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**EFFECT OF MONETARY POLICY ON FINANCIAL PERFORMANCE OF LISTED DEPOSIT MONEY BANKS IN NIGERIA.**

# BY NNOKAM HOPKINS

**BU/17C/BS/2771**

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**BAZE UNIVERSITY, ABUJA**

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# A DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF BACHELOR OF SCIENCE

**DEGREE IN ACCOUNTING**

# TO THE

**DEPARTMENT OF ACCOUNTING**

# FACULTY OF MANAGEMENT AND SOCIAL SCIENCES

**BAZE UNIVERSITY, ABUJA**

# MAY, 2021

# DECLARATION

I hereby declare that this project entitled **Effect of Monetary Policy on Financial Performance of Listed Deposit Money Banks in Nigeria** has been undertaken by me under the supervision of Dr. Adamu Garba Zango. I further certify this work has not been previously submitted for the award of a degree or certificate elsewhere. All ideas and views are products of my research. where the views of others have been expressed, they have been duly acknowledged**.**

# NAME OF STUDENT DATE

**REGISTRATION NUMBER**

# CERTIFICATION

**THIS IS TO CERTIFY THAT THIS RESEARCH WORK EFFECT OF MONETARY POLICY ON FINANCIAL PERFORMANCE OF LISTED DEPOSIT MONEY BANKS IN NIGERIA BY HOPKINS NNOKAM BU/17C/BS/2771**

# HAS BEEN APPROVED BY THE DEPARTMENT OF ACCOUNTING

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**TITLE&AMP;NAME DATE**

# EXTERNAL EXAMINER

# DEDICATION

I wish to dedicate this project to my parents Mr and Mrs Perkins Nnokam for the support throughout my studies and the encouragement given to aid me.

# ACKNOWLEDGEMENT

My special appreciation goes to almighty God for letting me go through this project in strong and good health. Special thanks to the head of department Dr. Adamu Garba Zango for guiding me through this project. A special recognition to my parents for encouraging me throughout this project. I would also like to thank all the lecturers who have influenced me positively, educationally and morally.

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

## ABSTRACT

*This study investigated the effect of monetary policy on the financial performance of twelve listed Deposit Money Banks (DMBs) in Nigeria over ten (10) years (2010 – 2019). Monetary policy is proxied by Loan to Deposit Ratio (LDR), Loan to Asset Ratio (LAR), and Central Bank of Nigeria Lending Rate (CBNLR), while financial performance was proxied by Return on Asset (ROA). The theory of financial intermediation and the institutional theory formed the bedrock of this investigation. The study adopted the ex-post facto research design. Secondary data used in the study were obtained from the audited financial statements of the sampled DMBs listed on the Nigerian Stock Exchange (NSE). Descriptive statistics, Pearson correlation and panel regression model were employed for data analyses using STATA version 13. The results showed that LDR has a significant positive effect on the financial performance of DMBs listed in Nigeria. This result is consistent with the two theories used in the study. The result further indicated that LAR has a significant negative effect on the financial performance of DMBs listed in Nigeria. Also, the study revealed that CBNLR has an insignificant negative effect on the financial performance of listed DMBs. Following from the above findings, the study recommended that the management of DMBs in Nigeria should seek to increase the LDR of their respective banks to enhance their profitability. Furthermore, DMBs should not rely on LAR and CBNLR as a financial performance-enhancing strategy since the outcome of the study indicated their effects as negative and mixed respectively. The study also recommended that further research should include unquoted DMBs operating in Nigeria to enhance the generalization of the findings.*

# CHAPTER I INTRODUCTION

## Background to the Study

Central governments of nations establish central banks to regulate the volume of money in the economy, control lending rates of credit facilities and bring about price stability. This suggests that a central bank has the sole responsibility of producing and controlling the national currency of a country which serves as a means of legal tender for payment of goods and services (Onouorah, Shaib, Oyathelemi and Friday, 2016). As the primary regulator of banks and money market activities, the Central Bank of every country needs to continually enhance the financial system of the government by adopting measures and policies that are capable of stabilizing the country's financial system. Solomon (2013) has posited that an efficient financial system provides a foundation for both developed and developing economies. He also noted that the efficient flow of capital in the financial sector serves as a stimulant for economic growth because financial institutions, which are the intermediaries in the financial sector, serve the primary purpose of mobilizing capital from the savings or surplus sector to the borrowing or deficit sector.

Money plays a lead role towards economic growth and developments of nations, and, as a result of this, policymakers and other relevant regulatory stakeholders give special recognition to monetary policies (Osadume & Obialom, 2018). As the apex bank of every country, Central Banks regulate the volume of money in circulation through the application of different monetary policies. Monetary policies are measures designed and implemented by central banks towards the control of the volume, value and cost implication of money supply to the economy while aiming to achieve government macroeconomic objectives (CBN, 2016). It involves the management of money supply to the economy and interest rate control (Chappelow, 2015)

The reason for the deployment of monetary policies may differ from one period or country to another. Through the CBN, Nigerian government consistently adopt and implement various monetary policies to achieve targeted macroeconomic objectives such as growth in employment rate, an equilibrium in the balance of payment, inflation control, price stability and general economic growth (Nwoko, Ihemeje and Anumadu 2016). During periods of a perceived high level of money supply in a country, the Central Bank may apply a monetary policy that will reduce the amount of money in circulation, and such strategy is referred to as contractionary monetary policy (CBN, 2017). In a contractionary monetary policy regime, the central bank of a country may increase the MPR (Monetary Policy Rate), which is the official rate of government that serves as a benchmark for other money market rates and economic activities (CFI Education, 2020). Moreover, the Central Bank may decide to increase the Cash Reserve Requirement (CRR) of the Deposit Money Banks (DMBs). CRR represents the sterilized portion from the total deposits of the DMBs, which is not available to them for their daily banking transactions.

However, when the government perceives that the money in circulation is low, the Central Bank may apply a monetary policy that will increase the amount of money supply into the economy to boost economic growth and development (CFI Education, 2020). When this happens, it becomes an expansionary monetary policy, through which a central bank may operate flexible monetary policies, including but not limited to the reduction of Monetary Policy Rate (MRR) and Cash Reserve Requirement (CRR), capable of influencing an upward movement in the volume of money in circulation (CBN, 2017).

