International Journal of Multidisciplinary and Current Educational Research (IJMCER)
ISSN: 2581-7027 ||Volume|| 4 ||Issue|| 1 ||Pages 92-103 ||2022||

The Effect of Central Bank of Nigeria Regulation on the Performance of Deposit Money Banks

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ABSTRACT: The study examined the effect of Central Bank of Nigeria (CBN) regulation on the performance of Deposit Money Banks. CBN regulation was proxied by Return on assets which is the dependent variable while the monetary policy rate, treasury bills rate, lending rate and cash reserve ratio are the independent variables which proxied the deposit money banks.Secondary data of the variables was used and analyzed with Ordinary Least Square regression econometric technique. The results show that the monetary policy rate has a positive and significant relationship with return on assets of deposit money banks (DMB) in Nigeria, Treasury Bills rate has a positive but insignificant relationship with DMB, Lending rate has a significant negative relationship with DMB while cash reserve ratio has insignificant negative relationship with deposit money banks in Nigeria.The study recommended that monetary authority should manage the quantitative tools of monetary policy properly for it to be attractive and affordable for investors to borrow money from the bank hence promoting banks profitability, and that central bank of Nigeria should review the monetary policy regulations in a way that it should not be too stiffened in order to enable deposit money banks to record reasonable level of profitability.

I. INTRODUCTION

Regulation and supervision of banks remain an integral part of the mechanism for ensuring safe and sound banking practice. At the apex ofthe regulatory and supervisory framework for thebanking industry is the Central Bank of Nigeria (CBN). The Nigerian Deposit Insurance Corporation (NDIC) however, exercises shared responsibility with the Central Bank of Nigeria for the supervision of insured banks (Iyade, 2006).While the Central Bank regulates the Deposit money Banks, the Nigerian Deposit Insurance Corporation supervises their operations. Both the regulatory and supervisory roles of these monetary authorities are aimed at ensuring a sound and safe financial system in the economy (Umar, 2015).The Central bank's regulation of Deposit money banks has experienced various reforms. Hence, the Central Bank of Nigeria has adopted the use of monetary policy as a tool of its regulation. Monetary policy tools such as cash reserve and capital requirements have been used to buffer the liquidity creation process of deposit money banks through deposit base and credit facilities to the public (Ndugbu & Okere, 2015). According to Akarara and Azebi (2018), open market operations (OMO) remained the main instruments of monetary policy, complemented by reserve requirement and discount window operations as well as the monetary policy rate (MPR), all intended to bring about stabilization of the economy.
Traditionally, CBN regulation encompasses licensing of banks, regulations in respect of capital adequacy, liquidity, lending limits, level of interest rates and so on (Emefiele, 2015). However, due to the reforms that have taken place in recent times in the banking sector, the CBN regulation has been broadened to cover consumer protection, electronic payments, Bank verification Number and Credit risk management system (CBN Report, 2018).

Dare and Okeya (2017) opined that it is a known fact that commercial banks (deposit money banks) exists primarily to make profits. They make profits by accepting deposits from customers and granting credits to interested individuals, companies, and other organizations and institutions at an agreed interest rate. Therefore, since banks do not operate in a vacuum, their overall lending behavior may generally be influenced by the environmental factors particularly the regulatory and other macroeconomic factors. The problem of steady rise in the rate of inflation has been a major setback of the Nigerian economy. The inflation rate as at the last quarter of 2018 was 11.40%. It was 15.37% the preceding year (CBN Bulletin, 2018). As at 2019, the inflation rate had risen to 11.98%. The Central Bank of Nigeria has been engaging its monetary policy towards reducing inflation through regulating interest rates (monetary policy rates, treasury bill rates and lending rates) and reserve requirements (Cash reserve ratio and minimum liquidity ratio). For instance, with the rise of inflation rate from 9.55% to 18.55% between 2015 and 2016, the Central Bank of Nigeria increased the monetary policy rate from 11% to 14% which also resulted in a hike in the lending rates of Deposit Money Banks (CBN Bulletin, 2018).

Apparently, a hike in lending rate is likely to cause an abysmal effect on the earning capacity or profitability of Deposit money banks (DMBs) as credit creation would be badly affected. At a recent meeting of the monetary policy committee (MPC) it was affirmed that inflation is on the rise and tightening policy could be an option to reduce inflation. However, tightening would limit the ability of DMBs to create money, ultimately leading to a reduction in money supply and curtail theircredit creation capabilities, which would eventually lead to risingcost of credit and low profitability. The MPC therefore resolved that the Cash reserve ratio should be raised from 22.5% to 27.5% while the MPR should remain 13.5% (CBN, 2020). Thus. the Central Bank of Nigeria curbs inflation through the use of some regulatory tools in the banking industry such as interest rates and reserve requirements. However, in a bid to tackle inflation, changes are made to major regulatory tools such as interest rates and reserve requirements and these changes seem to exert some degree of influence on the earnings and profitability of banks. The study used the Return on Assets to proxy the Central Bank of Nigeria regulation and examined it effect on monetary policy rate, treasury bills rate, lending rate and cash reserve ratio which are the financial policy tools engaged by CBN in regulating the Deposit money banks.

