

EFFECT OF MONETARY POLICY ON THE PERFORMANCE OF LISTED DEPOSIT MONEY BANKS IN NIGERIA

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Abstract: *This study examines the effect of monetary policy on the performance of listed deposit money banks in Nigeria from 2006-2018. The research design adopted for this study was ex post-facto research design. Panel time series data were extracted based on the variables used in the study. Net profit margin (NPM) as the dependent variable, while liquidity ratio (LQR), Interest Rate (INR), Loan to deposit ratio (LDR) and cash reserve ratio (CRR) as independent proxies to measure monetary policy. The findings show that monetary policy has significant effect on the performance of listed deposit money banks in Nigeria. Based on the result, it was concluded that liquidity ratio and loan to deposit are significant on net profit margin, likewise interest rate and cash reserve ratio were insignificant on net profit margin. Therefore, the effect of monetary policy on the Nigeria commercial banks 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 monetary policy rate properly, with the recent increase of loan to deposit, Government should also employ other measures to control the loan to deposit and the monetary authorities should also minimize the 22.5 % Cash reserve ratio in order to influence the level of bank performance with capacity to raise a volume of funds and also reduce the liquidity ratio from 30% to 25% to prevent the banks from folding up.*

Keywords: *Cash reserve ratio; Interest rate; Liquidity ratio; Loan to Deposit ratio; Monetary policy.*

JEL Classification: *E22; E 44; E52.*

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 objectives. 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. 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.

Globally, the role of the banking industry in development process cannot be over-emphasized as they play so many functions. The most important banking industry in

Nigeria is the commercial banks. In order to make profit, commercial banks invest customer deposits in various short term and long term investment outlet, however core of such deposits are used for loans. Hence, the more loans and advances they extend to borrowers, the more the profit they make (Solomon, 2012).

Prior to 1986 direct monetary instruments such as selective credit controls, administered interest and exchange rates, credit ceilings, cash reserve requirements and special deposits to regulate the banking system were employed. The fixing of interest rates at relatively low levels was done mainly to promote investment and growth. Occasionally, special deposits were imposed to reduce the amount of excess reserves and credit creating capacity of the banks.

According to Ologunde, Elumilade, and Asaolu (2006), interest rate along with monetary aggregates formed targets of monetary policy in Nigeria. Using the direct monetary policy measures, the monetary authorities directly influence items of the balance sheet of commercial banks. In such a system, interest rates are set and credits are allocated by monetary authorities in accordance with the government's economic plan.

In Nigeria 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.

By manipulating monetary policy instruments central banks affect the rate of growth of the money supply, the level of interest rate, security prices, credit availability and liquidity creation from the hand of commercial bank. These factors, in turn can exert monetary imbalances or shocks on the economy by influencing the level of investment, consumption, imports, exports, government spending, total output, income and price level in the economy (Mishra & Pradhan, 2008). The Nigeria economy has continued to witness slow growth when compared to its international counterparts such as Brazil and South Africa who are all considered as the same level some years back. The problem of ineffective credit delivery to the productive sectors remains an issue and thus raises doubt on the potency of monetary policy instruments in Nigeria.

Evidence also showed that monetary policy changes on loan supply of less liquid banks, deposit base and induce bank's ability to perform their expected roles within the financial system.

The Nigerian DMBs have witnessed several form of banking distress 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 shock transmission mechanisms is of crucial importance for central banks. This is to determine the process through which monetary policy influence the entire economy within the financial system framework.

It is necessary to state the primary objective of this research is to assess the effect of monetary policy on the performance of listed deposit money banks in Nigeria

spanning from 2006-2018. The hypotheses are stated based on objectives of this study include:

- Ho₁:** Interest rate has no significant relationship on net profit margin in deposit money banks in Nigeria.
- Ho₂:** Cash reserve ratio has no significant relationship on net profit margin in deposit money banks in Nigeria.
- Ho₃:** Liquidity ratio has no significant relationship on net profit margin in deposit money banks in Nigeria.
- Ho₄:** Loan to deposit ratio has no significant relationship on net profit margin in deposit money banks in Nigeria.

2. Literature Review

2.1. Concept of Monetary Policy

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” (Ogwuma, (1997:3). Monetary theory provides insight into how to craft optional monetary policy, also money has some relationship with economic activity and it explain why monetary policy has a central role in macroeconomics management. This economics activity can be define as an activity that aims at production, processing, packing, selling, distribution, purchase and consumption of goods and services as well as money and wealth with a view to fulfilling some wants/needs on commercial or self-reliance basis. It is generally known that this relationship works out through changes in the liquidity of the system. A change in the money supply will alter the liquidity in the hands of the public and this will, in turn influence their income and expenditure. For example, an increase in the money supply will increase the liquidity in the public and their spending on either real asset or financial assets.