Individually or collectively, some of the expansionary monetary policies are implemented to increase the level of credit facilities created by the DMBs. Advancing credit facilities increases the supply of money in the economy as well as the interest income generated by the DMBs. This

practice is the same for the Nigerian Banking Industry, where the Central Bank of Nigeria (CBN) periodically applies different monetary policies towards influencing the application of deposits generated by the DMBs, thereby having indirect control over the supply of money to the economy. Primarily, DMBs play the role of financial intermediation in the world of finance, by providing a platform upon which owners of capital and fund seekers actualize their business needs of investment avenues and borrowing opportunities respectively. The traditional banking activity of DMBs enables them to generate deposits from the surplus or savings units, and further create income-generating assets known as risk assets from the deposits. The risk assets also referred to as loans and advances, represent the portion of the banks' deposit liabilities lent out to fund seekers. Making loans and advances available for corporate and retail customers (deficit unit of an economy) who want to bridge their financial gaps is a significant revenue-generating banking function.

The lending of funds is an intermediary financial transaction that is consummated during the ordinary course of a daily banking business. The DMBs generate interest income from advancing credits, and the amount is directly impacted by the volume of credit facilities availed to borrowers and the applicable interest rate. However, rising interest income is majorly a function of the increasing size of loans, which, when compared to the deposit liabilities of the DMBs, shows the connection between both the loans and deposits of the respective banks. The relationship, usually expressed in percentage terms, is referred to as Loans to Deposit Ratio (LDR). Loans to Deposit Ratio is the portion of the total deposit liability of a DMB that is lent out in loans and advances to the borrowers of the bank. Other monetary policy instruments that are closely related to LDR are the ratios of loans to assets and interest rate.

On July 3, 2019, the Central Bank of Nigeria (CBN), through its circular to all banks, directed the DMBs to maintain a minimum LDR of 60% by September 30, 2019, or face a sanction of additional CRR of 50% of the LDR shortfall. The objective is aimed at increasing the level of investment to the real sector of the economy and subsequently lead to the general growth of the Nigerian economy (CBN, 2019a). However, while increasing the supply of funds to the economy through credits, the DMBs also generate interest income from loans and advances. Before the new policy, the banking practice for LDR was a maximum of 80% of total deposits and the DMBs also generated income from lending during that regime. Besides, considering the accounting concept of a going concern, DMBs will continue to earn interest income, thereby impacting on their overall performances as business entities.

Loan to Deposit Ratio is a useful macroeconomic tool for determining the liquidity of DMBs (Rengasamy, 2014) calculated in percentage terms by dividing the total loans created by the total deposits generated as at a given period (Murphy, 2019). The LDR is a creative monetary policy instrument that is capable of serving as leverage for the creation of higher levels of credits to the economy for growth support, as well as providing more income-generating opportunities for the DMBs.

Furthermore, given the sanctionable nature of the directive (if the banks fall short of the LDR), the DMBs are forced to lend more funds to the real sector of the economy. As this happens, the LDR also becomes a vital monetary policy tool for enhancing the profitability of DMBs. The reason is that as the banks lend more funds from their total deposit base, the amount of their respective loan portfolio increases and necessitates a higher level of interest income. Indeed, since the pronouncement of the minimum LDR directive, the level of credit facilities provided by the DMBs has improved. Popoola (2019) noted in Punch Newspaper that within three months of the CBN

directive to the DMBs, the total banking industry credits grew by 5.33% from N15.566trn in May 2019 to N16.397trn on September 26, 2019.

Sequel to the achievement recorded within the short period of the pronouncement, the CBN further increased the minimum level of LDR on September 30, 2019, from 60% to 65%, which if not achieved, the earlier prescribed sanction of additional CRR of 50% of the LDR shortfall will apply (CBN, 2019b). The banking sector is the financial powerhouse that generates deposits from the savings or surplus sector and creates loans and advances for the funding of all the sectors of the national economy. The persistent variations of the LDR by the CBN, in particular, has called for investigations into whether such variations are positively or negatively affecting the financial performance of DMBs in Nigeria. This study aims to provide an answer to this recurring question.

## Statement of the Problem

Moses-Ashike (2016) reported in ‘Business Day’ Newspaper the exclamation by the Central Bank of Nigeria that ‘’credit to the private sector has remained below the benchmark, which warrants policies that will enhance the flow of credit to the private sector’’. This may explain the CBN’s recent emphasis on LDR as a monetary policy instrument that can result in economic growth. And, based on this emphasis, the CBN directive to DMBs to consistently achieve a minimum LDR of 65% is an indication that for every percentage increase in LDR, the profitability of the DMBs could also be enhanced.

However, the extent to which these variations affect the financial performance of banks has remained an unresolved empirical issue as there appears to be insufficient research on the effect of the LDR policy on the financial performance of banks. For instance, the study of Kusmayadi (2018) indicated that LDR had an insignificant positive impact on ROA, while the study of

Inggawati, Ratna and Hermanto (2018) showed that LDR had a significant adverse effect on ROA. In addition, the research of Wahyuni (2018) revealed that LDR had a positive but insignificant effect on ROA, while that of Hapsari (2018) indicated that LDR had a positive effect on the banks’ financial performance. In another study, the findings of Rengasamy (2014) was mixed, with a positive but non-significant impact of LDR on ROA of the first four banks and the eight one. Also, only one bank (Bank 5) had an insignificant negative influence of LDR on ROA, and the 7th bank had a positive and significant impact.

Furthermore, from the previous works of literature available for review at the time of this study, there appears to be no deliberate use of LDR as monetary policy Technique.

From the above highlights, it has, therefore, become imperative that researchers redirect their research towards examining the effect of monetary policy (LDR in this case) on the Deposit Money Banks’ financial performance. Hence, the main problem this study has sought to solve is whether variations in monetary policies announced by the CBN, particularly the LDR policy, have significantly affected the financial performance of listed DMBs in Nigeria.

## Objectives of the Study

Centrally, the objective of this investigation involves the examination of the effect that monetary policy has on listed Nigerian Deposit Money Banks’ financial performance. In specific terms, the study seeks to achieve the following objectives:

* + 1. To find out the effect of Loan to Deposit Ratio (LDR) on the financial performance of listed DMBs in Nigeria.
    2. To examine the effect of Loan to Asset Ratio (LAR) on the financial performance of listed DMBs in Nigeria
    3. To evaluate the effect of the Central Bank of Nigeria Lending rate on the financial performance of listed DMBs in Nigeria.

## Research Questions

This review attempts to provide answers to the under listed research questions as a guide to achieving the above-stated objectives:

* + 1. What is the effect of LDR on Nigerian listed Deposit Money Banks’ financial performance?
    2. To what extent is the effect of LAR on the financial performance of listed DMBs in Nigeria?
    3. What effect does the Central Bank of Nigeria Lending rate have on the financial performance of listed DMBs in Nigeria?

