

# EFFECTIVENESS OF MONETARY POLICY TOOLS ON NIGERIA'S ECONOMIC GROWTH AND THE MODERATING IMPACT OF FINANCIAL SECTOR DEVELOPMENT

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## Abstract

*This study investigated effectiveness of monetary policy tools on Nigeria's economic growth and assessed the moderating impact of financial sector development. Annual time series data on Gross Domestic Product (GDP), Exchange Rate, and Inflation are obtained from Nigerian Central Bank's statistical and Monetary Policy and Credit Availability were obtained from World Bank Development Indicators covering 31 observations from 1991 to 2022 were used in the study. Data were analyzed using the Autoregressive Distributed Lag (ARDL) model. Research results show that, there exists a positive significant relationship between exchange and Inflation rates with economic growth over the long term; also, positive significant relationships can be detected in the growth of money and volume of credit with economic growth in the long term. On the other hand, the monetary policy rate and credit availability significantly negatively affect economic growth in the long term. These consequences explain that inefficiency exists in the financial environment or monetary policy instruments in isolated applications without considering the context of the financial sector, which needs to be more durable and realistic enough to be effective. In addition, the analysis with the Autoregressive Distributed Lag (ARDL) model for both levels and the first difference, confirm the existence of a long-run cointegration among monetary policy measures and economic growth. Therefore, the negative coefficients on both the monetary policy rate and the availability of credit indicate that monetary policy, if adjusted effectively, can serve as a powerful tool to initiate the desired economic expansion. This finding instills hope and optimism for the future of Nigeria's economy.*

*Keywords: Economic growth, Financial sector, Moderating Co-integration, Monetary policy.*

## 1.0 Introduction

Monetary policy is a significant tool designed to positively affect economic growth, shape economic research and policymaking, particularly among developing countries such as Nigeria. By monetary policy, we mean the range of policy tools or instruments available to the central bank, through its policies and mechanisms, to achieve its stipulated goals, typically price stability and economic growth. Monetary policy involves using various

policy instruments to influence the economy, usually by controlling interest rates, inflation, the monetary base, credit availability, exchange rates, and other related money supply levels. The Central Bank of Nigeria (CBN) has employed various monetary policy instruments to spur economic growth and safeguard price stability. A closer look at their impact is essential to policy formulation and economic planning. The Monetary policy rate (MPR) is a necessary instrument of monetary policy since changes in it shifts other interest rates and, therefore, affect various economic activities. Thus, changes in the monetary policy rate are primarily aimed at attaining the goals of monetary policy, particularly the rate of inflation and the overall stability of the economy (Balogun, 2021). In particular, economic activities are stimulated or suppressed depending on prevailing economic conditions.

Also, controlling inflation is the most notable goal of monetary policy. Inflation erodes currency's value, distorts economic agents' desirable and natural spending and saving behavior, and ultimately is an essential generator of economic disequilibria. Hence, with a lower and stable inflation level, the economy works towards sustained growth (Nwoko et al., 2016). Access to credit plays a significant role in the growth of a business, especially for SMEs. Credit policy emanating from the communication of the monetary policy stance, which includes cash reserve ratio (CRR), lending limits, and other banking requirements by the CBN, has a direct impact on the liquidity conditions of an economy and its effect on firms' ability to invest and expand (Ayodeji & Oluwole, 2018). Exchange rate policy is also critical in an open economy. A sound and stable exchange rate is necessary for price competitiveness in international trade and attracting foreign investors. Exchange rate volatility significantly affects the cost of importation and exportation, which invariably affects economic growth (Ikhide, 1996).

