EFFECT OF MONETARY POLICY ON FINANCIAL SECTOR DEVELOPMENT IN NIGERIA

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ABSTRACT

The main objective of the study is to examine the effect of monetary policy on financial sector development in Nigeria from 2007-2020. Expost-facto research design was adopted for this study. Monthly time series data were extracted from the Central Bank of Nigeria Statistical bulletin based on the variables used in the study. Credit to private sector as the dependent variable, while liquidity ratio, Interest Rate and cash reserve ratio as independent proxies to measure monetary policy. The findings showed that monetary policy has significant effect on financial sector development in Nigeria. Based on the result, it was concluded that liquidity ratio, Cash reserve ratio and interest rate were significant on credit to private sector. Therefore, the effect of monetary policy on the Nigeria financial sector as an engine for controlling inflation, unemployment etc. is geared towards finding a positive and constructive role for the economy. Based on the findings, it was recommended that; the Central Bank of Nigeria should manage the interest rate 16.5% properly for attractive and affordable for investors to borrow money from the bank, Government should also minimize the 32.5 % Cash reserve ratio in order to influence the level of bank capacity to raise a volume of funds and also reduce the liquidity ratio from 30% to 25% to prevent the financial sector from folding up with keeping too much of cash idle.

Keywords: Monetary policy, Interest rate, Liquidity ratio, Cash reserve ratio, Credit to Private Sector.

JEL Classification Codes: C23, E58, G21

1. INTRODUCTION

Monetary policy is one of the major economic stabilization weapons which involve measures designed to regulate or control the volume, cost, availability and direction of money and credit in an economy to achieve some specific macro-economic policy objective. it is a deliberate attempt by the monetary authority (Central Bank) to control the money supply and credit condition for the purpose of achieving certain broad economic objective. Globally, the growth and development of private sector in any modern economy greatly depends on efficient and effective monetary policy instruments (Ajie & Azuna, 2018). However, over the years, Nigeria has embarked on various monetary policy frameworks such as the prudential guideline, credit ceiling and financial liberalization policy to facilitate growth and development of the private sector led- economy. Darma and Abdulsalami (2020) revealed that there was an extensive use of direct control measures

before the emergence of financial liberalization policy in 1986. The monetary policy has been based on a medium-term perspective framework. 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.

Given the interest rate structure, this was to give banks the signal to reduce their rate of interest on loan as well as on their time and savings deposits. By the second amendment circular No. 23 of 1989, the MRR was raised by 0.5 percent point from 12.75 percent in 1989 to 13.25 percent. This increased in MRR was to signal upward adjustment of interest on loan, deposit and Government Issue of Treasury bills and Treasury Certificate (Nnanna, Englama & Odoko, 2004). The general interest rate structure has always witnessed a parallel growth rate given the nominal anchor (MRR), thus, showing a great deal of relationship between them as a result of the lowering of MRR. When this happened, other interest rates dropped. In 2021, the MPR proportionately dropped from 13.00 percent to 11.5 percent. In a similar way, the bank lending rate raised from maximum level of 14 percent to 16.5 percent due to the high inflation rate of 20.52 percent (CBN, 2022).

The Nigerian deposit money Banks have witnessed several form of banking distresses in the last 30 years despite the consistent use of monetary policy and guidelines which thus raise the question of how effective monetary policy has been in regulating the banking industry. In this regard, an appropriate analysis of monetary policy is of crucial importance to the banking sector. This is to determine the process through which monetary policy affects the financial system framework of the money market.

The effect of monetary policy on financial sector development in Nigeria spanning from 2007-2020. However, the specific objectives are as follows; to examine the effect of interest rate on credit of DMBs to private sector in Nigeria; to determine the effect of cash reserve ratio on credit of DMBs to private sector in Nigeria; and to ascertain the effect of liquidity ratio on credit of DMBs to private sector in Nigeria.

The motivation of this study is due to the crisis associated with the COVID-19 pandemic and the Russia-Ukraine war, which affected banking monetary policy implementation in Nigeria. It is particularly noticeable in the banking sector, which is exposed to the risk of losing financial liquidity.

This paper is organized into five sections: section one introduces the paper while the review of relevant literature is done in section two; the methodology is discussed in section three while section four presents the results; section five concludes the paper with useful recommendation.