II. LITERATURE REVIEW

The Scope of CBN Regulation: The goal of banking sector regulation is to sustain financial stability which is also one of the main objectives of Nigeria's monetary policy. It is the main reason why the Central Bank of Nigeria was made the apex regulatory body of the Nigeria's financial system. In collaboration with other regulatory agencies, the Central Bank of Nigeria ensures a stable financial system. The Central Bank of Nigeria in collaboration with the Nigerian Deposit Insurance Corporation (NDIC) regulates the banking sector and ensures its efficiency (Umar 2015). In 1991, the Banking Act of 1959 and the Banking Decree of 1969 were repealed and replaced with the Banks and other Financial Institutions (BOFI) Decrees 24 and 25 to strengthen CBN's position in its oversight of enacting monetary policy, banking regulation and supervision of all financial institutions in the country. The new decree brought non-bank financial intermediaries under the supervision of CBN. In 1994, the CBN in a bid to ensure that there was some form of coordination in the activities of all the regulatory agencies for effective oversight of the financial sector established the Financial Services Regulation Coordinating Committee (FSRCC). In 1998, the 1997 Decrees were repealed by the CBN Amendment Decree No. 37 and Bank and other Financial Institutions Decree No. 38 of 1998. In 1999 a further amendment to the BOFI decree was made — Bank and other Financial Institutions Decree No. 40 of 1999 allowing CBN to remove the officers of any financial institution and apply the rules applicable to failed banks to other non-bank financial institutions. A major change was the enactment of the CBN Act 2007 which repealed the CBN Act of 1991 and all its amendments. The consequence of the Act was that CBN became a fully autonomous body as regulator and its role was enlarged to include serving as economic advisor to the Federal Government (Balogun, 2011).

Central Bank Regulation and Deposit Money Banks : According to Olusegun (2012), the regulatory activities of the Central Bank of Nigeria (CBN) include: the safety and soundness regulation; Monetary Policy regulation; Credit allocation regulation; Consumer protection regulation; Investor protection regulation; and entry regulation.

1) **Safety and soundness regulation**: to protect depositors and borrowers against the risk of bank failures, for example, by requiring diversification of credits (sectorial credit allocation), specifying minimum capital required for operations, and provision of safety-net through deposit insurance schemes.
2) **Monetary policy regulation**: For example, the imposition of cash reserve and liquidity ratios on banks to influence the volume of money supply in the economy.
3) **Credit allocation regulation**: These regulations may require a bank to hold a minimum amount of assets in one particular sector of the economy or to set maximum interest rates, prices, or fees to subsidize certain sectors. For example, Nigerian banks have been encouraged to subsidize agricultural loans in Nigeria.
4) **Consumer protection regulation**: For example, to prevent discrimination in lending especially on the basis of race, age, sex or income.
5) **Investor protection regulation**: This is especially relevant to banks with investment banking business. Various laws exist to protect investors against abuses such as insider trading, lack of disclosure, outright malfeasance, and breach of fiduciary duties.
6) **Entry regulation**: This exists through licensing and restriction on the types of business that banks may be involved. Licensing will usually specify the minimum requirements to establish a bank (e.g., capital). The Central bank regulations have affected the operations of banks in so many ways. According to Sanusi (2012), the regulatory reforms have brought about a new mind-set to the industry as banks are putting in place best practices in the areas of corporate governance and risk management. Transparency and public disclosure of transactions have remarkably improved. The reforms have brought about greater confidence in

the banking system with the removal of distress banks and the adoption of a strict code of corporate governance. There has also been increased wide-spread use of e-payment services among Nigerians (Sanusi, 2012).

Regulatory Reforms of the Banking Industry : According to the Banking Supervision Annual Reports (2005), regulatory reforms are usually introduced either in response to the challenges posed by factors and developments such as systemic crisis, deregulation, globalization and technological innovations, or as proactive measures both to strengthen the banking system and prevent systemic crisis.