The development of the financial sector plays a crucial role in the economic growth process by improving the efficiency of the transmission of monetary policy. Thus, a developed financial sector can mobilise more savings, direct resources to productive uses, and provide more efficient financial services. The relationship between the financial sector's development and the efficiency of monetary policy is still meaningful and needs to be investigated. Thus, a developed financial sector can increase the effectiveness of monetary policy tools to impact economic growth. It illuminates how complicated and interrelated the economic system is. In other words, the efficiency of monetary policy tools is not only decided through the choice of tools but also depends on the state of the financial sector because some factors in the economy (especially bank lending) are sensitive to monetary policy. That is to say, not only the amount but also the quality of credit and bank lending will determine the efficiency of monetary policy. A growing number of studies have found that, in the presence of banking sector development, further monetary expansion can stimulate the growth of the banking sector under an appropriate regulation of the monetary authority. This situation saves liquidity resources and helps banks' branching, deposit insurance and the Fed's encroachment on its primary banking regulatory responsibilities. Nigeria's economy mainly depends on oil, which is subject to significant volatility. Nigeria, the largest economy in Africa, needs more fuel to cultivate economic growth. Often faced with external shocks and structural factors, monetary policy challenges Nigeria's economy. However, adequate and well-advised monetary policy can help mitigate the circumstances by ensuring diversified and sustainable economic growth.

This study is of utmost importance in the context of Nigeria's economic challenges. It aims to examine the effect of monetary policy tools on economic growth and determine the role of financial sector development in moderating the transmission of monetary policy on economic growth in Nigeria. The findings of this study will be crucial for monetary policy authorities to determine the most effective policy tools to stimulate economic growth and bridge the gap between attainable and potential growth rates. The specific objectives of this study, which are directly linked to these challenges, include:

- (i) To examine how changes in monetary policy interest rates affect GDP growth.
- (ii) To investigate the relationship between inflation rate, economic growth, and Nigeria's growth.
- (iii) To examine the effect of credit availability on GDP growth.
- (iv) Determine the impact of exchange rate fluctuations on economic growth.

## **2.0 Literature Review**

### **2.1 Conceptual Review**

Monetary policy is an economic management tool that regulates a country's money supply and interest rates. These two significant variables concerning monetary policy deal with the activity of purchasing power, which eventually contributes to the output of a country. Thus, monetary policy discusses factors like inflation, consumption, growth and liquidity. The effectiveness of monetary policy in achieving its macroeconomic policy goals has been a research topic. The classical school of thought suggests that central banks stabilize the economic system by controlling the money supply using monetary policy. However, recent literature reveals that beyond controlling inflation, one essential function of monetary policy is to enhance macroeconomic stability. This stability is essential for a country to stimulate long-term economic growth.

In Nigeria, the Central Bank of Nigeria is entrusted with the implementation of monetary policy. The bank employs a range of monetary policy tools, including the monetary policy interest rate, inflation rate, credit control, and exchange rate management, to achieve its objectives. Stable economic growth is an important motive as well. High inflation is generally bad for economic growth. Inadequate management of inflation could erode the value of money and people's savings. This will produce some instability in the economy. However, inflation pressures must be appropriately managed for the economy to grow. Well-managed inflation encourages people to invest and consume. This is undoubtedly beneficial for economic growth. The connection between inflation management and economic growth has come under intense research scrutiny. It is widely agreed that low inflation in the long-run will help economic growth. Economic growth is often measured through increases in the Gross Domestic Product. Many factors can explain the growth we see in GDP. These include the global oil price, governmental regulations, and economic growth. However, monetary policy's role in economic growth is extraordinary. To this end, research has focused on whether monetary policy, especially those that can expand or restrict credit or affect the exchange rate, could play an important role in Nigeria's economic growth.