2. LITERATURE REVIEW

2.1 Concept of Monetary Policy

Okpara (2010) defined monetary policy as a measure designed to influence the availability, volume and direction of money and credits to achieve the desired economic objectives. Monetary policy in Nigeria has been conducted under wide raging economic environment since the establishment of the central bank of Nigeria (CBN) in 1959. It is the central bank or monetary authority that controls the supply of money, availability of money and cost of money or rate of interest. Monetary policy is usually used to attain a set of objectives oriented toward the growth and stability, of the economy. These goals include "promotion of price stability, stimulation of economic growth, creation of employment, reduction of pressures on the external sectors and stabilization of the naira exchange rate" (Osuagwu, 2009).

Monetary policy is defined by the Central Bank of Nigeria (CBN) as combination of measures designed to regulate value supply and cost of money in an economy, in consonance with the level of economic activities. Odufalu, (1994) also defined monetary policy as the combination of measures taken by monetary authorities (e.g. the CBN and the ministry of finance) to influence directly or indirectly both the supply of money and credit to the economy and the structure of interest rate for economic growth, price stability and balance of payment equilibrium. The following measures are used to proxy monetary policy in this study.

Interest Rate: The bank rate is the minimum lending rate of the Central Bank at which it rediscounts bill of exchange and government securities held by the deposit money bank (Morgan, 2002). The higher rates of interest as a contractionary monetary policy which would definitely lower demand for loans and lead to decrease in output or production. When the CBN notice an inflationary pressure in the economy, it raises the bank rate. In this period, borrowing from the CBN becomes difficult and the deposit money banks borrow less from it. Also, the deposit money banks borrowers such as the individual and industries borrow less from it due to an increase in its lending rate (Amidu & Hinson 2006). On the contrary in a depressed economy, the Central Bank lowers its bank rate making it cheaper to borrow from them. The deposit money banks also lower their lending rate making it easy for businessmen to borrow money (Jhingan, 2001).

Cash Reserve Ratio: This is the proportion of total deposit liabilities which the deposit money banks and other financial institutions are expected to keep as cash with the Central Bank Nigeria (CBN) (Udeh, 2015). Reserve requirement is one of the most powerful instruments of monetary control, if it changes, they require reserve ratio have another effect. A change in the required ratio changes the ratio by which the banking system will expand deposit through the multiplier effect. If the required reserve ratio increases, it thereby reduces the liquidity position of the banking system.

Liquidity Ratio: The liquidity ratio is the proportion of total deposits to be kept in specified liquid assets mainly to safeguard the ability of the banks to meet depositors' cash withdrawals and ensure confidence in the banking system (Olweny & Chiluwe, 2012). It is generally accepted that liquidity ratio is used to increase or decrease cash availability of commercial banks, however, researchers have argued that the major use of the statutory reserve ratio of banks is to float government

securities, it therefore intends to direct commercial bank credit towards the public sector (Otalu Aladesanmi & Mary, 2014).

Financial Sector Development

Financial sector development is the financial system that eases market imperfections. An economy experiences financial sector development when financial instruments, markets, and intermediaries mitigate the effects of imperfect information, limited enforcement, and transactions costs. (Čihák, Demirgüç-Kunt, Feyen, & Levine, 2013). However, defining Financial sector development in terms of the degree to which the financial system eases market imperfections is too narrow and does not provide much information on the actual functions provided by the financial system to the overall economy. According to Financial Development Index (2012), "Financial development refers to the factors, policies and institutions that lead to an effective financial intermediation and markets, deep and broad access to capital and financial services". This too is limiting and only considers efficiency and access of financial systems.

An elaborate definition of Financial sector development ought to incorporate the four measures of an efficient financial system (1) size of financial institutions and markets (financial depth), (2) degree to which individuals and firms can and do use financial services (access), (3) efficiency of financial intermediaries and markets in intermediating resources and facilitating financial transactions (efficiency), and (4) stability of financial institutions and markets (Nwala & Fodio, 2018)

Financial sector is one that efficiently mobilizes and pools savings; provides timely information to enhance resource allocation; exerts influence to improve corporate governance; facilitates trading, diversification, and management of risks and effectively expedites the exchange of goods and services (Adejoh, 2021). financial sector development is said to occur when the cost of acquiring information, enforcing contracts and executing transactions is reduced to the barest minimum. financial sector development goes beyond just having financial intermediaries and infrastructures in place. It entails having robust policies for regulation and supervision of the financial instruments, markets, and intermediaries. The proxy for financial sector development is credit to private sector

Credit to Private Sector: Timsina (2017) defined bank lending to private sector as the aggregate amount of funds provided by commercial banks to individuals and private business organizations. Hence, this study operationally defines bank credit as a promise by a customer (debtor) to pay a bank (lender) the money borrowed. The credit includes DMBs' credits to governments, core private sectors, other private sectors and individuals.