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. He added that the CBN is empowered by decree 25 of 1991 Act, to formulate and implement monetary policy in Nigeria, in consultation with the ministry of finance subject to the approval of the President. (Onyido, 1993) sums it up when he said that monetary policy is therefore applied to influence the availability and cost of credit in order to control the money supply policy. He generally describes the action taking by the Central Bank as using

tools / instrument at its disposal to influence monetary conditions in particular, the quantity and supply of money in the macro-economic goods.

These goals would normally include price stability, full employment, high economic growth rate and balance of payments equilibrium. The attainment of these goals will result into the country achieving both internal and external balance of trade and payment. The practice of monetary policy using tools / instruments to regulate the quantity of money supply to achieve stability in the economy is based on the premise that there is a stable relationship between the quantity of money supplied in an economy and economic activities. Even though, the way and manner with which the central bank regulates its money supply vary from place to place the approach can be divided into two main groups. The first group advocates that monetary policy should target price stability as its single important objectives. The other macro-economic goal agitates for due regulation of money supply and in extension in the control of persistent price increase to ensure sustainable and balance development in the economy.

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 observed by Otalú et al. (2014) translate to 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, 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 instrument 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 (Otalú et al., 2014).

Loan to Deposit

The loan to deposit ratio is the commonly used statistic for assessing bank's liquidity by dividing the bank's total loans by its total deposits. High ratio refers to the bank's inadequate liquidity to cover any unforeseen fund requirements. Conversely, if the ratio is too low, may be indicate that inadequate lending opportunities or reluctance to accept the available lending risks. So the bank may not be earning as much as it could be (McNaughton & Bartrop, 1992).

Loan to deposit ratio is a useful instrument to determine bank working capital, and it influences the profitability of the banks. The bank profit is based on the interest charged against the deposits; it means the profit is generated through the positive difference between interest of loans and interest on deposits supported a study by Joni Tamkin Borhan & Towpek (2006). In general banks may not be earning optimal return if the LDR ratio is too low. The intention of this study is to get empirical evidence about influence of LDR to ROA in locally owned commercial banks in Malaysia. Many studies analyzed various factors influence of ROA viz. capital and ROA (Berger, 1987), loan ratio and profitability (Bashir & Hasan, 2003) ratio of equity to assets and profitability (Athanasoglou et al. 2006).

2.2. Concept of Financial Performance

Financial performance has received significant attention from scholars in the various areas of business and strategic management. It has also been the primary concern of business practitioners in all types of organizations since financial performance has implications to organization's health and ultimately its survival. High performance reflects management effectiveness and efficiency in making use of company's resources and this in turn contributes to the country's economy at large. (Naser & Mokhtar, 2004).

There have been various measures of financial performance. For example, return on sales reveals how much a company earns in relation to its sales, return on assets determines an organization's ability to make use of its assets and return on equity reveals what return investors take for their investments. The advantages of financial measures are the easiness of calculation and that definitions are agreed worldwide. Traditionally, the success of manufacturing system or company has been evaluated by the use of financial measures (Tangen, 2003).

2.3. Empirical Review

Afolabi, Adeyemi, Salawudeen and Fagbemi (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 recommended that monetary authority should formulate policies that will stabilize interest rate so as to boost the investors' confidence.

Olweny and Chilwe (2012) researched on the relationship between monetary policy and private sector investment in Kenya for the period between 1996 and 2009. The study employed vector error correction model to determine the dynamic of relationship and level of cointegration among the variables. The study revealed that government domestic debt and Treasury bill rate have negative relationship with private sector investment; The results of the diagnostic test shows that contracting monetary policy by 1% has the effect of contracting investment by 2.63% and vice versa.

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. We 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, we 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. We 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.

Ajayi and Atanda (2012) investigated the impact of monetary policy instruments on banks performance between 1980 and 2008. The study used Engle-granger two-step co-integration approach for it analysis. The result indicated that bank rate, inflation rate and exchange rate are credit enhancing variables, while liquidity ratio and cash reserves ratio exert negative impact on banks total credit. Although, it is only cash reserve ratio and exchange rate found to be significant at 5% critical value. The study found that monetary policy instruments are not significant to stimulate credit in the long-run, while banks total credit is more responsive to cash reserve ratio.

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.