## Research Hypotheses

While seeking answers to the above questions, the following null hypotheses have been formulated:

**Ho1:** Loan to Deposit Ratio has no significant effect on the financial performance of DMBs listed in Nigeria.

**Ho2:** Loan to Asset Ratio has no significant effect on the financial performance of DMBs listed in Nigeria.

**Ho3:** CBN Lending rate has no significant effect on the financial performance of DMBs listed in Nigeria.

## Scope of the Study

This study is restricted to the effect of CBN monetary policy (LDR in this case) on Nigerian listed Deposit Money Banks’ financial performance for ten years, 2010 to 2019. The population/sample was limited to 12 (twelve) DMBs listed as at 31st December 2019 on the Nigerian Stock Exchange (NSE). They include Access Bank Plc, ECOBANK Plc, FCMB, Fidelity Bank Plc, First Bank of Nigeria Plc, Guaranty Trust Bank Plc, Sterling Bank Plc, Union Bank Plc, United Bank for Africa, Unity Bank Plc, Wema Bank and Zenith Bank Plc. However, the results of such a study can be generalized to cover all banks that are to be affected by monetary policies initiated by the CBN since the sample size is a fair representation of the banking industry.

## Significance of the Study

This research shall be useful to three key essentially interested parties, namely the management of banks, the banking industry regulators, and academic researchers.

The study will enable the respective management of DMBs to determine various techniques, including workable risk acceptance criteria that would support the steady creation of loans and advances, growth in interest income and profitability.

This study will also be beneficial to regulatory authorities such as the CBN, Nigerian Deposit Insurance Corporation (NDIC), the Assets Management Corporation of Nigeria (AMCON) and other banking industry regulators in formulating policies that will enhance the relevance of the financial intermediation roles played by DMBs in moving the economy forward.

The research will further contribute to the body of knowledge in the financial sector concerning the workings and practicability of loan to deposit ratio monetary policy.

Furthermore, the study may be useful to researchers and scholars, as it would form a basis for further research, particularly on the areas not covered.

## Definition of Operational Terms

**Banking Industry:** This comprises the monetary authority (Central Bank of Nigeria), deposit money banks and other specialized banks that avail various types of loans and advances.

**Cash Reserve Requirement:** This represents the portion of total deposit liabilities which the banks are required to keep as cash in vaults and deposit liability with the CBN. **Collateral/Security:** Collaterals are assets pledged to secure credit facilities, and the banks will foreclose on them for realization in the event of default by the obligors (borrowers).

**Credit Guidelines:** This is the CBN's yearly guide to deposit money banks in respect of loans and advances.

**Interest Income:** This is the additional money that the borrowers of funds would pay to the lenders (deposit money banks) alongside the principal loan amounts.

**Liquidity:** The liquidity of a bank is the ability of the bank to meet its current obligations as soon as they become due for payment and is usually a short-term debt measure.

**Loans:** These are funds availed by the banks to finance commercial activities in the deficit sector of the economy, and payable over some time with interest.

**Loans to Assets Ratio:** This is a financial ratio that is applied to measure the relationship between a bank's total loan portfolio to its total assets.

**MPR-MONETARY POLICY RATE:** This is the rate that directs interest rate movements, and it is also known as Minimum Rediscount Rate (MRR).

* 1. **Introduction**

# CHAPTER II LITERATURE REVIEW

The central objective of this investigation involves the examination of the effect of monetary policy on Nigerian listed Deposit Money Banks’ financial performance. The chapter reviews the existing literature relating to the subject matter, and subsequently presents the conceptual and theoretical frameworks for the study. It also reviews prior empirical studies on the phenomenon of interest.

## Conceptual Framework

The concepts presented in this section include monetary policy, monetary policy targeting, monetary policy instruments, and financial performance.

## Monetary policy

CBN (2016) stated that monetary policy is any conscious effort made by a country's monetary authorities, particularly the central bank, to control the volume, value and cost implication of money in circulation, while aiming to achieve government macroeconomic objectives, including low inflation and unemployment rates, high productivity rate and stable exchange rate.

Monetary policies are measures designed and implemented by central (CBN, 2016).

Amadeo (2020) opined that monetary policy is a central bank's actions and communication used in the management of money supply in the economy through credits, interest rates, cash reserve requirement and money market operations. Ibeabuchi (2012) describes monetary policy as a macroeconomic phenomenon applied by governments through their central banks to regulate available funds and the associated cost with the ultimate objective of achieving price stability.

Onouorah, Shaib, Oyathelemi and Friday (2011) presented monetary policy as a rule and regulatory guideline by a monetary authority for the control of money supply and inflation to achieve economic growth. In his contribution, Onyeiwu (2012) also noted that monetary policy is a financial management practice that facilitates progressive economic growth and development. Chigbu and Okonkwo (2014) held that monetary policy broadly entails the deliberate efforts of a government to use changes in money supply, cost of credit, loan size and pattern to direct the level of economic activities towards achieving desired macroeconomic stability in an economy.

Monetary policy is a conscious application of monetary instruments (direct and indirect) by the government, through its central bank, to stimulate macroeconomic growth such as price stability. In the opinion of Dwivedi (2005), monetary policy is a collection of programs governments embark upon through their central banks, to monitor money circulation in the economy for the achievement of predetermined macroeconomic objectives.

In a bid to avoid a high inflation rate, most central governments apply policies that control the supply of money into the economy. Following from this, therefore, monetary policies are strategies implemented by various governments to monitor the pattern of money supply for the achievement of economic stability. Furthermore, Adegbite and Alabi (2013) stated that monetary policy comes handy as a set of crucial instruments that could be deployed to achieve price and exchange rate stability for economic growth and enhancement.

From the perspective of Ajie and Nenbe (2010), monetary policy is a macroeconomic mechanism used by different countries, including Nigeria, to control their economic activities. Ubi, Effiom and Itam (2012) also added that monetary policy is a facet of macroeconomics that concerns the deployment of monetary tools for regulating the level of money supply, its value and cost implication for an economy.

According to CBN (2006), monetary policy measures are created by the CBN on behalf of the government to control the availability of credit to the economy and the cost implication of circulating money, with a view to stabilizing the economy.

From the position of Jhingan (2002), monetary policy is a credit control mechanism deployed by various governments through their monetary authorities. Nwankwo (2010), also posited that monetary policy is a collection of macroeconomic instruments utilized by the CBN towards the control of the economic activities. Okwo and Nwoha (2012), confirmed that monetary policy is a government formal effort to control the flow of money supply into the economy, to achieve predetermined economic goals.