Some key Regulations which have recently shaped the banking landscape include:

1. Introduction of the structural adjustment program (SAP) in 1986 that gave way for the adoption of quantitative monetary policy instruments such as the Open market operations.
2. In August, 1987 the CBN liberalized theinterest rate regime and adopted the policy of fixing only its minimum rediscount rate to indicate the desireddirection of interest rate.
3. Introduction of prudential guidelines in 1991
4. Total deregulation of interest rates in 1996
5. The adoption of the universal banking model in 2001, allowing banks to diversify into non-bank financial services (Ojong, Ekpuk, Ogar & Emori, 2014).
6. Adoption of the monetary Policy rate (MPR) to replace the minimum rediscount rate in 2006 (CBN Statistical Bulletin, 2018).
7. According to Sanusi (2012), another set of regulatory reforms was the 2004 banking reforms with emphasis on the recapitalization of banks. The regulatory reforms also focused on the following:

- ✓ Risk-focused and rule-based regulatory framework
- ✓ Zero tolerance in regulatory framework in data/information rendition/reporting and infractions.
- ✓ Strict enforcement of corporate governance principles in banking.
- ✓ Revision and updating of relevant laws for effective corporate governance and ensuring greater transparency and accountability in the implementation of banking laws and regulations, as well as;
- ✓ The introduction of a flexible interest rate-based framework that made the monetary policy rate the operating target

8. Central Bank of Nigeria also rolled out guidelines for electronic banking (e- banking) in line with global trends in 2004 and banks were encouraged to install Automated Teller Machines (ATMs) for cash withdrawals (Ojong, Ekpuk, Ogar & Emori, 2014).
9. Following the banking crisis of 2008, the Central bank of Nigeria articulated a blue-print known as “the Project Alpha Initiative” for reforming the Nigerian financial system and the banking sector in particular (Sanusi, 2012).
10. The establishment of Asset management Corporation of Nigeria in 2010 to address the problem of non-performing loans in the Nigerian Banking industry, among others (Sanusi, 2012).
11. To further engender public confidence in the banking system and enhance customer protection, the CBN established the Consumer and Financial Protection Division to provide a platform through which consumers can seek redress (Sanusi, 2012). In 2016, the Consumer protection framework was issued to enhance consumer confidence in the financial services industry and promote financial stability (CBN, 2019).
12. The Introduction of non-interest banking in Nigeria that led to the establishment of the Jaiz bank plc that started business in January 6, 2012 (Sanusi, 2012).
13. The cashless policy was introduced by the CBN in April, 2011 and was aimed at moving the Nigeria’s economy from a cash-based economy to a cashless economy through the use of electronic payment systems (Ajayi, 2014).
14. In February 2014, the CBN in collaboration with the Bankers’ committee introduced a centralized bank verification system and a regulatory framework for bank verification number (BVN) operations for the Nigerian banking industry was initiated by the CBN in 2017 (CBN, 2017).
15. Guidelines on the operation of electronic payment channels in Nigeria (CBN, 2016).
16. On the 20th of December 2019, the Central Bank of Nigeria issued consumer protection regulations to improve overall compliance with the consumer protection framework (CPF) by banks and non-bank financial institutions (CBN, 2019).
17. The Credit management system of banks was redesigned by the Central Bank of Nigeria and the regulatory framework for the redesigned credit management system (CRMS) was issued in February 2017 (CBN, 2017).

THEORETICAL FRAMEWORK

The Regulatory Dialectic Theory : The regulatory dialectic theory is based on the work of Kane (1981). This theory strives to explain the on-going struggle between the regulators and financial institutions. The regulators attempt to impose constraints on the financial system (interest rate, product, geographic control etc.). The institutions who tend to be driven by profit or wealth maximization motives, attempt to circumvent the restrictions because they consider such as structural arbitrage. This process (contagion), create cost and benefit analysis for government officials leading to reactive adjustment inoperative codes of regulation. In a nutshell, Kane's theory examines the struggle engaged by both the regulators and the financial institutions to achieve their goals, in the process some adjustment emerged (exogenously) leading to regulatory changes toward financial or monetary stability.