Andreas (2001) investigated the reaction of bank lending to monetary policy measures in Germany. Empirical evidence from dynamic panel estimations based on a data set that comprises individual balance sheet information on all German banks. It shows that the average bank reduces its lending more sharply in reaction to a restrictive monetary policy measure the lower its ratio of short-term interbank deposits to total assets. A dependence on its size can only be found if explicitly controlled for this dominating effect and/or if the very small banks are excluded. 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 that there exist 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.

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.

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 diagnostic 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.

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.

Udeh (2015) investigated the impact of monetary policy instruments on profitability of Zenith Bank Plc in Nigeria from 2005 to 2012. Pearson Product moment correlation technique was used to analyze the data collected while t-test statistic was employed in testing the hypotheses. The result shows that cash reserve ratio, liquidity ratio and interest rate did not have significant impact on the profit before tax of Zenith Bank Plc. However, minimum rediscount rate was found to have significant impact on the profit before tax of the bank.

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.

2.4. Theoretical Framework

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.

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 involve 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.

3. Methodology

The research design adopted for this study is ex post-facto research design. In carrying out this study, secondary data were sourced from Central Bank of Nigeria Statistical Bulletin and banks Annual Report from the period of 2006 to 2018 due to Bank reforms. Panel time series data were extracted based on the variables used in the study. Net profit margin (NPM) as the dependent variable, while liquidity ratio (LQR), Interest rate (INR), Loan to deposit ratio (LDR) and cash reserve ratio (CRR) as independent variables. The population constitutes the Deposit money banks in Nigeria, while the sample size consists of the quoted deposit money banks in Nigeria. The data obtained were analysed using Ordinary Least square (OLS) through Eviews-10 statistical package.

The following multiple regression model was formulated:

$$\text{NPM} = \beta_0 + \beta_1 (\text{LQR})_{it} + \beta_2 (\text{INR})_{it} + \beta_3 (\text{LDR})_{it} + \beta_4 (\text{CRR})_{it} + \mu_{it}$$

where:

NPM	=	Net profit margin(dependent variable) measured as gross profit divided by tax of the bank
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.
LDR	=	Proportion of total loans to depositors
μ	=	Error term

4. Analysis of the Results

The results for data analysis on the effects of monetary policy on the performance of listed deposit money banks in Nigeria, ranging from descriptive statistics, the summary of stationarity test results, summary of regressions analysis are presented below.

Descriptive Statistics Test Result

The descriptive statistics test result is summarized and presented in the table below.

Table 1: Summary of Descriptive Statistics Test Results

	NET PROFIT MARGIN	CASH RESERVE RATIO	INTEREST RATE	LIQUIDITY RATIO	LOAN TO DEPOSIT RATIO
Mean	15.58636	13.15909	11.27273	29.54545	73.40311
Median	17.47500	12.00000	12.00000	30.00000	63.93000
Maximum	127.1900	22.50000	14.00000	35.00000	1380.010
Minimum	-338.9100	1.000000	6.000000	25.00000	3.550000
Std. Dev.	41.57390	8.439461	2.745825	2.581093	116.1825
Skewness	-4.892576	-0.243267	-0.931366	-0.132583	10.89083
Kurtosis	42.95659	1.465710	2.582533	3.617188	123.0444
Jarque-Bera	9307.531	14.24918	20.04228	2.481781	81868.02
Probability	0.000000	0.000805	0.000044	0.289127	0.000000
Sum	2057.400	1737.000	1488.000	3900.000	9689.210
Sum Sq. Dev.	226419.0	9330.409	987.6818	872.7273	1768286.
Observations	132	132	132	132	132

Source: E-view 10

The descriptive statistics test provides brief descriptive coefficients that summarize the data set used in this study. It is a representation of the entire population of the study. The descriptive statistics is broken down into measures of central tendency and measures of variability, or spread. The descriptive statistics shows the mean, maximum, minimum, standard deviation, skewness and kurtosis with one hundred and thirty-two (132) observations of the variables used in the study. The mean describes the average value of the series and the standard deviation measures the deviation of the data from the average.

Net profit margin has a Mean of 15.58636 with Standard Deviation of 41.57390. It also has Skewness of -4.892576 with Kurtosis of 42.95659. In a like manner, Cash reserve ratio has a Mean of 13.15909 with Standard Deviation of 8.439461. Also, it has a Skewness of -0.243267 with Kurtosis of 1.465710. Interest rate has a mean of 11.27273 with standard deviation of 2.745825. It also has a Skewness of -0.931366 with Kurtosis of 2.582533. Liquidity ratio has a mean of 29.54545 with standard deviation of 2.581093. It also has a Skewness of -0.132583 with Kurtosis of 3.617188. Loan to deposit ratio has a mean of 73.40311 with standard deviation of 116.1825. It also has a Skewness of 10.89083 with Kurtosis of 123.0444. This implies that the data were normally distributed.