Abeng (2006) explains that monetary policy operates more in a highly monetized economy. He further stated that the efficacy of monetary policy would be restricted if the economy is not monetized. For instance, in an economy that is not developed, and characterized by a higher percentage of output achieved via subsistence arrangement, the circulation of money would be independent.

Koshy (2012) believes that for the long-run, most economists agree that productivity is fixed. Therefore, differences in the supply of money also lead to differences in prices. However, differences in the supply of money could influence the eventual production of goods and services in the short run due to prices and wages which do not adjust promptly.

Osiegbu (2006) further stated that monetary policies are predetermined measures put in place by the government to monitor the flow and level of money circulation in the economy while targeting desired economic goals. He also noted that monetary policies could be alternated periodically depending on the economic situation of the country in question. For Nigeria, and as stated by Odior (2013), the CBN has the responsibility of designing and implementing monetary policies that are

capable of controlling the supply of money and setting workable interest rates that are subject to economic realities. According to him, the CBN, being the Nigerian Banking Industry regulator, designs and implements restrictions on banking activities, ensures compliance of banking rules and regulations, and applies monetary policies that will stabilize the country's banking industry to avoid collapse.

According to the IMF (2020), central banks play the crucial role of conducting monetary policies aimed at ensuring economic stability. This statement of fact reconfirmed the position of Abata, Chen and Cook (2012), Ajayi and Atanda (2012) and, Ajie and Nenbe (2010) when they asserted that the Federal Government of Nigeria’s role of predetermining appropriate monetary policy is done by the CBN as the monetary authority of the country.

In pursuing monetary policy objectives, Uchendu (2010) has stated that the CBN takes note of the presence of conflicting goals which may result in some level of trade-offs. Following from the above perspective, and if the need arises, Okafor (2009) and Uchendu (2010), added that the CBN might influence monetary policy rate to impact on economic targets such as broad money supply (M2) to achieve price stability and continued economic growth.

On his part, Osiegbu (2006) held that the goals of monetary policy include to facilitate full employment, generate rapid economic development, maintain price stability, ensure efficient credit control, encourage liquidity control in the economy, provide a balance of payments equilibrium, to sustain a realistic relationship between the money supply and the associated demand.

Hameed, Khalid and Sabit (2012) cited in Udude (2014), summarized the most crucial objective of monetary policy as the enhancement of the economic welfare of the masses, general price

stability, reduction of the unemployment rate, ensuring the balance of payment equilibrium and economic growth.

## Financial performance

Financial performance can be measured through different means, but financial ratios are more often used by financial analysts in the measurement of performance. A financial ratio is a tool that is used to determine the financial performance of an organization by comparing two-line items in the financial statement of the organization. The ratios that may be employed to determine a financial performance include, but not limited to return on investment (ROI), return on assets (ROA) and Net Interest Margin NIM).

ROI is a profitability indicator measured as Profit Before Tax/Net Worth, providing rationale and higher return-seeking investors with the opportunity to compare the return on their investments with specified DMBs and returns offered by other DMBs and non-bank investment opportunities. ROI has two major types, namely, return on capital employed (ROCE) and return on equity (ROE); both kinds of ROI take care of shareholders who are mostly interested in the performance of their investments. ROCE is calculated as Profit Before Tax/Capital Employed, while ROE is calculated as Profit Before Tax/Common Stock.

ROA is an internal ratio that measures the competence and expertise of the management of an institution; it evaluates the efficiency of management in utilizing the company's total assets for sustainable income generation. ROA captures the total amount of income generated per unit of asset, as well as organizational size, which is not taken care of by ROI. Return on Assets also allows for easy comparison between companies in the same industry. ROA is ascertained when the net income of a DMB is divided by the total value of its assets. It is presented as profit before tax / total assets.

And, as stated by Brealey, Myers and Marcus (2004), financial managers usually measure their organizational performance by ascertaining the ratio of net income to total assets, thereby providing useful information about the revenue generated per unit of asset. Following from this, therefore, ROA stands out as a crucial financial ratio to the management of a company because it measures their efficiency and effectiveness in making profits from the utilization of existing assets. Additionally, it is essential to note that a higher ROA indicates better financial performance, which, in turn, reflects higher profitability.

NIM is a profitability indicator that indicates how efficient the management of a deposit money bank is in generating more interest income from loans than the interest expense it incurs on deposits. While generating deposits, DMBs compensate the savings unit for their funds, but, the management of the respective DMBs should be creative in their design of loans products. It would be in the overall interest of a DMB for the managers to create competitive and qualitative credit facilities that are capable of producing much more interest incomes than expenses. Put in another way; NIM is a financial ratio that measures the spread between a DMB's interest income and its interest expense. It is gotten by dividing net interest income by average earning assets (loans and advances).

## Monetary policy instruments

The CBN (2011, 2016) categorized monetary policy instruments into the indirect and direct tools with which monetary policies are implemented, and the level of economic development influences the specific monetary instruments that are used at any given period by the central bank, being the monetary authority of Nigeria.

## Direct monetary policy instruments

The direct monetary policy instruments include direct credit control, interest rate, exchange rate, moral suasion, prudential guidelines, selective credit control and loans to deposit ratio.

CBN (2011, 2016) has presented Direct Credit Control as a mechanism applied by the monetary authority of a country to control the total amount of loans banks can avail to different sectors (sectorial credit ceiling) of the economy. This measure facilitates focused lending to various sectors of the economy.

Interest rate is the rate applied by Deposit Money Banks on funds lent to one another or credit facilities availed to their borrowing customers: individuals, corporate businesses, small and medium scale enterprises and government institutions. Put differently, interest rate is the cost of funds to a borrower which he compensates to the fund provider. Interest rate serves as a benchmark (floor or nominal anchor rate) upon which rates are applied in the money market. Obidike, Ejeh and Ugwuegbe (2015) opined that a high-interest rate negatively affects the supply of credits to the economy because funds become more expensive and scarcer. However, low-interest rate positively impacts on the economy as the real sector tends to borrow more with less cost of funds. Exchange rate is a financial trade term used to describe the rate at which local currency exchanges for foreign currency. While dealing in foreign exchange (buying or selling), the Central Bank of a country ensures that the exchange rate is at a position where it will not affect domestic money supply. Furthermore, Akpan (2008) and, Imoisi, Olatunji and Ekpenyong (2013) agreed that, when misaligned, real exchange rate destabilizes the current account of a country's balance of payment. Moral suasion is the employment by the monetary authority of true persuasive statement, public pronouncement and visible appeal. This measure occurs when the monetary authority sometimes uses the less tangible technique (such as credit restraint or expansion) to influence the lending policies of DMBs. Moral Suasion is implemented in Nigeria by the CBN through periodic

meetings with the Bankers Committee where-in as stated by CBN (2011, 2016) the Chief Executive Officers of the DMBs are persuaded to follow specific policies, suggestions and recommendations for the interest of the Nigerian economy. The periodic meetings with banking and other financial players will allow a country's monetary authority to discuss the improvement in standards and conduct in the banking industry and the economy in general.