EMPIRICAL LITERATURE: Okoro (2006) explained that banks hold unique positions in developing and developed countries and it is as a result of these position that theGovernment often deem it necessary to formulate policies aimed at achieving macro-economic objectives of growth, price stability, employment and available external payments position and the micro-economic objectives of stability, efficiency and soundness of the financial system. These policies are in general effected through regulation of the banking system. Following the adoption of the Structural Adjustments Programmed (SAP) in 1986 the financial sector also witnesses significantchanges through the deregulation of the financial system. The upsurge in the growth of financial institutions—banks and non-banks—necessitated the need for great attention to prudentregulation and supervision of the institutions. Iyade (2006) investigated the impact of regulation and supervision on the activities of Nigerian banks with emphasis on the role of the Central Bank of Nigeria and The Nigerian Deposit Insurance Corporation. The analysis showed that the supervisory and regulatory framework of the Central Bank of Nigeria and the Nigerian Deposit Insurance Corporation are not sufficient to guarantee effective banking practices in Nigeria. Other findings from the study include the need to increase the maximum insurance coverage due to the effect of inflation and the persistent fall in the value of the Naira, the need to disclose transactions continuously to ensure financial prudence through regular supervision and monitoring of the financial health of local banks with the aid of the 'CAMEL' ratings and other supervisory framework. There is need to also increase the awareness of banking activities within the general populace through a deliberate integration process aimed at demystifying certain inherent perceptions of the public with respect to distress and the role of the Nigerian deposit Insurance Corporation (NDIC).

Aigbogun (2011) examined the perceived impact of prudential guidelines on the services and performance of commercial banks in Nigeria. He employed both primary and secondary sources of data from samples derived from the populations of selected commercial banks and adopted the use of structured questionnaire as the main instrument of data collection. Data were analyzed using the Chi-square(X^2) analytical technique. Findings from the study revealed that there is increased need for banks supervision from the regulatory bodies. In concluded that prudential guidelines have also helped to check non-performing loans and ensure proper scrutiny of loan proposals and enhanced regulatory activities in the banking industry most especially the commercial banks. Mette (2011) analyzed the effects of regulation within deposit insurance, capital regulation,andactivity restrictions on the change in bank performance during the world financial crisis. Although there was evidence that deposit insurance systems had a positive effect on the development in net interest income, there was also found some evidence that they had a negative effect on the development of loan loss provisions. Akomolafe, Danladi, Babalola & Abah, (2015)) carried out an empirical analysis of monetary policy on commercial banks in Nigeria. The results showed that an increase in interest rate will lead to a decrease in the lending rate while liquidity ratio and cash ratio were statistically significant to the profit of the selected banks. Okoye and Eze (2013) examined the impact of bank lending rate on the performance of Nigerian Deposit Money Banks between 2000 and 2010. They specifically determined the effects of lending rate and monetary policy rate on the performance of Nigerian Deposit Money Banks and analyzed how bank lending rate policy affects the performance of Nigerian deposit money banks. The study utilized secondary data econometrics in a regression, where time-series and quantitative design were combined and estimated. The result confirmed that the lending rate and monetary policy rate has significant and positive effects on the performance of Nigerian deposit money banks. The implication of these is that lending rate and monetary policy rate are true parameter of measuring bank performance.

Dhanuskodi (2014) examined the impact of Loan Deposit ratio on the profitability of Malaysiancommercial banks for the period of 2009 to 2013. The study included all the eight locally owned commercial banks in Malaysia. Loan deposit ratio of the banks was the independent variable of the study. The dependent variable was profitability which measures through Return on Assets (ROA). The ratio analysis along with descriptive, correlation analysis, paired T- test and regression analysis were used in this study. The result of the study indicated that there was a positive and non- significant impact of LDR on ROA is five banks. Furthermore, the study revealed that only one bank (Bank 5) had a negative and non-significant impact of LDR on ROA and bank 7 had positive and significant impact. Eden (2014) also carried out a related study on the Impact of National Bank Regulation on Banks Performance: Evidence from the Private Banks of Ethiopia. The main objective of the study was to examine the impact of National Bank of Ethiopia (NBE) regulations on private banks performance through the significant regulatory variables explaining the NBE directives, using bank-specific and macroeconomic variables as control variables. Balanced fixed effect panel regression was used for the data of six private commercial banks in the sample covered the period from 2004 to 2013. Three regulatory factors affecting banks performance in terms of return on asset and net interest margin were selected and analyzed. The results of panel data regression analysis showed that NBE Bill and Credit cap had negative and statistically significant impact on banks profitability but reserve requirement had negative and insignificant impact on profitability.

Jegede (2014) examined the effect of monetary policy on commercial bank lending inNigeria between 1988 and 2008, using macroeconomic time series variables of exchange rate, interest rate, liquidity ratio, money supply, and commercial bank loan and Advances. Specifically, the findings revealed that exchange rate and interestsignificantly influenced commercial banks' lending, while liquidity ratio and money supply exertnegative effect on commercial banks' loan and advances. The major conclusion drawn is that monetary policy instruments are not effective to stimulate commercial bank loans and advances in the long-run, while banks' total credit is more responsive to cash reserve ratio. Thus, monetary authority should make efforts to develop indirect monetary instruments and exercise appropriate control over the monetary sector.