The correlation matrix result suggests that there is no multicollinearity among the independent variables of interest. The possible existence of multicollinearity is further tested through computing the variance inflation factor (VIF) from table. According to Gujarati (2003), there is no consequence of multicollinearity if the mean VIF is less than 10. The table presents the mean variance inflation factor (VIF) result

of the explanatory variables. Therefore, the results of VIF, indicate that there is no unacceptable level of multicollinearity among the independent variables of interest further confirming that there is no presence of multicollinearity.

Table 2: Correlation Matrix

Covariance Analysis: Ordinary					
Date: 10/28/19 Time: 12:58					
Sample: 2008 2018					
Included observations: 132					
Balanced sample (listwise missing value deletion)					
Correlation					
t-Statistic					
Probability	NET_PROFIT_MARGIN	CASH_RESERVE_RATIO	INTEREST_RATE	LIQUIDITY_RATIO	LOAN_TO_DEPOSIT_RATIOS
NET_PROFIT_MARGIN	1.000000				
CASH_RESERVE_RATIO	0.119968	1.000000			
	1.377798	-----			
	0.1706	-----			
INTEREST_RATE	0.131852	0.870729	1.000000		
	1.516584	20.18827	-----		
	0.1318	0.0000	-----		
LIQUIDITY_RATIO	0.159854	0.292456	0.566941	1.000000	
	1.846358	3.486964	7.847115	-----	
	0.0671	0.0007	0.0000	-----	
LOAN_TO_DEPOSIT_RATIOS	0.045587	0.139029	0.106801	0.009840	1.000000
	0.520311	1.600724	1.224724	0.112193	-----
	0.6037	0.1119	0.2229	0.9108	-----

Source: E-view 10

The Regression result from the table 3 reveals that interest rate and cash reserve ratio has insignificant effect on net profit margin with a p-value of 0.4277 and 0.6205 respectively and a coefficient of -1.578890 and 0.280765 respectively. This implies that an increase in interest rate and cash reserve ratio, net profit margin decreases by -1.578890, 0.280765 and the Hypotheses is therefore being accepted. The result from the table above reveals that liquidity ratio and loan to deposit ratio has a significant effect on net profit margin with a p-value of 0.0000 and 0.0000 respectively and a coefficient of 3.247503 and 0.00710. This implies that as liquidity ratio and loan to deposit ratio increases, net profit margin increases by 3.247503 and 0.00710 and vice versa. Liquidity ratio and loan to deposit ratio also has a corresponding t-value statistics of 4.387985, 4.350076 respectively and the Hypotheses is therefore rejected.

Table 3: Regression Result

Dependent Variable: NET_PROFIT_MARGIN				
Method: Panel EGLS (Cross-section weights)				
Date: 10/28/19 Time: 12:56				
Sample (adjusted): 2008 2018				
Periods included: 11				
Cross-sections included: 12				
Total panel (balanced) observations: 132				
Linear estimation after one-step weighting matrix				
White cross-section standard errors & covariance (d.f. corrected)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-63.99590	21.16673	-3.023419	0.0030
LIQUIDITY_RATIO	3.247503	0.740090	4.387985	0.0000
LOAN_TO_DEPOSIT_RATIOS	0.007107	0.001634	4.350076	0.0000
INTEREST_RATE	-1.578890	1.984227	-0.795720	0.4277
CASH_RESERVE_RATIO	0.280765	0.565600	0.496402	0.6205
	Weighted Statistics			
R-squared	0.209863	Mean dependent var		46.23713
Adjusted R-squared	0.184977	S.D. dependent var		49.84306
S.E. of regression	38.95078	Sum squared resid		192679.7
F-statistic	8.432917	Durbin-Watson stat		1.622511
Prob(F-statistic)	0.000005			
	Unweighted Statistics			
R-squared	0.020276	Mean dependent var		15.58636
Sum squared resid	221828.2	Durbin-Watson stat		2.587923

Source: E-view 10

Post Estimation Test Results

Table 4: Serial Correlation Test

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	10.68844 Prob. F(2,10)	0.0033
Obs*R-squared	10.90070 Prob. Chi-Square(2)	0.0043

Source: E-view 10

The Breusch-Godfrey Serial Correlation LM Test indicates that, there is no autocorrelation. This is given by the F-statistic of 10.68844 and its corresponding P-

value of 0.0033, and corroborated by observed R-squared of the auxiliary regression P-value of 0.0043.