Measures related to the monetary policy include the lending interest rate the central bank sets towards the commercial banks, which, by extension, influences the rates commercial banks set for their lending. High CBN lending interest rates to commercial banks translate into high lending interest rates from commercial banks on loans to their clients. As can be easily imagined, lower lending interest rates derived from a CBN monetary policy will prompt borrowing and lending activity, deeming investment to boost the economy. Likewise, higher interest rates underwritten by the apex bank for commercial banks will slow down all activity. The CBN employs a host of tools to push towards the desired inflation point, including interest rate, rate of money supply, the amount of money in circulation in an economy and credit availability. Measures targeted at credit availability continue to employ the aforementioned tools, mainly interest rate and regulatory measures. Financial sector development moderates the effectiveness of monetary policy. A well-developed financial sector improves monetary policy transmission through increased availability of credit and other financial services, increased investment, and thus economic growth. The level of financial sector development allows countries to implement an effective monetary policy (Akinjare et al., 2016). The development of the financial sector, spanning banks and other market operators (non-bank financial institutions), has facilitated improved effectiveness of monetary policy and increased economic growth in Nigeria. The exchange rate is the rate of one currency against another, typically quoted in US dollars, and it affects international trade and investment, which is crucial for an economy. The CBN monetary policy management of the nation's money – underlying measures that affect the exchange rate are readily available and are often employed towards economic growth. Exchange rate policy plays a central role in an economy deeply integrated into the world market. Sound exchange rate management theory is built on the Mundell-Fleming model that analyses interactions of exchange rates, interest rates and capital flow in an open economy (Mundell, 1963). Central banks intervene in the foreign exchange market to stabilise the value of the national currency, reduce variations, maintain the economy's international competitiveness and attract foreign investment to ensure a sustainable, favourable balance of payment (Siyan, 2019). Central banks regulate the money supply and interest rate through open market operations (OMO). The theoretical basis of open market operations rests on monetary theory. According to monetary theory, central banks can control the money supply by purchasing and selling government securities (Woodford, 2004). When the central bank buys securities, it inserts liquidity into the economy and reduces the interest rate necessary to encourage borrowing and investment. If the central bank sells securities, it retrieves liquidity from the economy and hikes interest rates to tackle inflationary pressures (Siyan, 2019).

## **2.2 Theoretical Literature**

Money policy is a general term for the instruments and mechanisms deployed by the central bank to ensure a macrostable state of growth. The Central Bank of Nigeria (CBN) uses different instruments to influence the economy through controlling interest rate policy, inflation targeting, credit control, and exchange rate policy. Interest rate policy is a monetary policy tool that can bring more direct effects on the economy. The CBN largely determines the interest rate that commercial banks must pay to the CBN, often called the benchmark rate, which can cause a ripple effect on dependent variables. This process and

essence of money policy are based on the Keynesian framework, which hypothesises that reductions in interest rates result in a reduction of the cost of borrowing and an increase in consumption and investment because the price of participation in economic activities or projects is low (Mankiw, 2019). On the other hand, rising interest rates help curb inflationary pressure by increasing borrowing costs and consequently slowing down economic activities.

Maintaining price stability is the main objective of monetary policy, which controls inflation through interest rates and open market operations. The theoretical underpinning of inflation targeting comes from the Quantity Theory of Money, which links the quantity of money in the economy to the overall price level (Friedman, 1968). Central banks control inflation through nominal interest rate changes and open market operations (buying or selling government securities). Inflation targeting promotes macroeconomic stability by controlling money supply growth and price transmission mechanisms (Mishkin, 2002). Credit regulation concerns how much to finance economic activities, such as consumption, investment, and international trade. The theoretical rationale of credit regulation originates from the financial intermediation theory, which focuses on how financial intermediaries channel funds from savers to borrowers (Diamond, 1984). Through reserve requirements or capital adequacy ratios, central banks guide banks to ensure their liquidity buffers are sufficiently large and cover obligations (Aggarwal & Estephan, 2012), thereby reducing the risk of financial instability. The critical policy function of credit regulation is to prevent excessive loan growth and debt burden.

Reserve requirements were the minimum amount banks needed to hold as reserves for each deposit. The theoretical explanation of the role of reserve requirements is related to the ability of the monetary sector, particularly the banking system, to control the supply of money and to create credit (Brunner & Meltzer, 1990). Adjusting the reserve requirements then allows the central bank to affect the supply of funds available for lending purposes and, thus, affect economic activity. Lowering the reserve requirements thus increases the money supply, whereby banks can lend more, stimulating economic activity while raising the reserve requirements, which allows the central bank to restrict the supply of lending and control inflation (Fischer, 1983). As seen from the theoretical framework attached to monetary policy tools, we now completely understand the channels through which central banks can influence economic activity. Central banks use interest rates, inflation control, credit control, exchange rate management, open market operations and reserve requirements to stimulate macroeconomic stability and sustain economic growth. The conditions under which these monetary policy tools most effectively achieve desired economic needs depend on the economy's overall economic climate and the financial system's development.