Kellum (2014) asserted that monetary policy rate has remained a major potent monetary policy tool used by monetary authorities in setting targets and direction of other rates and in driving the movement of other macroeconomic aggregates in both developed and developing countries. The study analyzed the effects of monetary policy rate on other rates in Nigeria. The major findings of the study are that the pass-through of monetary policy rate into short term and long-term retail interest rates in Nigeria is sticky. The only evidence of the effectiveness of monetary policy can be seen only in the relationship between monetary policy rate and interbank rates.

Georgina and Evelyn (2015) examined bank capital requirement as a regulatory tool in Nigeria. A t-test statistic technique was employed to test the equality of the means of the pre and post 2005 key profitability ratios of selected quoted banks– using the year 2005 recapitalization as the base year. In both the pre and post recapitalization analyses of descriptive statistics and the t-test statistic technique employed, most of the bank performance evaluation indicators revealed that the pre-recapitalization means are better than the post recapitalization means and the t-tests shows that the difference between the two means at 5%level of significance is not statistically significant. On the aggregate, the analysis of the profitability indices of banks and test of equality of the pre and post means for2005 recapitalization exercise reveal that recapitalization without a conducive and sound macro-economic environment does not always transform to enhanced bank performance. Umar (2015) carried out a related study on Financial Regulations and the Nigeria's Banking Sector. Activities of the regulatory bodies were examined in the light of theoretical perspectives of financial regulation; their roles as well as the institutional structures portrayed the system's regulatory model. The study theoretically established a positive relationship between financial regulation and banking sector development in the country. The trends showed that financial regulation increases the safety, confidence, stability and efficiency in the system.

Mwongeli (2016) carried out a research work on the effect of regulations on financial performance of commercial banks in Kenya. The objective of the study was to determine if there is a relationship between regulations and financial performance. Financial performance is measured using financial ratios such as return on capital, return on equity, return on assets, credit risk, liquidity ratio, interest coverage ratio, core capital to total risk weighted assets ratio, total capital to total risk weighted assets ratio and core capital to total deposit liabilities ratio. The study also analyzed capital adequacy. The population of study was the 4 3commercial banks in Kenya and the period of study was between 2010 and2015. Chi square test of independence was used to analyze the relationship between the two variables. The test was carried out on each of the ratios and the findings were that there is no relationship between regulations and financial performance of commercial banks.

Akinkunmi (2017) empirically addressed Regulatory Impact of Bank Performance in Nigeria. The empirical work was carried out through the use of stochastic frontier analysis on 14commercialbanks over10years.

The study found out that regulation has a negative and significant influence on the total cost while bank output, input prices and bank size have a positive and significant effect. This implies that the larger the bank size, the higher the total cost that is incurred. Lawrence (2017) examined the impact of bank consolidation on the performance of the banking sector. The study compared the pre-and post-consolidation performance of the sector. Two independent samples representing the 9-year periodprecedingthe2005 banking consolidation exercise and the corresponding 9-year post consolidation period were analyzed. Performance assessment indicators analyzed in the study were non-performing loans ratio (asset quality), return on assets (earnings/profitability), capital adequacy ratio (long-term liquidity), liquidity ratio (short-term liquidity), bank loans and advances ratio (credit delivery) and bank assets ratio (bank size). Levene's independent sample t-test was used to determine evidence of significant difference in banking sector performance between the pre-and post-consolidation periods. It was concluded that banking consolidation significantly impacted on banking sector performance in Nigeria.

Mustapha (2017) empirically addressed Regulatory Impact of Bank Performance in Nigeria. The empirical work was carried out through the use of stochastic frontier analysis on 14 commercial banks over10years.The study found out that regulation has a negative and significant influence on the total cost while bank output, input prices and bank size have a positive and significant effect. This implies that the larger the bank size, the higher the total cost that is incurred.Olaoluwa and Shomade (2017) appraised the impact of monetary policy on commercial banks' lending behavior in Nigeria. The result from the findings indicated that bank lending behavior is determined by interest rate, exchange rate, and deposit and reserve requirement for the period under review. It wasalso shown in the result that only interest rate andreserve requirement have a negative and significantimpact on commercial bank lending rate while other variables have a positive relationship. The results of the study indicated that there is a long run relationship between deposits and commercial bank lending rate in Nigeria.Uzoma (2017) looked at the monetary policy instruments employed by the Nigerian monetary authorities and their effects on turnover ratio of commercial banks in Nigeria. The objective of the research was to examine the effects of monetary policy instruments—money supply, liquidity ratio, monetary policy rate, and cash reserve ratio- on commercial banks turnover ratio in an attempt at finding out the true nature and the extent monetary policy instruments have been successful in impacting on banking performance in Nigeria. It was apparent from the findings that the high level of forged and decorated balance sheet in the past could have made the monetary policy tools less effective and results unreliable. However, with the various reforms after the financial crises, the prudentialguidelines and implementation of a uniform financial statement reporting, the monetarypolicies of the CBN have tend to yield better results. With theintroduction of the Monetary Policy Rate (MPR) by the CBN as the major tool for signaling its monetary stance, the need for a monetary policy reaction function which clearly depicts the decision-makingintention of the Bank would assist economist and financial markets in predicting the future path of monetary policy.