Bank lending or credit is loan and advances given to a customer by the bank which may be pledged with collateral security. Interests are paid on the amount borrowed or lent in accordance with loan agreement between the customer and the banker. Yakubu and Affoi (2014) opines that credit implies a promise by one party to pay another the money borrowed or goods and services received.

2.2 Theoretical Literature

This section will provide theories that will underpin the study.

The Keynesian Theory

The Keynesian Economists think of monetary policy as working primarily through interest rate. In Keynesian transmission mechanism, an increase in the money supply leads to a fall in interest rate to include the public to hold additional money balances. Consequently, a fall in interest rate may stimulate investment. The increased investments also increase the level of income or output through the multiplier, which may stimulate economic activities. Thus, monetary policy affects economic activity indirectly through their impact on interest rates and investment. Therefore, the Keynesian transmission mechanism is characterized by a highly detailed sector building up of aggregate demand and a detailed specification of portfolio adjustment process that attaches central role to interest as an indirect link between monetary policy and fiscal demand (Keynes, 1924).

On a more analytical note, if the economy is initially at equilibrium and there is open market purchase of government securities by the Central Bank of Nigeria (CBN), this open Market Operation (OMO) will increase the commercial banks reserve (R) and raise the bank reserves. The bank then operates to restore their desired ratio by extending new loans or by expanding bank credit in other ways. Such new loans create new demand deposits, thus increasing the money supply (MS). A rising money supply causes the general level of interest rate (r) to fall. The falling interest rates affects commercial bank performance and in turn stimulate investment given businessmen expected profit. The induced investment expenditure causes successive rounds of final demand spending by GNP to rise by a multiple of the initial change in investment. On the other hand, a fall in money supply causes the general level of interest rate (R) to rise or increase thereby increasing the commercial banks profitability.

Anticipated Income Theory

This theory states that banks should involves themselves in a broad range of lending which may include long-term loans to business, consumer installment loans and amortized real estate mortgage loans considering the fact that the likelihood of loan repayment which generates a cash flow that supplement bank liquidity depends on the anticipated income of the borrower and not the use made of the funds per se. This implies that a high excess reserve increases profitability of banks by increasing the availability of loanable investment funds. (H.V. Prochanow 1944)

Liability Management Theory

The theory holds that banks could satisfy any liquidity need and short-run profit opportunity by issuing money market liabilities such as certificate of deposit (CD). Another version of the theory states that money market bank liabilities should be used along with bank assets to meet liquidity needs, which will lead to commercial banks profitability.

Shiftability Theory

This theory was pioneered by H.G Moulton (1918), the central thesis of this theory holds that the liquidity of a bank depends on its ability to shift its assets to someone else at a predictable price. Better still; the theory of shiftability exposes the banks vulnerability to government security for liquidity. Whether or not a bank can quickly realize liquidity through this means depends on the marketability of the securities and their relative prices. The theory tries to broaden the list of assets demand legitimate for ownership and hence redirected the attention of bankers and the banking authorities from loan to investment as source of bank liquidity.

It is hypothesized that an increase in capital investment will lead to commercial banks profitability. However, increase in profits may also motivate further increase in capital investment, which in turn expands the scope of banking operations for increased profitability. Adequate capital investment provides for a bank to perform the intermediation function and provide related financial services. It also provides protection in conditions of near economic collapse against unanticipated adversity leading to loss in excess of normal expectations and permits banks to continue operations in periods of difficulty until a normal level of earning is restored.