#### Financial Sector Development Theories

Development in the financial sector is widely held as one crucial part of economic growth. Many theoretical literatures address how financial development promotes economic performance. Theory holds that financial intermediaries mobilise savings into the productive sector for economic development by allocating resources to their most productive use (Levine, 2005) and promote innovation by providing financial resources

needed for new entrepreneurs (Sonis, 2013). Endogenous growth theorists also point out that financial development is conducive to economic growth by enhancing capital allocation efficiency and technological progress. It is established that financial institutions reduce information and transaction costs, thereby paving the way to improved savings mobilisation and allocation (Puatwoe & Piabuo, 2017). Financial development is conducive to sustainable economic growth by promoting investment in human capital and technology (Levine, 2005). Financial intermediation theory asserts the importance of financial intermediaries for reducing the costs of financial transactions and increasing the efficiency of capital markets; financial intermediaries mitigate problems of adverse selection and moral hazard between borrowers and lenders, increasing the flow of funds in the economy (Diamond, 1984). Financial intermediaries – banks, investment firms, etc – support economic activity and growth by increasing liquidity and helping to spread risks (Merton, 1995, as cited in Shapoval, 2021). The McKinnon-Shaw hypothesis asserts that financial repression – i.e., interest rate ceilings, high reserve requirements, directed credit programmes and targeted bank branching – slows economic growth by distorting financial markets and reducing the efficiency of capital allocation. McKinnon and Shaw argue that deregulation and market-oriented reforms are conducive to financial development and increasing economic growth (McKinnon, 1973; Shaw, 1973).

This supply-leading hypothesis implies that financial development contributes to economic growth because financial system development increases the provision of financial resources and services, such as bank credit and corporate bonds, for investment and innovation. Meanwhile, the opposite demand-following hypothesis suggests that economic growth drives financial development because the growth increases the demand for financial services, such as mortgages for house purchases or credit for firms' investment projects. To sum up, the impact of the demand-following and the supply-leading channels operate in opposite directions. In contrast, the empirical evidence for both hypotheses supports a special kind of bi-directional relation between financial development and economic growth (Patrick, 1966). The empirical evidence on the impact of financial development on economic growth has overwhelmingly confirmed this positive relationship. In particular, a majority of empirical studies conclude that financial development significantly and positively affects economic growth by contributing to higher efficiency of capital allocation by providing more channels for intermediating savings to investments and broader access to finance by known and unknown agents (such as households, private firms, and governments) as well as a variety of financial products for those financing activities (see a detailed discussion in World Bank, 2016). Financial development, in turn, increases households' ability to save, reduce risks through insurance and equity markets, and develop new business ideas and entrepreneurial activities.

The theoretical literatures for financial sector development has emphasised the pivotal role played by the financial sector in generating growth. Schumpeter's insights on innovation, the McKinnon-Shaw hypothesis of the role of financial liberalisation, and more recent models of financial development all point to a clear theoretical foundation on how financial development can affect economic performance. Empirical evidence shows that a well-functioning financial system is essential for sustainable economic growth.

### 2.3 Empirical Literature

Much work has been undertaken to understand the effectiveness of monetary policy in impacting economic activities in Nigeria. The works include studies that consider the effectiveness of monetary policy on economic growth, inflation, and economic stability. None of the above-targeted gains achieved is more specialised than the high inflation rate that the Nigerian economy is plagued with. Therefore, these studies seek to analyse the effectiveness of monetary policy and its impact on the economic phenomena mentioned above by using different tools and periods of study. Empirical studies that focus on the impact of monetary policy on economic growth and economic stability in Nigeria are mainly concerned with two areas. These are the impact of monetary policy on economic growth, inflation or economic stability and the impact of credit on inflation and economic growth. These studies respond to the critiques raised against prior studies on the impact of monetary policy effectiveness in Nigeria using diverse periods and techniques.