Afolabi, Adeyemi, Salahuddin 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 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 MoneyBank 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.Luis (2018) examined the relationship between regulation and profitability. He tried to find out whether there is a relationship between commercial banking Profitability (proxied by ROA) and explanatory variables that directly or indirectly are influenced by Regulation. An unbalanced panel data set for 16 years was built and with information for more than 12,500 different commercial banks in the world. Using slightly different models relating ROA with explanatory variables that directly or indirectly may be considered as proxies for regulation, it was concluded that normally bank size and Equity to Total Assets have a positive relationship with ROA. That is, in general, larger and more capitalized banks have better profitability. Nwanna and Chukwufumnanya (2018) examined the effect of Central Bank of Nigeria regulation on the profitability of Selected Deposit Money Banks (2004-2016). Banking regulation is implemented to ensure a safe and sound financial system in the economy. The regression analysis used to test the desired hypotheses was Statistical package for Social Sciences (SPSS.).

Findings revealed that monetary policy rate and liquidity ratio were the variables that have positive and significant relationship with Earnings per share, only monetary policy rate has positive significant relationship with return on assets (ROA), monetary policy rate has significant positive relationship with net profit margin and monetary policy rate was found to be the only variable that has significant (positive) relationship with return on equity. The study concluded that Central Bank of Nigeria regulation has not fully achieved its objectives in the selected deposit money banks profitability. The study recommended among others that Central Bank of Nigeria should review the monetary policy rate in a way that it should not be too stiffened in order to enable deposit money banks record reasonable level of profitability.

III. METHODOLOGY

The study makes use of secondary data, the time series data on Return on Asset, Monetary Policy Rate, Treasury Bill Rate and Lending Rate which was sourced from CBN statistical Bulletin for the period of 2000-22018. The software used in running this regression is E-view version 9.0

Model Specification : Economic model is the representation of the basic features of an economic phenomenon. In order to explains the nature of relationship that exists between the dependent and independent variables, the regression equation is used. It helps in forecasting outcomes from the predetermined relationship between two variables. The regression equation for this study is stated below:

$y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + e$………….. (1)

The y-value stands for the dependent variable while the x-values represents the independent variables. The econometric relationship between the regulatory variables and its regulatory tools equation 2 below.

$ROA = \beta_0 + \beta_1 MPR + \beta_2 TBR + \beta_3 LR + \beta_4 CRR + e$……… (2)

Where:
ROA=Return on Asset

MPR=Monetary Policy Rate

TBR= Treasury Bill Rate

LR=Lending Rate

CRR=Cash Reserve Ratio

$\beta_1 + \beta_2 + \beta_3 + \beta_4 + \beta_5$ = Coefficients of the independent Variables

This refers to the supposed relationship between the dependent and independent variables of the model on the premise of the micro-prudential and macro-prudential regulation theories. Table 3.2 shows the expected effects of the independent variables on the dependent variable.

Table 3.2: A priori expectations

Classification	Variables	Expected Relationship
Independent Variables	Monetary Policy Rate (MPR)	Positive (-)
	Treasury Bill rate	Negative (-)
	Lending Rate (MLR)	Positive (+)
	Cash Reserve Requirement (CRR)	Negative (-)

***Source**: Researcher's Compilation*

IV. RESULTS AND DISCUSSION OF FINDINGS

Table 4.1: Regression Estimate: MPR and ROA

Dependent Variable: ROA
Method: Least Squares
Date: 03/28/21 Time: 19:28
Sample: 2000 2018
Included observations: 19

Variable	Coefficient	Std. Error	t-Statistic	Prob.
MPR	0.368918	0.192044	1.921010	0.0217
C	2.709897	2.483659	-1.091091	0.2905
R-squared	0.178358	Mean dependent var		1.901579
Adjusted R-squared	0.130026	S.D. dependent var		2.977490
S.E. of regression	2.777176	Akaike info criterion		4.980047
Sum squared reside	131.1160	Sch warz criterion		5.079462
Log likelihood	45.31045	Hannan-Quinn critter.		4.996872
F-statistic	3.690278	Durbin-Watson stat		2.867342
Prob(F-statistic)	0.021663			