Table 5: Heteroskedasticity Test

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	12.92946 Prob. F(3,12)	0.0005
Obs*R-squared	12.21961 Prob. Chi-Square(3)	0.0067
Scaled explained SS	8.596745 Prob. Chi-Square(3)	0.0352

Source: E-view 10

Following the heteroskedasticity test result presented in table 5, 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 heteroskedasticity. Furthermore, the omitted variable test conducted with Ramsey RESET in table revealed the presence of omitted variables hence the need to adopt the ordinary least square regression techniques.

Discussion of Findings

The result from the table 3 reveals that monetary policy has a significant effect on bank performance with a p-value of 0.0000 and a F-statistic of 8.432917. This implies that if monetary policy increases, bank performance increases by 8.432917 and vice versa.

The test of goodness of fit reveals that the estimated relation has a good fit with an R^2 at 20%. The R-squared explains variation on economic stability to the extent of approximately 20% while the remaining variation is explained by other variables not captured in the model. The f-statistic, which reveals the joint significance of all estimated parameters in predicting the values of performance, is statistically significant with a value of 8.432917 and a p-value of 0.000000. The Variance Inflation Factors (VIF) result shows that there is no multicollinearity problem because the VIF value is between 1 and 10. Also, there is no heteroskedasticity problem because the chi-square which stands at 0.8091 and F-statistics which stands at 0.8158 are more than 10%.

Therefore, since the p-value is less than 0.05, which is the accepted level of significance for this research, the researcher hereby rejects H_0 and state that monetary policy has a significant effect on performance of listed DMBs in Nigeria.

5. Conclusion and Recommendations

The research work studied the effect of monetary policy on the performance of the Nigeria commercial banks. 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 concept of democracy. The Monetary policy has critical impact on the developing nations and a tremendous influence on the growth rate of the economy; we can evaluate its performance in terms of the activities of the Nigeria commercial Banks. We conclude that the aim of monetary policy is the mobilization and control of funds. Therefore, the effect of monetary policy on the Nigeria commercial banks as an engine for controlling inflation, unemployment etc. is geared towards finding a positive and constructive role for the economy.

The following recommendations are suggested:

- i. The Central Bank of Nigeria should manage the recent 13.5% monetary policy rate properly for it to be attractive and affordable for investors to borrow money from the bank.
- ii. With the recent increase of 65% of loan to deposit, Government should also employ other measures to control the loan to deposit so that these funds cannot be used for another purpose.
- iii. The Monetary authorities should minimize the 22.5 % Cash reserve ratio in order to influence the level of bank performance with capacity to raise a volume of funds with sufficient to meet anticipated needs.
- iv. The reduction of liquidity ratio should be insisted from 30% to 25% to prevent the banks from folding up. The reversion to the modern technique of controlling liquidity in the economy should be encouraged and this should be strictly adhering to ensure economic stability.

If all these are effectively implemented, it will assist to reduce inflation, unemployment, and increase the GDP of the Nigerian economy.