Nwoko et al. (2016) found that monetary policy has been found to impact economic growth despite the limitations of work confronted by structural economic problems such as high average prices and agricultural and industrialisation problems. A model was designed to determine how monetary policy affects economic growth; it was found that the relationship between monetary policy and economic growth in Nigeria is positive. The interest rate and monetary supply policy instrument can determine economic growth for the country's sustainable development (Ayodeji & Oluwole, 2018). The above finding is significant in arguing that monetary policy affects economic growth in their research paper. Curiously, Baghebo and Stephen (2014) deduced how much monetary policy continues to affect selected macroeconomic variables (GDP, Inflation and Balance of Payments) and provided results after that that "Findings from the Study showed that how much monetary policy continues to impinge on these macroeconomic variables is relatively high". Anowa and Okorie(2020) reassessed the impact of monetary policy on economic growth and its relationship with financial sector development in Nigeria. The essence of the study is to focus on how financial sector development can limit the effectiveness of monetary policy. These findings are very significant as the effect of monetary policy on economic growth has been central in most economic policies. The criterion by which the relationship between monetary policy and economic growth was measured is interesting.

Monetary policy intervenes to curtail trajectories of inflation. Similar studies have examined monetary policy schedules and economic growth trajectories in Nigeria. For instance, Ani & Onu (2021) observed that economic stability from monetary policy stability occurred because the central bank in Nigeria adopted monetary policy measures to stabilise inflation during a post-structural adjustment program era. On the other hand, Balogun (2021) examined the effect of the Cash Reserve Ratio (CRR) and Monetary Policy Rate (MPR) as measures of monetary policy in stabilising the Nigerian economy from 1999 to 2020, concluding that "through the use of CRR and MPR, they now provide an avenue for CBN to ensure that the economy will be stable concerning inflation so that the economy will be stable." The most relevant empirical studies on monetary policy have been on the stability of the Nigerian economy. Recently, Iwedi and Edeh (2023) examined the monetary policy's effect on financial sector growth and stability, noting that a well-implemented

monetary policy contributes to economic stability through the steady and reliable exchange rate. A few preliminary findings from these studies have provided some insights into the relative performance of Nigeria's monetary policy's effectiveness among its counterparts in the developing economies. For instance, Ayodeji and Oluwole (2018) compared the effectiveness of Nigeria's monetary policy with other African countries. The policy has performed reasonably well among the macroeconomic objectives of the monetary policy body. However, it has failed to achieve its principal objective due to several challenges plaguing the country's nascent financial system, including a low level of financial development, inadequate financial infrastructures (such as banking services communication systems), low level of financial penetration, weak transparency, poor implementation approach and high level of non-performing loans to borrowers. These paint a picture of the need for more research and policy adjustments to make monetary policy more accountable in Nigeria (Abiodun et al., 2017).

### 3.1 Research design

The study uses a unit root test that is initially based on the Augmented Dickey-Fuller (ADF) test to analyze the unit root. Pesaran et al. (2001) affirmed the ARDL model as a co-integration method to test for the existence of a long-term link between the variables that are I(0) and I(1).

### 3.2 Data Collection

Annual time series data on Gross Domestic Product (GDP), Exchange Rate, and Inflation are obtained from Nigerian Central Bank's statistical and Monetary Policy and Credit Availability were obtained from World Bank Development Indicators covering 31 observations from 1991 to 2022 were used in the study.

### 3.3 Model Specification

Based on the aforementioned information, the study outlines the functional form of the relationship between inflation, interest rates, and the availability of credit, as well as economic growth and monetary policy.

$$RGDP = f(\text{REXRATE}, \text{MPR}, \text{INFLRATE}, \text{CRAVAIL})$$

Where:

The unit of measurement of the variables is given as below

RGDP – index of Gross Domestic Product (real GDP) expresses in constant term

EXRATE -. Exchange rate

MPR- Monetary Policy Rate

INFLRATE – Inflation, GDP deflator (annual %)

CRAVAIL- Credit availability.