Source: *Authors computation from E-views 9.0*

From table 4.1, the p-value (0.0217) is less than 0.05 therefore we reject the null hypothesis, and accept the alternate hypothesis. Therefore, there is a significant relationship between monetary policy rate and profitability of deposit money banks in Nigeria. The coefficient value of 0.368918 reveals that there is a positive relationship between monetary policy rate and credit to profitability of deposit money banks in Nigeria. It follows that an increase in monetary policy rate will result to an increase on the profitability of deposit money banks in Nigeria. The R-squared of 0.178358 reveals that only about 18% of the variation in the profitability of deposit money bank in Nigeria is explained by variation in monetary policy rate. The probability F–statistics is less than 0.05 suggesting that the relationship between return on assets of deposit money banks in Nigeria and monetary policy rate is significant. The Durbin-Watson statistics is up to two therefore the model is free from the problem of auto-correlation.

Table 4.2: Regression Estimate: TBR and ROA

Dependent Variable: ROA
Method: Least Squares
Date: 03/28/21 Time: 19:29
Sample: 2000 2018
Included observations: 19

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TBR	0.288642	0.179209	1.610645	0.1257
C	-1.227911	2.050343	-0.598881	0.5571
R-squared	0.212395	Mean dependent var		1.901579
Adjusted R-squared	0.081360	S.D. dependent var		2.977490
S.E. of regression	2.853797	Akaike info criterion		5.034478
Sum squared resid	138.4507	Schwarz criterion		5.133893
Log likelihood	-45.82755	Hannan-Quinn criter.		5.051303
F-statistic	2.594177	Durbin-Watson stat		2.726274
Prob(F-statistic)	0.125667			

Source:*Author's computation from Eviews 9*

From figure 4.2 the prob (F-statistic) (0.1257) is greater than 0.05, therefore we accept the null hypothesis and reject the alternate hypothesis. Therefore, there is no significant relationship between treasury bills rate and profitability of deposit money banks in Nigeria. The coefficient value of 0.288642 reveals that there is a positive relationship between treasury bills rate and profitability of deposit money banks in Nigeria. It follows that an increase in the treasury bills rate will result to an increase on the profitability of deposit money banks in Nigeria. The R-squared of 0.212395 reveals that only about 21% of the variation in the profitability of deposit money banks is explained by variation in the treasury bills rate. The probability F–statistics is greater than 0.05 suggesting that the relationship between return on assets of deposit money banks in Nigeria and treasury bills rate is not significant. The Durbin-Watson statistics is up to two therefore the model is free from the problem of auto-correlation.

Table 4.3: Regression Estimate: LR and ROA

Dependent Variable: ROA
Method: Least Squares
Date: 03/28/21 Time: 19:30
Sample: 2000 2018
Included observations: 19

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LR	-0.107193	0.177357	-0.604388	0.3336
C	4.437924	4.253784	1.043288	0.3114

R-squared	0.351035	Mean dependent var	1.901579
Adjusted R-squared	-0.036551	S.D. dependent var	2.977490
S.E. of regression	3.031417	Akaike info criterion	5.155238
Sum squared resid	156.2213	Schwarz criterion	5.254652
Log likelihood	-46.97476	Hannan-Quinn criter.	5.172063
F-statistic	0.365285	Durbin-Watson stat	2.445376
Prob(F-statistic)	0.033567		

Source:*Author's computation from Eviews 9*

From table 4.3, the p-value (0.0336) is less than 0.05, therefore we reject the null hypothesis and accept the alternate hypothesis. Therefore, there is a significant relationship between lending rate and profitability of deposit money banks in Nigeria. The coefficient value of -0.107193 reveals that there is a negative relationship between lending rate and profitability of deposit money banks in Nigeria. It follows that an increase in the lending rate will result to a decrease on the profitability of deposit money banks in Nigeria. The R-squared of 0.351035 reveals that only about 35% of the variation in the profitability of deposit money banks is explained by variation in the lending rate. The probability F –statistics is less than 0.05 suggesting that the relationship between return on assets of deposit money banks in Nigeria and lending rate is significant. The Durbin-Watson statistics is up to two therefore the model is free from the problem of auto-correlation.