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Appendix

Year	Company	I.D	GICS INDUSTRY	Net Profit Margin	Interest rate	Liquidity ratio	Cash reserve ratio	Loan to deposit Ratios
2006	Access Bank	1	Banks	5.52	10.00	55.7		48.8
2007	Access Bank	1	Banks	36.01	9.50	40.0		52.5
2008	Access Bank	1	Banks	38.97	9.75	35.0	3.0	69.49
2009	Access Bank	1	Banks	6.62	6.00	25.0	1.3	87.51
2010	Access Bank	1	Banks	16.82	6.25	25.0	1.0	88.26
2011	Access Bank	1	Banks	15.34	12.00	30.0	8.0	52.3
2012	Access Bank	1	Banks	27.16	12.00	30.0	12.0	50.28
2013	Access Bank	1	Banks	25.69	12.00	30.0	12.0	59.05
2014	Access Bank	1	Banks	24.34	13.00	30.0	20.0	76.35
2015	Access Bank	1	Banks	31.7	11.00	30.0	20.0	81.14
2016	Access Bank	1	Banks	28.89	14.00	30.0	22.5	86.61
2017	Access Bank	1	Banks	19.38	14.00	30.0	22.5	88.91
2018	Access Bank	1	Banks	24.93	14.00	30.0	22.5	77.73
2006	Fidelity Bank	2	Banks	41.57	10.00	55.7		49.06
2007	Fidelity Bank	2	Banks	28.98	9.50	40.0		39.86
2008	Fidelity Bank	2	Banks	44.33	9.75	35.0	3.0	60.54
2009	Fidelity Bank	2	Banks	2.79	6.00	25.0	1.3	60.41
2010	Fidelity Bank	2	Banks	15.25	6.25	25.0	1.0	48.83
2011	Fidelity Bank	2	Banks	5.22	12.00	30.0	8.0	49.53
2012	Fidelity Bank	2	Banks	23.04	12.00	30.0	12.0	48.2
2013	Fidelity Bank	2	Banks	8.95	12.00	30.0	12.0	52.85
2014	Fidelity Bank	2	Banks	13.23	13.00	30.0	20.0	66.06
2015	Fidelity Bank	2	Banks	11.48	11.00	30.0	20.0	75.13
2016	Fidelity Bank	2	Banks	7.9	14.00	30.0	22.5	90.6
2017	Fidelity Bank	2	Banks	10.48	14.00	30.0	22.5	99.16
2018	Fidelity Bank	2	Banks	14.92	14.00	30.0	22.5	86.77
2006	First Bank Holding	3	Banks	42.66	10.00	55.7		39.5
2007	First Bank Holding	3	Banks	32.98	9.50	40.0		36.35
2008	First Bank Holding	3	Banks	31.31	9.75	35.0	3.0	65.61
2009	First Bank Holding	3	Banks	3.02	6.00	25.0	1.3	80.09
2010	First Bank Holding	3	Banks	19.2	6.25	25.0	1.0	78.84
2011	First Bank Holding	3	Banks	8.75	12.00	30.0	8.0	64.19
2012	First Bank Holding	3	Banks	26.34	12.00	30.0	12.0	64.21
2013	First Bank Holding	3	Banks	21.83	12.00	30.0	12.0	60.4
2014	First Bank Holding	3	Banks	22.85	13.00	30.0	20.0	71.42
2015	First Bank Holding	3	Banks	3.82	11.00	30.0	20.0	61.17
2016	First Bank Holding	3	Banks	4.23	14.00	30.0	22.5	67.13
2017	First Bank Holding	3	Banks	10.18	14.00	30.0	22.5	63.67

Year	Company	I.D	GICS INDUSTRY	Net Profit Margin	Interest rate	Liquidity ratio	Cash reserve ratio	Loan to deposit Ratios
2018	First Bank Holding	3	Banks	13.75	14.00	30.0	22.5	48.29
2006	First City Monumental Bank	4	Banks	51.05	10.00	55.7		27.13
2007	First City Monumental Bank	4	Banks	40.65	9.50	40.0		44.53
2008	First City Monumental Bank	4	Banks	50.04	9.75	35.0	3.0	70.16
2009	First City Monumental Bank	4	Banks	2.04	6.00	25.0	1.3	71.3
2010	First City Monumental Bank	4	Banks	18.19	6.25	25.0	1.0	79.6
2011	First City Monumental Bank	4	Banks	-10.62	12.00	30.0	8.0	50.04
2012	First City Monumental Bank	4	Banks	17.38	12.00	30.0	12.0	50.03
2013	First City Monumental Bank	4	Banks	15.74	12.00	30.0	12.0	62.99
2014	First City Monumental Bank	4	Banks	18.76	13.00	30.0	20.0	84.22
2015	First City Monumental Bank	4	Banks	3.85	11.00	30.0	20.0	84.68
2016	First City Monumental Bank	4	Banks	11.46	14.00	30.0	22.5	100
2017	First City Monumental Bank	4	Banks	5.54	14.00	30.0	22.5	94.19
2018	First City Monumental Bank	4	Banks	11.37	14.00	30.0	22.5	77.04
2006	Guaranty Trust Bank	5	Banks	38.46	10.00	55.7		39.02
2007	Guaranty Trust Bank	5	Banks	41.21	9.50	40.0		39.3
2008	Guaranty Trust Bank	5	Banks	41.7	9.75	35.0	3.0	88.15
2009	Guaranty Trust Bank	5	Banks	22.24	6.00	25.0	1.3	82.49
2010	Guaranty Trust Bank	5	Banks	34.16	6.25	25.0	1.0	77.98
2011	Guaranty Trust Bank	5	Banks	39.45	12.00	30.0	8.0	68.89