Where all variables are as earlier defined. In the ARDL form the model is specified as:

$$\begin{aligned} \Delta \log RGDP_t &= \alpha_0 + \sum_{i=1}^p \alpha_1 \log EXRATE_{t-1} + \sum_{i=0}^p \alpha_2 \log MPR_{t-1} + \sum_{i=0}^p \alpha_3 \log CRAVAIL_{t-1} \\ &+ \sum_{i=0}^p \alpha_4 \log INFLRATE_{t-1} \\ &+ \varepsilon_t \end{aligned}$$



Where:

$\alpha_0$  is the intercept parameter

$\alpha_1 - \alpha_4$  are the coefficients of the independent variables

$\Delta$  = change and

$\varepsilon$  = a stochastic error term, assumed to be independently and normally distributed

### Results and Discussion

In the section of the paper the estimation results are presented and the results as estimated are then discussed.

#### Analysis of Unit Root Test

The unit root test was performed to ascertain the stationarity of the time series data under study so as to avoid running a spurious regression using Augmented Dickey-Fuller (ADF) test.

Table 1: Augmented Dickey Fuller Unit Root Test

Variables	LEVEL			FIRST DIFFERENCE			
	T-Statistics	Critical Values 5%	P-Values	T-Statistics	Critical Values 5%	P-Values	Order of Integration
LGDP	5.2689	2.9604	0.0002	-----	-----	-----	I(0)
LEXRATE	10.6866	3.612	0.0000	-----	-----	-----	I(0)
LMPR	1.4821	2.9678	0.5283	6.9552	2.9763	0.0000	I(1)
LINFLRATE	2.2564	2.9604	0.1918	4.4502	2.9678	0.0015	I(1)
LCRAVAIL	1.60173	2.9640	0.4694	5.1955	2.9719	0.0002	I(1)

Source: Author's Computation (2024)

Note: \* indicates signifies at 5 percent; 95% critical values are reported in parentheses below each test value.

When we closely analyze the above table, the augmented dickey fuller unit root test findings, with 5.2689 as the t-statistic, indicate that LGDP is stationary at level. LEXRATE's t-statistic of 3.8324 is more than the critical value at 5% of 2.9640 with 0.0067 as the probability value. However, it is also stationary at the level since the t-statistics is greater than the critical values and the probability values are less than 0.05. Because the t-statistics is higher than the critical value of 5%, or 2.9604 with a probability value of 0.0002, LGDP is stationary at level.

The monetary policy rate, or LMPR, is not stationary at level, as shown by the fact that the t-statistics value of 1.4821, which is less than the critical value of 2.9678, and the probability value of 0.5283, which is more than 0.05. LMPR is significant and first different, though, because the t-statistic of 6.9552 is greater than the P-value of 0.000 and the critical value of 5% of 2.9763. LINFLRATE is not stationary at level because the t-statistics is less than the critical values of 2.9604 with a P-value of 0.1918, but it is

stationary at first different because the t-statistics of 4.4502 is larger than the critical value of 2.9678 with the probability values of 0.0015.

In the end, LCRAVAIL is not stationary at the level because the t-statistic of 1.60173 is greater than the critical value of 2.9640 and the P-value of 0.4694 is greater than the 5% probability values. On the other hand, LCRAVAIL is stationary at first because the t-statistic of 5.1955 is greater than the critical value of 2.9719 and the p-value of 0.0002 is less than the probability value.

As previously mentioned, to prevent spurious results, the unit roots analyze the stationarity of the variables. The results indicate that some variables are stationary at the level of analysis, while others are stationary at the first difference. For this reason, ARDL will be used as a technique to analyze the impact of the development of the financial sector and the moderating effect of monetary policy tools on Nigeria's economic growth.