Table 4.4: Regression Estimate: CRR and ROA

Dependent Variable: ROA
Method: Least Squares
Date: 03/28/21 Time: 19:33
Sample: 2000 2018
Included observations: 19

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CRR	-0.095207	0.106696	0.892323	0.3847
C	0.786651	1.425872	0.551698	0.5883

R-squared	0.244742	Mean dependent var	1.901579
Adjusted R-squared	-0.011450	S.D. dependent var	2.977490
S.E. of regression	2.994487	Akaike info criterion	5.130724
Sum squared resid	152.4382	Schwarz criterion	5.230138
Log likelihood	-46.74187	Hannan-Quinn criter.	5.147549
F-statistic	0.796240	Durbin-Watson stat	2.310795
Prob(F-statistic)	0.384677		

Source:*Author's computation from Eviews 9*

From table 4.4, the prob (F-statistic) (0.3847) is greater than 0.05, therefore we accept the null hypothesis and reject the alternate hypothesis. Therefore, there is no significant relationship between cash reserve requirement and profitability of deposit money banks in Nigeria.

The coefficient value of -0.095207 reveals that there is a negative relationship between cash reserve requirement and profitability of deposit money banks in Nigeria. It follows that an increase in the cash reserve requirement will also result to a decrease on return on assets of DMBs. The R-squared of 0.244742 reveals that only about 25% of profitability of deposit money bank in Nigeria is explained by variation in the cash reserve requirement. The probability F–statistics is greater than 0.05 suggesting that the relationship between return on assets of deposit money banks and cash reserve ratio is not significant. The Durbin-Watson statistics is up to two therefore the model is free from the problem of auto-correlation.

V. DISCUSSION OF THE FINDINGS

The finding of the study revealed that monetary policy rate has a significant relationship with return on assets of deposit money banks in Nigeria. It was shown that monetary policy rate had a positive and significant relationship with profitability of deposit money banks. These tend to agree with the priori expectation of the researcher. The positive relationship implies that increase in monetary policy rate will lead to increase of the profitability of deposit money banks. These finding tend to match the findings of Okoye and Eze (2013) who found a significant and positive relationship between monetary policy rate and profitability of bank. However, the findings tend not to align with the findings of Afolabi (2014) who found monetary policy rate not to be significant with bank loan and advances.

Treasury bill rate was found to have a positive and insignificant relationship with profitability of deposit money banks in Nigeria. These tend to disagree with the prior expectation of the researcher. The positive relationship in increase in treasury bills rate could result to increase in the profitability of deposit money banks. The finding also revealed that lending rate has a negative and significant relationship with return on assets of deposit money banks in Nigeria. However, this tends disagree with the findings of Okoye and Eze (2013) who found lending rate to have a positive effect on the performance of Nigeria deposit money banks. Also, this finding tends to disagree with the researcher prior expectation. However, the finding tends to agrees with finding of Akanbi and Ajagbe (2012) who found lending rate to have a negative and effect with interest rate, The finding of the study revealed that cash reserve requirement has an insignificant relationship with return on assets of deposit money banks in Nigeria. It was shown that cash reserve requirement had a negative and insignificant relationship with profitability of DMBs. These tend to agree with the priori expectation of the researcher. The negative relationship implies that increase in cash reserve requirement will lead to a decrease of deposit money banks profitability. These finding tend to match the findings of Eden (2012) who found a negative and insignificant relationship between Cash reserve requirements and profitability of banks. However, the findings tend not to align with the findings of Olaoluwa and Shamade (2017) who found cash reserve requirement to have a significant relationship with lending rate.

VI. CONCLUSION AND RECOMMENDATIONS

We examined the examined the effect of CBN regulations on Deposit money banks between the periods 2000-2018 using ordinary least square regression approach. It was aimed at determining the relationship between monetary policy rate and profitability of deposit money banks in Nigeria; evaluating the nature of relationship between treasury bill rate and profitability of deposit money banks in Nigeria; ascertaining the extent of relationship between lending rate and profitability of deposit money banks in Nigeria; evaluating the relationship between cash reserve requirement and profitability of deposit money banks in Nigeria.The study concluded that there is a significant relationship between monetary policy rate and lending rate on the profitability of deposit money banks in Nigeria while there is no significant relationship between Treasury bill rates and cash reserve ratio on the profitability of deposit money banks in Nigeria, Therefore, we recommend that government should adopt policies that will help Nigeria deposit money banks to improve on their performance, that central bank of Nigeria should review the monetary policy regulations in a way that it should not be too stiffened in order to enable deposit money banks to record reasonable level of profitability and that monetary authorities should manage the quantitative tools of monetary policy properly for it to be attractive and affordable for investors to borrow money from the bank hence promoting banks profitability.

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