Year	Company	I.D	GICS INDUSTRY	Net Profit Margin	Interest rate	Liquidity ratio	Cash reserve ratio	Loan to deposit Ratios
2012	Guaranty Trust Bank	5	Banks	50.9	12.00	30.0	12.0	67.85
2013	Guaranty Trust Bank	5	Banks	48.56	12.00	30.0	12.0	70.22
2014	Guaranty Trust Bank	5	Banks	49.2	13.00	30.0	20.0	78.83
2015	Guaranty Trust Bank	5	Banks	43.38	11.00	30.0	20.0	85.19
2016	Guaranty Trust Bank	5	Banks	50.39	14.00	30.0	22.5	80.02
2017	Guaranty Trust Bank	5	Banks	52.08	14.00	30.0	22.5	70.25
2018	Guaranty Trust Bank	5	Banks	60.15	14.00	30.0	22.5	55.37
2006	Stanbic Ibtc Holding	6	Banks	56.16	10.00	55.7		86.73
2007	Stanbic Ibtc Holding	6	Banks	45.7	9.50	40.0		74.57
2008	Stanbic Ibtc Holding	6	Banks	29.27	9.75	35.0	3.0	103.29
2009	Stanbic Ibtc Holding	6	Banks	19.89	6.00	25.0	1.3	65.31
2010	Stanbic Ibtc Holding	6	Banks	27.52	6.25	25.0	1.0	87.93
2011	Stanbic Ibtc Holding	6	Banks	18.75	12.00	30.0	8.0	97.72
2012	Stanbic Ibtc Holding	6	Banks	17.57	12.00	30.0	12.0	82
2013	Stanbic Ibtc Holding	6	Banks	33.19	12.00	30.0	12.0	89.07
2014	Stanbic Ibtc Holding	6	Banks	44.44	13.00	30.0	20.0	77.73
2015	Stanbic Ibtc Holding	6	Banks	22.85	11.00	30.0	20.0	60.02
2016	Stanbic Ibtc Holding	6	Banks	32.61	14.00	30.0	22.5	57.42
2017	Stanbic Ibtc Holding	6	Banks	39.36	14.00	30.0	22.5	49.37
2018	Stanbic Ibtc Holding	6	Banks	62.88	14.00	30.0	22.5	45.59
2006	Sterling Bank	7	Banks	14.27	10.00	55.7		55.91
2007	Sterling Bank	7	Banks	14.54	9.50	40.0		47.48
2008	Sterling Bank	7	Banks	30.03	9.75	35.0	3.0	37.8
2009	Sterling Bank	7	Banks	-26.52	6.00	25.0	1.3	59.99
2010	Sterling Bank	7	Banks	20.03	6.25	25.0	1.0	54.98
2011	Sterling Bank	7	Banks	21.4	12.00	30.0	8.0	39.55
2012	Sterling Bank	7	Banks	12.99	12.00	30.0	12.0	49.14
2013	Sterling Bank	7	Banks	11.83	12.00	30.0	12.0	71.14
2014	Sterling Bank	7	Banks	11.55	13.00	30.0	20.0	70.8
2015	Sterling Bank	7	Banks	12.72	11.00	30.0	20.0	57.32
2016	Sterling Bank	7	Banks	5.21	14.00	30.0	22.5	80.08
2017	Sterling Bank	7	Banks	7.72	14.00	30.0	22.5	87.33

Year	Company	I.D	GICS INDUSTRY	Net Profit Margin	Interest rate	Liquidity ratio	Cash reserve ratio	Loan to deposit Ratios
2018	Sterling Bank	7	Banks	7.36	14.00	30.0	22.5	81.65
2008	Union Bank Of Nig	8	Banks	32.74	9.75	35.0	3.0	37.95
2009	Union Bank Of Nig	8	Banks	-338.91	6.00	25.0	1.3	49.06
2010	Union Bank Of Nig	8	Banks	127.19	6.25	25.0	1.0	31.33
2011	Union Bank Of Nig	8	Banks	-132.38	12.00	30.0	8.0	33.17
2012	Union Bank Of Nig	8	Banks	7.93	12.00	30.0	12.0	31.57
2013	Union Bank Of Nig	8	Banks	7.5	12.00	30.0	12.0	47.55
2014	Union Bank Of Nig	8	Banks	34.86	13.00	30.0	20.0	59.28
2015	Union Bank Of Nig	8	Banks	15.28	11.00	30.0	20.0	64.26
2016	Union Bank Of Nig	8	Banks	15.7	14.00	30.0	22.5	77.03
2017	Union Bank Of Nig	8	Banks	8.92	14.00	30.0	22.5	64.45
2018	Union Bank Of Nig	8	Banks	16.39	14.00	30.0	22.5	55.21
2006	United Bank For Africa	9	Banks	20.02	10.00	55.7		14.41
2007	United Bank For Africa	9	Banks	29.08	9.50	40.0		35.37
2008	United Bank For Africa	9	Banks	35.06	9.75	35.0	3.0	32.36
2009	United Bank For Africa	9	Banks	1.34	6.00	25.0	1.3	51.12
2010	United Bank For Africa	9	Banks	0.51	6.25	25.0	1.0	49.62
2011	United Bank For Africa	9	Banks	-7.63	12.00	30.0	8.0	41.89
2012	United Bank For Africa	9	Banks	34.32	12.00	30.0	12.0	38.31
2013	United Bank For Africa	9	Banks	25.09	12.00	30.0	12.0	43.38
2014	United Bank For Africa	9	Banks	24.36	13.00	30.0	20.0	49.4
2015	United Bank For Africa	9	Banks	25.5	11.00	30.0	20.0	49.8
2016	United Bank For Africa	9	Banks	27.38	14.00	30.0	22.5	1380.0 1
2017	United Bank For Africa	9	Banks	24.13	14.00	30.0	22.5	60.4
2018	United Bank For Africa	9	Banks	21.66	14.00	30.0	22.5	51.22
2007	Unity Bank	10	Banks	6.7	9.50	40.0		25.1
2008	Unity Bank	10	Banks	-53.36	9.75	35.0	3.0	16.2
2009	Unity Bank	10	Banks	-50.96	6.00	25.0	1.3	40.85
2010	Unity Bank	10	Banks	42.82	6.25	25.0	1.0	51.41