2.3 Empirical Literature

This section will provide empirical studies both local and international scholars. Andabai and Eze (2019) analyzed monetary policy and its effect on private sector growth in Nigeria; for the period 1990-2018. Secondary data were used and collected from the Central Bank of Nigeria Statistical Bulletin. The study used Private Sector Output is proxy for Private Sector growth and employed as the dependent variable; whereas, broad money supply, liquidity rate and Credit Ratio respectively were used as the explanatory variables to measure monetary policy. Hypotheses were formulated and tested using time series econometric techniques. The study revealed a significant effect of credit ratio on private sector output in Nigeria. Liquidity ratio had a significant effect on private sector output in Nigeria. Broad money supply had a significant effect on private sector output in Nigeria. Hence, there is a long-run equilibrium effect on monetary policy and the private sector economy in Nigeria; and, the result confirms that about 73% short-run adjustment speed from long-run disequilibrium. The coefficient of determination indicated that about 65% of the variations in private sector led- economy can be explained by changes in monetary policy variables. However, the study did not make use of cash reserve ratio as a monetary policy measure.

Afolabi, et al. (2018) investigated the relationship that exists between monetary policy instruments and Deposit Money Banks Loans and Advances in Nigeria. An annual time series data covering a period of 36years from 1981-2016 were sourced from Central Bank of Nigeria and used for the study. The relationship between monetary policy and credit creation of Deposit Money Banks was captured by monetary policy variables and structural changes in monetary policy. The study employed Toda and Yamamoto granger non-causality model to examine the relationship existing between Deposit Money Banks loan and advances and monetary policy variables in Nigeria. The findings revealed that structural changes in monetary policy system exerted positive significant impact on loan and advances of Deposit Money Banks in Nigeria. Findings also revealed bidirectional relationship existing between MPR and loan and advances of Deposit Money Banks in Nigeria. Precisely, MPR proved to be a significant variable which causes Deposit Money Bank

loans and advances in Nigeria. The other explanatory variables; broad money supply (LM2), liquidity ratio (LR), inflation rate (IFR) and cash reserve ratio (CRR) does not granger cause loan and advances of Deposit Money Banks in Nigeria within the study period. The study concluded that the structural change in monetary policy system and monetary policy rate have significant impact on loan and advances of deposit money banks in Nigeria. Hence, the study did not expand on the technique of data analysis

Ayub and Seyed (2016) in their study the relationship existing between monetary policy and bank lending behavior and the influence of bank specific features on this relationship in the banks listed on the 8 Tehran Stock Exchange. The study used Iran's bank loan aggregated series and bank's size and capital structure data. The study used the growth rate of M2 as the indicators of Irans' monetary policy. Using Vector error correction model (VECM) and quarterly data for the period 2007: Q1 to 2014: Q4. The results showed a bidirectional causal link between M2 and banks lending behavior trading on the Tehran Stock Exchange. It was also observed that the banks' capital structure as one of the banks specific feature variables have a negative impact on bank lending behavior in accepted banks in Tehran Stock Exchange. However, the monetary policy proxied used in the study was money supply, it fails to add up other monetary policy measures.

Udude and Uwalaka (2015) investigated the effect of monetary policy on Banking sector performance in Nigeria. This is to ascertain the factors that influence the banking sector performance using bank's deposit liabilities as proxy for bank performance. The study period covers 36 years from 1970 to 2006, using selected indicator and employing the OLS regression technique. They tested the null hypothesis of no significant relationship between bank deposit liabilities and chosen indices of banking performance, namely Exchange Rate (EXR), Deposit Rate (DR) and Minimum Discount Rate (MDR). Results showed that overall; monetary policy has a significant effect on the banks deposit liabilities. Main while, on individual basis, they discovered that Deposit Rate (DR) and Minimum Discount Rate (MDR) had a negative influence on the banks deposit liabilities in Nigeria, whereas Exchange Rate (EXR) had a positive and significant influence on the banks deposit liabilities in Nigeria. We conclude therefore that monetary policy plays a vital role in determining the volume of bank's deposit liabilities in Nigeria. They recommended that government and its monetary authorities should strive to create a conducive environment for banking sectors to grow in the country by packaging appropriate monetary policies that would guarantee and enhance growth and development of the banking sectors in Nigeria. However, the study used ordinary least square regression which is not suitable for time series data.