Prudential guidelines are rules that enable banks to exercise care and due diligence in their daily operations, and this practice allows for specified outcomes to materialize. CBN (2011) asserted that the guideline takes away some discretions from the management of banks and substitute them with specific rules of operations.

Selective Credit Control is applied in distinguishing among the sectors of the economy into preferred and less preferred segments (Nnanna, 2001; CBN, 2011 & 2016). This selective credit control mechanism is sometimes designed to influence the direction of credits in the economy to ensure that credits go to those sectors designated "preferred". It is instrumental where a country operates development plans like Nigeria. When ideas are drawn, credit controls will be integrated into the budget. In the course of the government's program to revitalize agricultural production, which is the most favoured sector, credits to the sector is at a lower interest rate. In contrast, the least privileged sectors pay the highest standard of interest.

Fagbemi (2019) has posited that Loan to Deposit Ratio (LDR) represents the percentage of the total deposits of the respective DMBs that are applied in creating loans and the policy will bring about increased access to funds by the real sector economic players in Nigeria. Besides, according to Cashmere Feel (2014) "Loan to Deposit Ratio (LDR) is a good ratio for measuring total credits in comparison with total depositors' funds or capital. Primarily, the LDR indicates the volume of investment created from a bank's total liquidity, and it partly determines the interest income

generated from the loan portfolio of the bank. The LDR of each DMB is determined when the total loan amount of the respective bank is divided by the total sum of its deposits.

According to the CBN LDR directive (CBN 2019), DMBs are required to utilize a minimum of 65% of their total deposits to create loans to improve lending to the real sector of the Nigerian economy. Fagbemi (2019), expressed optimism when he stated that the compliance of the LDR directive by the DMBs would mean more access to bank financing by the players of the real sector of the economy. And, as stated by Emefiele (2020), the strengthening of the LDR policy is encouraging significant extra lending by the Deposit Money Banks. Indeed, suppose credit to the real sector is significantly increased. In that case, there will be a positive multiplier effect on the economic activities of the country, capable of substantially enhancing the real sector of the Nigerian economy. But, equally important, increased volume of credits brings about more interest income for the DMBs and improved financial performance.

## Indirect monetary policy instruments

The CBN uses indirect monetary policy instruments such as cash reserve ratio, special deposits, open market operations, lending rate, and rediscount rate. The cash reserve requirements (CRR) is one of the most potent instruments of monetary control (CBN, 2013). It is the part of a bank's total deposit liability that banking regulation requires Deposit Money Banks (DMBs) to hold as cash in the vault or deposit (non-interest bearing) with the CBN. The reserved amount is not available to the banks for the creation of loans or other banking products. Consequently, the amount of credits the banks can create is limited to the available deposit liability that is not affected by the CBN regulatory cash reserve requirement. However, the more deposit they can generate, the more loans they can create.

Special deposits are created when the Central Bank, acting on its powers, issue directives from time to time requiring all banks to maintain with it as particular deposit an amount equal to the percentages of the bank's deposit liabilities or the absolute increase in its deposit liabilities over an amount outstanding at a specific date.

Open market operation (OMO) is the system through which the Central Bank of a country implements its monetary policies, aimed at increasing or decreasing the supply of money into the economy. A Central Bank may buy or sell treasury bills and other government bonds to pump money into the economy or mop up excess funds in circulation, respectively. From the explanation of the CBN (2013) and Solomon (2013), the selling of securities reduces the level of money in circulation, while the buying of securities in the open market from corporate institutions or individuals, increases the level of funds in circulation.

Central Banks are, traditionally, lenders of last resort. And, as the need arises, CBN (2011, 2016) stated that the central banks provide credits for the DMBs, thereby influencing the level of reserves of the banks and the monetary base of the respective economies.

Rediscount Rate is the rate that Central Banks apply in extending credit facilities to DMBs when the need arises for more liquidity is referred to as the rediscount rate (CBN, 2011& 2016). Here, the Central Banks play their statutory role (lender of last resort) and when it reviews the rate upward or downwards, they indirectly affect the volume of money in circulation in their respective countries, and this, in turn, affects the supply of credits to the economy. High-interest rate discourages the deficit sector of an economy from borrowing. During inflationary periods, the Central Bank may decide to increase the rediscount rate, thereby making it difficult and very expensive for the DMBs to access funds. The multiplier effect is a stiffer and tighter credit supply.

The opposite occurs in a depression when the Central Bank of a country decides to encourage the Deposit Money Banks by reducing the rediscount rate.

## Monetary policy targeting

As explained by the CBN (2016), monetary policy targeting involves setting sustainable predetermined and appropriate benchmarks for each monetary policy variables to stabilize the economy of a country. It further gave examples of Monetary policy targeting: interest rate targeting, exchange rate targeting, national gross domestic product targeting, inflation targeting and quantitative easing.

Muley (2020) identified the control of the level of money in circulation as the critical variable in monetary policy application, and this entails setting appropriate growth rate for money supply in the economy with the capability of stimulating sustainable economic growth.

Interest Rate Targeting involves setting a minimum interest rate which the Deposit Money Banks (DMBs) refer to when setting their respective rates. As a monetary policy variable, the reference interest rate must be capable of ensuring economic stability since a higher interest rate will impact negatively on money supply and vice versa.

Exchange Rate Targeting entails fixing one country's currency value as a benchmark against other currencies. If the predetermined exchange rate is sustained, the inflation rates of two countries will even out, and this means that the country with a higher inflation rate will leverage on the relationship with the country having a low inflation rate to implement its monetary policy.

National Gross Domestic Product (NGDP) Targeting is done by fixing a minimum NGDP or a yearly growth rate to achieve sustainable growth in productivity levels, devoid of fluctuations.

Agénor and Pereira da Silva (2013) have explained that inflation targeting is a framework with definitive targets for future inflation and commitment towards price stability. Inflation targeting

aims at keeping the inflation rate of a country within a manageable range to stabilize prices and boost economic activities.

Quantitative Easing is a situation where central banks buy off assets from the Deposit Money Banks to enhance their liquidity levels with the ultimate aim of influencing more credits to finance economic activities.