Year	Company	I.D	GICS INDUSTRY	Net Profit Margin	Interest rate	Liquidity ratio	Cash reserve ratio	Loan to deposit Ratios
2011	Unity Bank	10	Banks	8.5	12.00	30.0	8.0	44.17
2012	Unity Bank	10	Banks	14.99	12.00	30.0	12.0	70
2013	Unity Bank	10	Banks	-43.26	12.00	30.0	12.0	64.37
2014	Unity Bank	10	Banks	17.07	13.00	30.0	20.0	79.18
2015	Unity Bank	10	Banks	7.48	11.00	30.0	20.0	106.35
2016	Unity Bank	10	Banks	3.15	14.00	30.0	22.5	104.93
2017	Unity Bank	10	Banks	-17.22	14.00	30.0	22.5	3.55
2018	Unity Bank	10	Banks	4.3	14.00	30.0	22.5	18.05
2006	Wema Bank	11	Banks	-63.93	10.00	55.7		62.73
2007	Wema Bank	11	Banks	13.85	9.50	40.0		54.83
2008	Wema Bank	11	Banks	13.85	9.75	35.0	3.0	54.83
2009	Wema Bank	11	Banks	-58.17	6.00	25.0	1.3	31.9
2010	Wema Bank	11	Banks	123.92	6.25	25.0	1.0	35.4
2011	Wema Bank	11	Banks	-24.91	12.00	30.0	8.0	45.62
2012	Wema Bank	11	Banks	-20.12	12.00	30.0	12.0	42.31
2013	Wema Bank	11	Banks	5.59	12.00	30.0	12.0	45.3
2014	Wema Bank	11	Banks	6.69	13.00	30.0	20.0	57.65
2015	Wema Bank	11	Banks	6.27	11.00	30.0	20.0	65.13
2016	Wema Bank	11	Banks	5.75	14.00	30.0	22.5	80.13
2017	Wema Bank	11	Banks	4.25	14.00	30.0	22.5	84.82
2018	Wema Bank	11	Banks	5.77	14.00	30.0	22.5	68.31
2006	Zenith Bank	12	Banks	30.83	10.00	55.7		50.91
2007	Zenith Bank	12	Banks	29.52	9.50	40.0		45.41
2008	Zenith Bank	12	Banks	37.48	9.75	35.0	3.0	37.91
2009	Zenith Bank	12	Banks	10.65	6.00	25.0	1.3	59.49
2010	Zenith Bank	12	Banks	29.4	6.25	25.0	1.0	54.12
2011	Zenith Bank	12	Banks	29.84	12.00	30.0	8.0	53.99
2012	Zenith Bank	12	Banks	45.49	12.00	30.0	12.0	51.31
2013	Zenith Bank	12	Banks	36.65	12.00	30.0	12.0	54.96
2014	Zenith Bank	12	Banks	31.73	13.00	30.0	20.0	68.16
2015	Zenith Bank	12	Banks	30.35	11.00	30.0	20.0	77.77
2016	Zenith Bank	12	Banks	33.71	14.00	30.0	22.5	76.73
2017	Zenith Bank	12	Banks	37.49	14.00	30.0	22.5	61.09
2018	Zenith Bank	12	Banks	43.95	14.00	30.0	22.5	49.4

Source: Financial Reports of listed DMBs in Nigeria