Uwazie and Aina (2015) examined the cause and effect of monetary policy on Commercial Banks credit in Nigeria for the period 1980-2013. They specified that there is linear relationship among bank credit, broad money supply (LM2), monetary policy rate (MPR), liquidity ratio (LR), inflation rate (IFR) and exchange rate (EXR). The result of the study showed that there was a causal effect between monetary policy and commercial banks credit in Nigeria for the period of the study. Conclusively, there existed cause and effect relationship between bank credit and the monetary policy variables. Money supply proved to be a significant parameter which causes commercial bank credit. Also, causality runs from monetary policy rate to commercial bank loans and advances. However, the study used yearly data which is different from this study which uses monthly data.

Otalu, Aladesanmi and Mary (2014) assessed the impact of monetary policy on the deposit money banks performance in Nigeria, and in their study, the interest rate and money supply, liquidity ratio and the cash reserve ratio were used as proxy for monetary policy. The study used regression analysis to examine the relationship between monetary policy and bank performance in Nigeria. The results of the diagonistic test showed that credit creation of commercial banks is significantly being influenced by the interest rate, money supply, liquidity ratio and the cash reserve. Precisely, money supply and cash reserve ratio appeared to have statistically influenced deposit money banks' credit creation. However, the study used ordinary least square regression which is not suitable for time series data.

Jegede (2014) empirically researched on the impact of monetary policy on commercial bank lending in Nigeria between 1998 and 2008. Vector Error Correction Mechanism of Ordinary Least Square was used as the tool for analysis. The findings of the study indicated that there exists a long run relationship among the variables in the model. Specifically, the findings also found that exchange rate and interest significantly influenced commercial bank lending, while liquidity ratio and money supply exert negative impact on commercial banks' loan and advance. However, the study used limited scope of less than 30 observation which is not suitable for time series data.

Agbonkhese and Asekome (2013) examined the effects of monetary policy on the deposit money banks' credit creation in Nigeria. The study covered the period between 1980 and 2010 and used Ordinary Least Square (OLS) method of data analysis. Their empirical results revealed that there was a positive and direct relationship between the total deposits and treasury bills rate. Whereas, the reserve requirement and interest rate had negative effects on the total credit creation. Therefore, the reserve requirements is not an effective monetary policy instrument to influence bank credit to achieve a desired monetary policy objective since money deposit banks could on their own easily raise and keep substantial deposits as reserve. However, the study used ordinary least square regression which is not suitable for time series data.

Tsenkwo and Longdu'ut (2013) examined the Relationship between Monetary Policy Rate (MPR) and Banking Rates: Evidence from Regression and Multivariate Causality Analysis. The study used descriptive statistics and econometrics analysis to subject the raw data from secondary source to series of refining like Unit Root Test, Ordinary Least Square Test, Stability Test, and Granger causality test. These tests were conducted, using Granger causality test, to know the direction of their relationships and how they are caused. The finding revealed that almost all the variables, with the exception of bank savings rate, exhibit a strong sign of co-moving in the long run with the tendency of converging. The research revealed unidirectional causality between monetary policy rate and bank lending rate; bank lending rate and bank savings rate. And there exist a bi-directional causality between monetary policy rate and bank savings rate.

Amidu (2006) examined whether monetary policy factors have influence bank lending behaviour in Ghana. The study uses panel cross sectional data covering the period from 1998 to 2004 from the database of Bank of Ghana, ISSER and International Financial Statistics of IMF. The bank loan is represented by freely allocated bank loan which is presumably more sensitive to changes in monetary policy. Changes in money supply and central bank' prime rate is a proxy of monetary policy. The findings revealed that Ghanaian banks' lending behaviours are affected significantly by the country's economic activities and changes in money supply. The results of this study also

support previous studies that the central bank's prime rate and inflation rate negatively but statistically insignificantly affect banks' lending. With the firm level characteristics, the study reveals that bank size and liquidity significantly influence banks' ability to extend credit when demanded. However, the study used limited scope of less than 30 observation which is not suitable for time series data.

3. METHODOLOGY

The study adopted the Keynesian Theory, which states that the falling interest rates affects commercial bank performance and in turn stimulate investment given businessmen expected profit.