The application of monetary policy targeting principle helps to control the volume, value and cost implication of money in circulation.

## Empirical Analysis

Theory serves as a useful guide in research, thereby providing a better understanding of the phenomenon under study. Consequently, this investigation explores the opportunity of understanding the resultant effect (s) of variations in CBN monetary policies on the financial performance of DMBs in Nigeria. Therefore, an examination of the literature in this domain reveals the adoption and use of two finance and management theories: the theory of financial intermediation and institutional theory.

## Theory of financial intermediation

The theory of financial intermediation was propounded by Allen and Santomero (1998), when they submitted that financial intermediaries are ‘’facilitators of risk transfer and deal with the increasingly complex meze of financial instruments and markets’’ According to the duo, banks and insurance companies majorly intermediated in the 19th and early part of the 20th centuries by creating loans from the deposits of the savings sector for borrowing firms.

Financial intermediation is an economic system whereby banks and other financial intermediaries channel funds from the savings (surplus) unit of a country’s economy via a process of lending to the deficit unit for economic growth and development. According to

Cuza (2009) posited that the modern financial intermediation theory primarily analyses the influence of the theory on the economy and, also, the impact of monetary authority regulation on financial intermediation. This position is directly related to the financial intermediation role of the DMBs in the utilization of the deposits generated from the savings sector to create loans required by the deficit sector for economic investment purpose. Also related is the CBN directive to the DMBs on the minimum loan to deposit ratio of 65% to support the growth of the real sector of the Nigerian economy, and further enhance the profitability of DMBs for which this study aims to investigate.

## Institutional theory

Hughes (1939) as cited in King et al. (1994, p.4) defined an institution as "any standing entity that exerts influence and regulation over other social entities as a persistent feature of social life, outlasting the social entities it influences and regulates, and surviving upheaval in the social order". The institutional theory seeks to explain the nature of interrelationships in a social structure. According to Scot (2004, p.3), “institutional theory considers the processes by which structures, including schemas, rules, norms, and routines, become established as authoritative guidelines for social behaviour. It inquires into how these elements are created, diffused, adopted, and adapted over space and time; and how they fall into decline and disuse". This study provides an insight

into how CBN uses monetary policy, (LDR in this instance) to shape expected outcomes regarding the deposit money banks financial performance.

## Theoretical Framework

Globally, some studies have been conducted to review the effect of monetary policy on the financial performance of deposit money banks. This subsection has reviewed 18 of such studies. The review is presented in line with the set objectives, beginning with the most recent study for each.

## Empirical Review -Effect of Loans to Deposit Ratio (LDR) on the financial performance of DMBs

Wahyuni (2018) examined the influence of the Capital Adequacy Ratio (CAR), Operational Efficiency Ratio (OER) and Loan to Deposit Ratio (LDR) on ROA. Penelitian Dengan purposive sampling method was used, and ten banks were sampled from 32 private national banks registered in the Stock Exchange of Indonesia, 2010 to 2014. The study adopted secondary data extracted from the audited financial reports of the sampled banks and evaluated using ordinary least square regression technique. The results suggested that OER has a significant negative effect on ROA, while CAR and LDR showed a positive but insignificant effect on ROA. The study concluded that bad credit quality would increase credit risk, mostly when credit appraisal is done without adhering to the principles of prudence.

Inggawati et al. et al. (2018) deployed purposive sampling and quantitative research to investigate how LDR, loan operational in comparism with income operational (BOPO) and non-performing loan (NPL) influenced the profitability of BPR-Bank Perkreditan Rakyat, Sidoarjo Regency. The proxy used for profitability was return on assets, while the result of the study indicated that LDR,

BOPO and NPL all had a significant adverse effect on ROA. Though the researchers were faced with incomplete data from BPR, they suggested that further studies can investigate the effect that other variables would have on bank profitability. The variables include capital adequacy ratio, net interest margin, liquidity factor and the interest rate.

Hapsari (2018) looked into the effect of Loan to Deposit Ratio (LDR) and Non-Performing Loans Ratio on the financial performance of thirteen banks (commercial) in Indonesia from 2012 to 2016. The Moderating Regression Analysis method with an absolute difference was applied in the research work. The data analysis outcome indicated that the LDR had a positive effect on the banks’ financial performance. Still, NPL suggested a negative impact, while size did not moderate both the result of LDR and NPL toward financial performance. The recommendation made was for the management of banks to run with the free trade era by the empowerment of their resources to create value addition and elevate their financial performances. Also, the study suggested that other researches on the effect of Loans to Deposit Ratio on the financial performance of banks should focus on other measures of profitability, such as ROE, ROI, EPS and Growth Ratio to provide a broader viewpoint.

Kusmayadi (2018) analyzed the effect of Capital Adequacy Ratio (CAR), Loan to Deposit Ratio (LDR), Non-Performing Loan (NPL), Operational Efficiency (BOPO), and Size, partially and simultaneously on Return on Assets (ROA) at Conventional Rural Bank in Indonesia from 2008- 2016. From the Central Bank of Indonesia publication, secondary data were obtained and analyzed through multiple regression techniques. The results showed that partially: CAR and NPL had an insignificant negative effect on ROA while LDR had an insignificant positive impact on ROA. In contrast, BOPO and size had a significant adverse effect on ROA. However, simultaneously, tests

were done for CAR, LDR, NPL, BOPO, and SIZE, and the result showed a significant effect on ROA.

Rengasamy (2014) studied the impact of Loan to Deposit Ratio on banks' (commercial) profitability in Malaysian from 2009 to 2013. The secondary data were generated from the annual reports of all the eight locally owned commercial banks included in the research work. The loan deposit ratio of the banks was the independent variable, while the dependent variable was the profitability of the banks which also measures Return on Assets (ROA). The researcher deployed ratio analysis tool alongside descriptive, correlation analysis, paired T-test and regression analysis in the study. The finding was a positive but non-significant impact of LDR on ROA of the first four banks and the eight one. Furthermore, only one bank (Bank 5) had an insignificant negative influence of LDR on ROA, and the 7th bank had a positive and significant impact. The study strongly believed that if banks concentrate, their loans to deposit ratio will improve their profitability.