TABLE 2: ARDL Short run Coefficients

Variable	Coefficient	t-Statistic	Prob.*
LRGDP(-1)	0.492296	2.286729	0.0412
LRGDP(-2)	0.383539	1.913006	0.0799
LINFLARATE	0.005591	0.107956	0.9158
LINFLARATE(-1)	0.07602	1.6251	0.1301
LMPR	-0.09438	-1.21241	0.2487
LMPR(-1)	-0.11837	-1.6341	0.1282
LMPR(-2)	0.19597	1.713844	0.1122
LMPR(-3)	0.244236	2.598098	0.0233
LEXRATE	0.015527	0.274265	0.7885
LEXRATE(-1)	0.110874	2.044896	0.0634
LCRAVAIL	-0.04353	-0.41024	0.6889
LCRAVAIL(-1)	0.15548	1.164146	0.267
C	-0.18928	-0.25059	0.8064

Source: Author's Computation (2024)

Table 2 above shows the short-run ARDL results of the analysis assessing the impact of monetary policy tools and the expansion of the financial sector on Nigeria's economic growth. The GDP is the dependent variable, whereas the proxies LEXRATE, LINFLRATE, LMPV, and LCRAVAIL represent the independent or explanatory variables of the exchange rate, inflation rate, monetary policy rate, and credit availability. This is demonstrated by the statistical insignificance of LEXRATE with probability values of 0.7885 on the LGDP, which suggests that the exchange rate does not adequately characterize the dependent variable. Nonetheless, the coefficient of LEXRATE, which is 00155 with a t-statistic of 0.2743, suggests that the exchange rate has a favorable impact on economic growth.

Furthermore, because of the LMPR's -0.0943 coefficient and 1.2124 t-statistic, the monetary policy rate has a short-term negative impact on economic growth. In the short run of the dependent variable, the monetary policy rate is statistically negligible because the probability values of 0.2487 are higher than 5%. The inflation rate is statistically insignificant in the short run of the dependent variable, given that it has a probability value of 0.9158, which is greater than 5%. Nonetheless, this link is non-zero because there is a

positive correlation between the short-run inflation rate and economic growth (the t-statistic is 0.1080 and the coefficient of LINFLRATE is 0.0056). Furthermore, a t-statistic of 0.4102 indicates a negative correlation with a co-efficient of -0.0435 and probability values of 0.6889, which is higher than 5%, between loan availability and the dependent variable, economic growth. This suggests that credit availability is statistically insignificant in the short term.

**Table 3: ARDL Long run Coefficients**

Variable	Coefficient	t-Statistic	Prob.
LINFLARATE	0.657275	2.083138	0.0593
LMPR	1.831885	0.97386	0.3493
LEXRATE	1.018004	4.155638	0.0013
LCRAVAIL	0.901589	0.675331	0.5123

Source: Author`s Computation (2024)

$$EC = LRGDP - (0.6573*LINFLARATE + 1.8319*LMPR + 1.0180*LEXRATE + 0.9016*LCRAVAIL)$$

Table 3 presents the results of the ARDL long-run analysis of the moderating effects of the financial sector's development and the effectiveness of monetary policy tools on Nigeria's economic growth. The GDP, or gross domestic product, is the dependent variable. The independent or explanatory variables are the exchange rate, inflation rate, monetary policy rate, and credit availability, which are represented by the proxies LEXRATE, LINFLRATE, LMPV, and LCRAVAIL. The exchange rate effectively defined the dependent variable over the long run due to the less than 5% probability values, the positive coefficient of 1.0180, and the t-statistics of 4.1556, which show that the variable is significant.

On the dependent variable, however, LMPR shows a long-term positive influence with a coefficient of 1.8319. Furthermore, the t-statistics of 0.979 and probability values of 0.3493, which are greater than 5%, make the variable meaningless in the long term. With a probability value of  $0.06 > 5\%$ , the long-run correlation between the inflation rate and the dependent variable is positive (coefficient = 0.6573), suggesting that inflation has little impact on the dependent variable. In the end, credit availability is positively correlated with the dependent variable in the long run (coefficient of 0.9016 using t-statistics of 0.6753), and probability values of 0.5123 larger than 5% indicate that it is not significantly correlated with the dependent variable.