The research design adopted for this study is expost-facto research design. In carrying out this study, monthly data were sourced from Central Bank of Nigeria Statistical Bulletin from the period of 2007 to 2020 due to Bank recapitalization. Time series data were extracted based on the variables used in the study. credit to private sector (CPS) as the dependent variable, while liquidity ratio (LQR), Interest rate (INR), and cash reserve ratio (CRR) as independent variables. The data obtained were analysed using OLS ARDL approach through Eviews-10 statistical package.

The balanced monthly time series data was collected. In analysing the data set, this study utilized the unit root test, cointegration and ARDL moddel with the aid of Eviews 10 software. The autoregressive distributed lag technique was used for this study given its superiority over pure cross section or pure time series. Time series data is the subject of one of the most active and innovative bodies of literature in econometrics, partly because time series data provide such a rich environment for the development of estimation techniques and theoretical results

The Theoretical framework shows the building block of the model and methodology adopted.

CPS= f(LQR, INR, CRR)---------- (1)

The following multiple regression model was formulated:

$$CPS = \beta_{0it} + \beta_1 (LQR)t + \beta_2 (INR)t + \beta_3 (CRR)it + \mu t \text{ ----------(2)}$$

where:

CPS	=	Credit to private sector (dependent variable) measured as loans provided banks to the private sector
β_0	=	Constant term, which represents when all explanatory variables are held constant
β_1	=	Coefficient of the parameter estimates
LQR	=	Liquidity ratio measured as the proportion of total deposits to be kept in specified liquid assets.
INR	=	Interest Rate measured as the minimum interest rate charged by Central bank of Nigeria.

CRR = Proportion of total deposit liabilities which the bank is expected to keep as cash with the Central Bank Nigeria.

μ = Error term

Building equations (3) into an ARDL model, we have:

$$\Delta CPS_t = \mu + \alpha_1 CPS_{t-1} + \alpha_2 LQR_{t-1} + \alpha_3 INR_{t-1} + \alpha_4 CRR_{t-1} + \sum_{i=1}^{p-1} \lambda_1 \Delta CPS_{t-i} + \sum_{i=0}^{q-1} \lambda_2 \Delta LQR_{t-1} + \sum_{i=0}^{q-1} \lambda_3 \Delta INR_{t-1} + \sum_{i=0}^{q-1} \lambda_4 \Delta CRR_{t-1} + \varepsilon_t \quad -----3$$

4. RESULTS AND DISCUSSIONS

Table 1: Descriptive Statistics

	CREDIT TO PRIVATE SECTOR	INTEREST RATE	LIQUIDITY RATIO	CASH RESERVE RATIO
Mean	-1.860011	-8.070011	-3.660010	-6.210012
Median	0.156554	0.457588	-0.144699	0.016812
Std. Dev.	1.000000	1.000000	1.000000	1.000000
Skewness	-0.175749	-0.635469	2.561555	0.098059
Kurtosis	1.816699	2.206248	9.231746	1.585586
Jarque-Bera	10.22184	15.06239	436.5844	13.67849
Probability	0.006031	0.000536	0.000000	0.001071
Observations	161	161	161	161

Source: Eviews 10, 2022

Table 1 The table 2 revealed the data used in the study with credit to private sector, interest rate, liquidity ratio and cash reserve ratio having a mean value of -1. 860011, -8.070011, -3.660010 and -6.210012 respectively. The deviation from the mean (standard deviation) was 1.000000, 1.000000, 1.000000 and 1.000000 respectively; this means that the data were normally distributed. In like manner, the Jacque-Bera values confirm the normality of the data and the observation were 161 value of data.

Table 2: Correlation Matrix

	CREDIT TO PRIVATE SECTOR	INTEREST RATE	LIQUIDITY RATIO	CASH RESERVE RATIO
CREDIT TO PRIVATE SECTOR	1	0.68837	-0.41606	0.846701
INTEREST RATE	0.688375	1	0.06405	0.8492
LIQUIDITY RATIO	-0.416063	0.06405	1	0.03494
CASH RESERVE RATIO	0.846701	0.849236	0.03494	1

Source: Eviews 10, 2022

From table 2, it explained the relationship between monetary policy and financial sector development in Nigeria where the credit to private sector was correlated with interest rate to the extent of 0.688375. Also, credit to private sector was correlated with liquidity ratio to the extent of -0.416063. While, credit to private sector was correlated with cash reserve ratio to the extent of 0.846701. However, the correlation matrix result suggests that there is no multicollinearity among the independent variables of the study.