## Empirical Review -Effect of Loans to Assets Ratio (LAR) on the financial performance of DMBs

In a study of Banks Financial Performance using Financial Ratios: A Case Study of Kuwait Local Commercial Banks, Abuzarqa (2019) examined the effect of leverage, total deposit to total assets, total loans to total assets, retained earnings to total assets, and tangible book value per share ratio on the financial performance of banks proxied by return on assets. The study used panel regression technique to analyse five commercial banks' secondary data obtained from their audited financial statements and the Kuwait Stock Exchange's website for five years, from 2013-2017. The Hausman test gave preference to the random-effect model over the fixed effect model because the

former produced a better result. The study's findings revealed that total deposits to total assets and retained earnings have a strong and significant effect on banks' financial performance. Also, the results indicated that while total loans to total assets and leverage have an insignificant impact on banks' financial performance, tangible book value does not affect the banks' financial performance. The study recommended that banks implement strategies that will increase their deposit base to maximize profits and enhance financial performance, and set an acceptable high ratio of retained earnings to boast shareholders' funds. Also, the research suggested that more studies should be conducted to support the existing scanty literature on the subject matter. Furthermore, the study advised that similar studies should be extended to the insurance, investment, agriculture, energy, manufacturing, processing and hospitality sectors.

However, a consideration of both the foreign and local banks in Kuwait would have made a better representation for the banking industry in the country and produced a more encompassing finding.

Puas, Rio, Sarita, Syaifuddin, Saleh, Hamid & Budi (2018) investigated the effect of equity to asset ratio (EAR), size and loan to asset ratio (LAR) on the performance of commercial banks that were listed on the Indonesian stock exchange from 2012-2016. Twenty-nine commercial banks were sampled with the aid of purposive sampling technique from 43 listed banks. Secondary data were obtained from the Central Bureau of Statistics, Indonesian Banking Directory, Financial Services Authority. The study used a purposive sampling technique to sample 29 banks from the 43 banks used as population and obtained their secondary data from Indonesian Capital Market Directory, Indonesian Stock Exchange and Indonesian Banking Directory. The data were analyzed using multiple linear regression after conducting Classical assumption tests (normality, multicollinearity, heteroscedasticity and autocorrelation) to ascertain data suitability. From the

study's findings, while EAR and size had a significant positive effect on ROA and NIM, LAR had an insignificant negative effect on ROA and significant negative effect on NIM.

To encourage a robust interest income regime, the study recommended more attention to credit process. The study also recommended enhanced supervision of approved credits post- disbursement to ensure better loan asset quality and timely repayment by obligors. The study further suggested using independent variables such as CAR, LDR, NPL and other related ratios, and the consideration of unlisted banks in further studies.

However, using one dependent variable as a proxy for banks’ financial performance might have aided a more consistent analysis and result.

Gabriel, Benedict and Lilian (2018) analyzed bank-specific determinants of capital adequacy ratio (CAR) in the Nigerian Banking Industry, using balanced panel data collected from the financial statements of 12 selected quoted banks for ten years, 2005-2014. Capital Adequacy determinants that were considered included Risk-weighted Asset Ratio, Deposit Asset Ratio, and Assets Quality Ratio Returns on Assets. The index for profitability (ROA) was discovered to be the most critical determinant of CAR, having recorded the highest co-efficient in the multiple regression results. The findings revealed that the deposit money banks have CAR that is higher than the regulatory minimum set by the CBN and the requirements of the Basel Accord. Also, the risk assets portfolio of Nigerian banks is relatively high, and ROA is quite low. The interest of depositors is well protected, given that the asset base of DMBs is well above the total deposits. The researchers recommended a robust data management system, and improvement in the operational performance of banks, strict compliance with various capital regulations and frequent stress tests for banks. Furthermore, the study suggested a more practical manner of disclosure that will include changes

in Tier I and Tier II capital, risk-weighted assets and trend analysis of changes in Capital Adequacy Ratio.

While using the Basel Accord Framework, Jalloh (2017) examined the Impact of Capital Adequacy on the Performance of Banks in Nigeria. From nine (9) banks with a significant presence abroad, a cross-panel methodology was used to collect data, and the outcome from the ordinary least square (OLS) regression analysis indicated a 76 per cent (R2) variations in PAT as a result of the independent variables. Discovery was also made from the research about a unit change in total assets-TA, Customer Deposits-CD, Loans and Advances-LA and Owners Capital-OC which resulted to 4.1, 3.7, 1.6 and 1.7 per cent changes in PAT respectively. Capital adequacy of a bank, as noted by Jalloh (2017), is the level of equity available to absorb any unexpected shocks. The study stated further that the Central Bank of Nigeria (CBN) fixed N25 billion as the minimum capital base to forestall all future financial downturns. The study made a recommendation for the CBN to deploy measures that would sustain the gains of banking reforms in the country and further tighten the risk management framework of the Nigerian banking industry. Besides, Jalloh (2017) opined that taking appropriate measures will facilitate a positive impact on the banks’ profitability and survival.

Menicucci and Paolucci (2016) reviewed the relationship between bank-specific characteristics and profitability in the European banking sector. The objective was to determine the impact of internal factors that are responsible for achieving high profitability. A regression analysis was carried out on an unbalanced panel dataset in respect of twenty-eight European banks for 2006- 2015. The largest bank for every single country of the European Union was selected. The regression results showed that the profitability of banks in Europe were positively impacted by capital ratio and size. However, it was revealed that lower profitability level is a function of higher

asset quality. Also, the findings indicated that banks with higher deposit ratio tend towards being more profitable. The study, which provides an exciting insight into the characteristics and practices of profitable banks in Europe suggested further researches on external and internal variables that could affect the profitability of banks.

Ikpefan (2013) analyzed the impact of bank capital adequacy ratios and management efficiency on performance of Nigerian commercial banks from 1986 to 2006. With a sample of 14 commercial banks, the study used both cross-sectional and time series of bank data obtained from the CBN and the banks' annual report, and employed OLS regression analytical techniques for the analysis. From the study, Shareholders' Funds to Total Assets was used to measure the capital adequacy of the banks, and it indicated a negative influence on ROA. Also, management efficiency, which was measured by operational expenses indices displayed a negative relationship to return on capital. These results suggested that adequate shareholders' funds can be used to strengthen the performance of commercial banks and also boost the confidence of their customers, particularly in periods of economic meltdown. The study recommended that regulatory authorities should design and implement measures that would raise the capital adequacy ratio to avoid future bank collapse. This recommendation is supported for further strengthening of the capital base of DMBs.