**Table 4: F-BOUND TEST**

Test Statistic	Value	Signif.	I(0)	I(1)
			Asymptotic: n=1000	
F-statistic	7.745170	10%	2.45	3.52
k	4	5%	2.86	4.01
		2.5%	3.25	4.49
		1%	3.74	5.06

Source: Author`s Computation (2024)

The result of the bound co-integration test verified the existence of an equilibrium long-run relationship between the independent variables—the exchange rate, credit availability, inflation rate, and monetary policy rate in Nigeria—and the dependent variable, the gross domestic product. The F-statistic for the equation is greater than the I(0) and I(1) bounds. An overview of the estimated boundaries and F-statistic results is also given in Table 4. Economic growth, the dependent variable, and other independent variables have a clear co-integration relationship, according to the data-driven F-statistic value of 7.745170. At the 5% significance level, it is bigger than the upper and lower bound critical values of 2.86 and 4.01, respectively.

#### **4.1 Discussion of Findings**

The research work's conclusions indicate that monetary policy tools have a multifaceted, reciprocal impact on Nigeria's economic growth, with an interaction influence that is tempered by the development of the financial sector. The stationary character of the variables is established by the findings of the unit root test using the Augmented Dickey-Fuller technique, giving confidence in the accuracy of the data that have been analyzed. The fact that inflation and exchange rates have a long-term positive impact on economic growth indicates how helpful these factors are to the economy. Stated differently, fluctuations in inflation and exchange rates serve as a positive stimulus for economic activity. Similarly, lending availability and monetary policy rates have a favorable long-term impact on economic growth. This implies that the system or financial environment is effective and efficient in promoting economic growth. Furthermore, strong empirical support was given by the Autoregressive Distributed Lag (ARDL) model, which showed a notable long-run co-integration of the variables. This validates the results of a long-term equilibrium between economic growth and monetary policy measures. The model's finding of a negative correlation between credit availability and the monetary policy rate raises the possibility that changes to current monetary policies could result in the intended expansion of the economy. Promising economic possibilities will arise from higher levels of local and foreign direct investment as a result of greater economic growth. These results show that strong economic growth may coexist with a strict monetary policy. Sound monetary policies and further financial sector reforms should be given top priority by policymakers to guarantee economic stability and growth. These actions will increase the amount of credit available to companies, supporting a stable framework for monetary policy that supports Nigeria's economic development and expansion. The audience should feel more secure about future economic stability as a result of this emphasis on prudent monetary policy.

#### **5.0 Recommendations and Conclusion**

This study of how monetary policy affects growth in Nigeria highlights the complex yet dynamic relationship between monetary policy tools and economic growth, which is impacted by the expansion of the financial industry. The results show that whereas exchange rates and inflation have long-term positive associations with economic development, loan availability and the monetary policy rate have negative relationships. This finding highlights the possibility that, when incorrectly applied to the macroeconomic environment in isolation and without taking into account the larger role of the financial

sector, the traditional monetary policy tools may be ineffective. Adopting an integrated strategy that goes beyond monetary policy and views comprehensive financial sector reforms as a crucial component of sustained economic growth is imperative for policymakers.

A fair answer is required in light of the study's compelling empirical data and the intricacy of monetary policy and its relationship to economic growth. If credit to the private sector through anticipated liquidity infusion is the way to desired outcomes, then financial sector expansion should be a priority given the twin objectives of economic growth and price stability. In particular, the central bank should work to prevent disruptions from changes in monetary policy, as the financial sector is vital to the nation's resilience and sustainability of economic growth, acting as a buffer against shocks to monetary policy. These findings have significant policy implications for monetary policy and the need to expand the financial sector in order to guarantee that monetary policy relaxation will have the intended effect on economic development.

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