Table 3: Summary of Unit Root Test Results

Variables	*ADF Test Statistic*	*Order of Integration*
Credit to Private Sector	-3.989677 (-3.474874)	*I(1)*
Interest rate	-12.87117 (-3.471719)	*I(1)*
Liquidity ratio	-12.58179 (-3.471719)	*I(1)*
Cash reserve ratio	-12.60083 (-3.471719)	*I(1)*

Source: Eviews 10, 2022

From the Table 3, it was discovered that credit to private sector was found stationary at first difference, that is, at order I(1). This means that their ADF test statistic were found greater than their critical values. Interest ratio was also found stationary at first difference, that is, at order I(1). This means that their ADF test statistic were found greater than their critical values. Also, liquidity ratio was found stationary at first difference, that is, at order I(1). This means that their ADF test statistic were found greater than their critical values. However, Cash reserve ratio was found stationary at first difference, that is, at order I(1). This means that their ADF test statistic were found greater than their critical values. The ARDL approach to co-integration was applied to examine the long run relationship among the variables.

Table 4: Cointegration Test

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None	0.140865	35.15374	47.85613	0.4399
At most 1	0.052206	11.46830	29.79707	0.9488
At most 2	0.014859	3.103907	15.49471	0.9620
At most 3	0.004914	0.768435	3.841466	0.3807

Source: Eviews 10, 2022

Cointegration is the statistical implication of the existence of a long-run relationship between variables. The test stipulates that if variables are integrated of the same order, a linear combination of the variables will be integrated of that same order. The idea behind cointegration analysis is that, although time series variables may tend to trend up and down over time, groups of variables may drift together. If there is some tendency for some linear relationships to hold among a set of variables over long periods of time, then cointegration analysis helps us discover it. If the variables are integrated of different orders, however, there is some linear combination of the two series that is stationary. However, there is no cointegration among the variables, therefore the ARDL model in OLS was run.

Table 5: ARDL Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(CREDIT_TO_PRIVATE_SECTOR(-1))	-0.052260	0.080593	-0.648448	0.5177
D(CASH_RESERVE_RATIO)	0.385316	0.098051	3.929740	0.0001
D(CASH_RESERVE_RATIO(-1))	0.027689	0.093502	0.296139	0.7675
D(LIQUIDITY_RATIO)	-0.103605	0.036100	-2.869953	0.0047
D(LIQUIDITY_RATIO(-1))	-0.061806	0.040001	-1.545126	0.1244
D(INTEREST_RATE)	-0.162479	0.047481	-3.421970	0.0008
D(INTEREST_RATE(-1))	0.010429	0.049697	0.209856	0.8341
C	-0.014535	0.011945	-1.216893	0.2255
R-squared	0.192229	Mean dependent var		-0.019978
Adjusted R-squared	0.154783	S.D. dependent var		0.160244
S.E. of regression	0.147321	Akaike info criterion		-0.943401
Sum squared resid	3.277226	Schwarz criterion		-0.788991
Log likelihood	83.00038	Hannan-Quinn criter.		-0.880697
F-statistic	5.133450	Durbin-Watson stat		2.002474
Prob(F-statistic)	0.000029			

Source: Eviews 10, 2022

Thus, showing that a highly significant lagged error correction terms proves no long-run relationship between the variables and its ability to adjust from dis-equilibrium state towards equilibrium level.

The coefficient of determination (R-square), which was used to measure the goodness of fit of the estimated model, indicates that the model is reasonably fit in prediction. It showed that 19.22 percent changes in credit to private sector were collectively due to interest rate, liquidity ratio and cash reserve ratio; while remaining percent unaccounted variations was captured by the white noise error term. It showed that to interest rate, liquidity ratio and cash reserve ratio has an effect prediction on credit to private sector within the period under review.

Table 6: Statistical Test of Hypothesis

CASH_RESERVE_RATIO

Wald Test:
Equation: Untitled

Test Statistic	Value	df	Probability
F-statistic	7.736078	(2, 151)	0.0006
Chi-square	15.47216	2	0.0004

Source: Eviews 10, 2022

The Wald-test indicates that the F-value for cash reserve ratio was found to be 7.736078 and its probability value is 0.0006. Since the probability value is less than 0.05 or 5 percent level of significance, we reject the null hypothesis and conclude that cash reserve ratio has significant effect on financial sector development in Nigeria.

