation to our apriori expectation, it is expected that there should be a direct positive relationship between Gross Domestic Product and the independent variables (MS, and INF) in Nigeria. The coefficient does not conform to the apriori expectation. However, the coefficient of Money Supply as percentage of GDP (MS) does not conformed to the apriori expectation. The coefficient (β1=-8.2510, P=0.2267) shows a negative and an insignificant relationship between MS and economic growth in Nigeria. Its shows that a unit change in MS will lead to 825% decrease in economic growth in Nigeria.

Consequently, the coefficient of Exchange Rate shows that it does not conformed to the apriori expectation of a negative relationship. This is proving by the coefficient of (β2=30.43781, P=0.1186). The result is positive and insignificant at 5%. This shows that a unit change in Exchange Rate will lead to a increase in GDP by 3043% in the economy. There is an positive relationship between EXCR and economic growth.

Lastly, the coefficient of Inflation rate also conformed to the apriori expectation of a positive relationship. This is shown by the coefficient (β3=5.058032, P=0.7504) which indicates that a unit increase in Inflation Rate will lead to a 5058032 unit increase in economic growth.

The coefficient of determination (R2) showed the percentage of variations in the dependent variable that can be explained by the independent variables. The R2 of 0.999240 or 99% showed that Economic growth can be explained by changes in the explanatory variables as shown in the model and the remaining 1% is explained by the dummy variable. The F-statistic which measures the overall significance of the model indicated that it is significant at 5%. This is indicated by the F-statistics and its probability (1220.501 and 0.000000) respectively. We therefore conclude that there is a significant impact of monetary policy on economic growth in Nigeria. The Durbin Watson statistics is approximately 2 which show that there is no serial correlation. This means that the value of the random term in any particular period is uncorrelated with its preceding values which indicate the absence of autocorrelation.

Discussion of Findings

Nigeria is one of an import dependent economy which is faced with stagnated growth, unstable business cycles and economic fluctuation. This usually caused an unemployment, inflation, unproductivity and balance of payment disequilibrium. Government has in one way or the other regulated and controlled the economy to maximize the welfare of the citizens by way of ensuring that the resources are efficiently allocated and used. Like any other developing country, Nigerian government adopts three types of public policies to carry out the objective of income distribution and allocation of resources. These tools of public policy include: monetary policy, lending rate, Etc. In Nigeria, government has always relied on monetary policy as a way of achieving certain economic objective in the economy such macroeconomic objectives include; employment, economic growth and development, balance of payment equilibrium and relatively stable general price level.

Based on this result, the regression shows that a negative and an insignificant relationship existed between MS and economic growth in Nigeria. Its shows that a unit change in MS will lead to 825% decrease in economic growth in Nigeria at 5%. This could be as a result of the hoarding of the currency by rich people in the economy. That makes the money supply in the economy by the central bank to be ineffective in the economy thereby reducing the productive capacity of the economy and making it to impact negatively on the

economy. The result is not consistent with Ufoeze, et al (2018) who found a positive and significant relationship between GDP and Money Supply in Nigeria. The result further shows that there exists a positive and insignificant relationship between Inflation Rate and economic growth in Nigeria. That a unit increase in Inflation Rate will lead to a 5058032-unit increase in economic growth. This shows that it does not conform to Ovat et al (2022), who found a negative relationship between inflation and economic growth in Nigeria. Public Inflation Rate has the tendency of stimulating economic growth, but several factors such as gross mismanagement of funds has hindered it stimulating influence and high cost of Agricultural inputs such as Fertilizers and Farm machineries such as Tractors discouraged farmers from large scale production thereby reducing the output in the economy. This is the reason why the coefficient of inflation rate is not significant. On the other hand, the Unemployment Rate shows that there exists a negative and significant relationship with GDP. This conforms to the apriori expectation, therefore, to improve the agricultural sector there is need to employ more workers to reduce the unemployment thereby increasing the GDP. The coefficient of the exchange rate is positive and insignificant at 5%. This shows that a unit change in Exchange Rate will lead to an increase in GDP by 3043% in the economy. There is a positive relationship between EXCR and economic growth. This does not conform to Ovat et al (2022) who found an inverse relationship between exchange rate and economic growth in Nigeria.

The regression result shows that there exist a positive and a significant relationship between Monetary Policy and economic growth in Nigeria. This is indicated by the goodness of fit of 99% growth in GDP which is as a result of a change in the independent variables and 1% is by the disturbance variables. The overall significance is measured by the value of the probability F-statistic which is 0.000000 and is less than 0.05 significant levels. We, therefore, reject the null hypothesis and conclude that there is a significant impact of monetary policy on economic growth in Nigeria

CONCLUSION AND RECOMMENDATIONS

This study investigated the effect of monetary policy on economic growth in Nigeria. The main objective of this study is to investigate the effect of Monetary Policy on Economic Growth in Nigeria while the specific objective to evaluate if there is a causal relationship between monetary policies and economic growth in Nigeria.. These have been achieved using analytical techniques (granger causality, cusum of square, Autoregressive Distributed Lag etc.) The findings of the study are as follows:

The unit root test tested showed that some of the variables are stationary at a level and some are stationary at first difference. The regression shows that a negative and an insignificant relationship existed between MS and economic growth in Nigeria. The result further shows that there exists a positive and insignificant relationship between Inflation Rate and economic growth in Nigeria. The Jarque Bera test indicated that the data are normally distributed.

Conclusion

The role of Monetary Policy in enhancing economic growth in Nigeria has been discussed in this study. The study showed that Monetary Policy can only contribute to growth significantly when properly manages by the monetary authority. The study concludes that monetary policy authority such as the central bank should make sure that its blocked all the channel of hoarding of the naira note by the public through the design of new naira note from time to time.

Recommendations

Based on the result of this research study, the following recommendations are made:

1. Government should regulate the economy using monetary instrument such as open market operation when there is inflation to reduce it.
2. Suitable bank reserved requirement should be put in place to reduce the amount of money in circulation, so that any increase of reduction in money supply will help to regulate the economy
3. The government should subsidies industrial and farm inputs as such will help producers to produce goods at affordable prices thereby reducing inflation in the economy.

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