LIQUIDITY_RATIO

Wald Test:
Equation: Untitled

Test Statistic	Value	df	Probability
F-statistic	5.043945	(2, 151)	0.0076
Chi-square	10.08789	2	0.0064

Source: Eviews 10, 2022

The Wald-test indicates that the F-value for liquidity ratio was found to be 5.043945 and its probability value is 0.0076. Since the probability value is less than 0.05 or 5 percent level of significance, we reject the null hypothesis and conclude that liquidity ratio has significant effect on financial sector development in Nigeria.

INTEREST RATE

Wald Test:
Equation: Untitled

Test Statistic	Value	df	Probability
F-statistic	5.877822	(2, 151)	0.0035
Chi-square	11.75564	2	0.0028

Source: Eviews 10, 2022

The Wald-test indicates that the F-value for interest rate was found to be 5.877822 and its probability value is 0.0035. Since the probability value is less than 0.05 or 5 percent level of significance, we reject the null hypothesis and conclude that interest rate has significant effect on financial sector development in Nigeria

Table 7: Serial Correlation Test

F-statistic	0.410950	Prob. F(2,149)	0.6638
Obs*R-squared	0.872250	Prob. Chi-Square(2)	0.6465

Source: Eviews 10, 2021

The Breusch-Godfrey Serial Correlation LM Test indicates that, there is no autocorrelation. This is given by the F-statistic of 0.410950 and its corresponding P-value of 0.6638, and corroborated by observed R-squared of the auxiliary regression P-value of 0.872250.

Table 8: Heteroskedasticity Test

F-statistic	1.534562	Prob. F(7,151)	0.1596
Obs*R-squared	10.55983	Prob. Chi-Square(7)	0.1590
Scaled explained SS	57.55095	Prob. Chi-Square(7)	0.0000

Source: Eviews 10, 2022

Following the heteroskedasticity test result presented in table, it is important to mention that the tests for heteroskedasticity was conducted for the collated data in order to inspect the possibility for spurious regression among the variables (constant variance). The result recommends that we accept the alternative hypothesis of no constant variance among the studied firms showing that the data is not free from the consequences of heteroskedaticity.

Discussion of Findings

Based on the findings of the research, the study is consistent with the research of Andabai and Eze (2019), Afolabi, Adeyemi, Salawudeen and Fagbemi (2018). that monetary policies has significant

effect on financial sector development in Nigeria. This implies that, it is becoming increasingly clear that the ability to sustain stabilization policies may hinge critically on monetary changes in the financial sector. Specifically, such changes in the financial sector may be crucial for the efficient conduct of monetary policy.

Also, there is no heteroskedascity problem because the chi-square which stands at 0.0000 and F-statistics which stands at 1.534562. Therefore, since the p-value of the walt test is less than 0.05, which is the accepted level of significance for this research, the researcher hereby rejects H0 and state that monetary policy has a significant effect on financial sector development in Nigeria.

5. CONCLUSION AND POLICY RECOMMENDATIONS

The research work studied the effect of monetary policy on financial sector development in Nigeria. The commercial banks played an indispensable role in Nigeria's economy by providing funds for the investors without inconveniencing the companies. Today, the activities and performance of commercial banks in Nigeria have much wider implication and this arises partly because of the growing influence of ideas and structure associated with the monetary policy. The Monetary policy has critical impact on the developing nations and a tremendous influence on the growth rate of the financial sector and the economy at large.

Drawing from the research findings, the recommendations are proffered as follows:

i. The Central Bank of Nigeria should manage the recent 16.5% interest rate properly for it to be attractive and affordable for investors to borrow money from the bank, so as banks can employ in more investment activities that can improve the financial sector.
ii. The Monetary authorities should minimize the 32.5 % Cash reserve ratio in order to influence the level of bank performance with capacity to raise a volume of funds with sufficient to improve financial sector in Nigeria.
iii. The reduction of liquidity ratio should be asserted from 30% to 25% to prevent the banks from folding up with keeping too much of cash idle. The reversion to the modern technique of controlling liquidity in the economy should be encouraged and this should be strictly adhering to ensure financial economic stability.

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