## Empirical Review -Effect of Central Bank of Nigeria Lending Rate (CBNLR) on the financial performance of DMBs

Dare and Okeya (2017) did an empirical study of the impact that monetary policy displayed on the performance of Nigerian commercial banks. The researchers adopted UBA Plc as a specific case study gathered and utilized time-series data covering a range of years from 2009 to 2014. Multiple

linear regression technique was used in data analysis. The estimated model conveyed the operating performance of banks as a function of monetary policy, including the Liquidity Ratio-LR, Monetary Policy Rate-MPR and Cash Reserve Requirement-CRR. Furthermore, the proxy for the performance of banks' credit was return on assets. Findings from the study showed a positive but statistically insignificant impact of monetary policy on bank performance.

In another review, the impact of monetary policy on the performance of deposit money banks in Nigeria from 1993 to 2013 was examined by Ndugbu and Okere (2015). The secondary data adopted for the study were obtained from the statistical bulletin of CBN and the audited accounts of the DMBs. Ordinary Least Square and co-integration techniques were used to evaluate the impact of monetary policy on the commercial banks' performances. The Co-integration and Augmented Dicker Fuller (ADF) unit root test indicated stationary variables and the presence of a long-term relationship. Also, from all the monetary policy variables (bank deposit rate, bank lending rate, cash reserve ratio and liquidity ratio) considered in the OLS model, only bank deposit rate indicated a significant inverse relationship. Consequently, the study recommended that CBN should occasionally check deposit rates as a means of regulating the banks' operations. The study also suggested monetary policy instruments modification to reflect and respond to local economic conditions rapidly and efficiently.

In a separate research work that adopted Zenith Bank as an experience, Udeh (2015) reviewed the impact of monetary policy instruments on the profitability of commercial banks in Nigeria. The researcher applied descriptive research design while secondary data were collected on a time-series basis from the audited report of Zenith Bank Plc and CBN Bulletin from 2005 to 2012. The data were analyzed using Pearson Product moment correlation technique, and the results suggested that cash reserve ratio, liquidity ratio and interest rate insignificantly impacted on the profit before tax

of Zenith Bank Plc. However, the case was different for minimum rediscount rate, which had a substantial effect on the profit before tax of the bank. Following from the above, the study opined that a good number of monetary policy instruments did not have significant impact on the profitability of banks in Nigeria. Therefore, the DMBs were advised to look beyond monetary policy instruments while seeking to enhance their profits. If the DMBs implement this recommendation, their profitability is more likely to be enhanced.

Obidike, Ejeh and Ugwuegbe (2015) investigated the effect of interest rate spread on the performance of the Banking Industry in Nigeria from 1986-2012. OLS analysis technique was deployed to scrutinize the data obtained through an online database of the World Bank and CBN bulletin. While checking the data on a time-series basis, the ADF test indicated that all the variables were unified of same order I (1), whereas, the co-integration analysis revealed a long-run interconnection of the variables that were considered. The finding indicated that interest rate spread negatively and significantly impacted on bank performance in the distant future. But, in the short duration, the interest rate spread affected bank performance adversely with an insignificant impact. However, both the exchange rate and GDP were found to have a significant positive influence on bank performance in the distant future.

Furthermore, the outcome of the ECM showed that 23.37% of the disequilibrium in the model would be corrected annually. The study recommended that government should improve the macroeconomic environment by developing the level of infrastructures and also implement measures that will curb the menace of the Boko-Haram sect and other forms of Militancy to reduce the level of insecurity in the country. Finally, the study suggested that banks should not rely only on interest income if they must continue in business. However, while these views are supported,

the CBN should always review the interest rate in line with current economic realities so that it will not affect banks' financial performance negatively.

Ekpung, Udude and Uwalaka (2015) reviewed the impact of monetary policy on the Nigerian banking sector performance for 36 years from 1970 to 2006, by applying the selected indicator and OLS regression analysis technique. Determination of the factors that influence the banking sector performance, with deposit liabilities as a proxy, was the purpose of the study. The result showed that collectively, the deposit liabilities of the banks were significantly impacted by monetary policy. However, the researchers found that on an individual basis, the rate on deposits and Minimum Discount Rate (MDR) had negative influences on depositors’ funds. In contrast, Exchange Rate (EXR) displayed a positive and significant effect. In their conclusion, they stated that monetary policy plays a crucial function towards the determination of deposit liability volume of Nigerian banks. Furthermore, the research recommended Government monetary authority's continued development and subsequent implementation of monetary policies that will support the growth of the Nigerian banking industry. This will bring about a robust banking environment capable of supporting the performance of banks.

Amaliawiati and Winarso (2013) focused on determining the relationship between Bank Indonesia Rate (BI rate) enacted in 2005 and the profitability of regular commercial banks listed on the Indonesia Stock Exchange, November 2005 to October 2012. Secondary data were obtained and scrutinized with the aid of multiple regression analysis, and ROA and NIM were the adopted proxies for profitability. The study concluded that the BI rate significantly impacted on ROA in a negative manner. However, this was not the case on NIM as the BI rate did not indicate any statistically significant impact. Following from the semi-partial correlation coefficients, the BI rate is proved to influence the determination of ROA considerably. At the same time, Operational Cost

to Operational Income played a crucial role in deciding Indonesian commercial banks’ NIM. The study recommended that while trying to keep the country's inflation rate on the check by raising the BI rate, the central bank should be mindful of the impact of an upward review because any increase is capable of reducing the profitability of banks. Furthermore, he advised the management of banks to pay attention to the BI rate since any increase in the rate will negatively affect their profitability, and that such changes will have a significant influence in determining their return on assets. Finally, the study suggested further research on NIM by including other variables.

In another review of the impact of bank lending on the performance of deposit banks in Nigerian between 2000-2010, Okoye and Eze (2013) used a sample size of 10 banks and the application of regression analysis. The research work mainly determined the effects that lending and monetary policy rates displayed on the performance of Nigerian Deposit Money Banks. The outcome picked lending and monetary policy rates as having a positively significant effect on the performance of banks in Nigeria. Moreover, the result points to the fact that the lending and monetary policy rates are a valid yardstick for checking the performance of banks. The results conformed with Udeh (2015) which proved that minimum rediscount rate had a significant effect on the bank's PBT, and recommended that the government should formulate and implement monetary policies that will elevate the banks’ performance. Furthermore, the study suggested the strengthening of lending rate policy via effective and efficient supervisory and regulatory frameworks.

Based on the interest rates of banks, Enyioko (2012) examined the performances of the respective banks viz a viz macro-economic performance in Nigeria. While denoting the year 2004 as the pre- consolidation and years 2005 to 2006 as the post for the data analysis, the study investigated twenty

(20) Nigerian banks out of the twenty-five (25) banks at post-consolidation. Secondary data were generated from the audited reports of the sampled banks and CBN. Regression and error correction

methods were deployed at the same time to determine the level of interconnection between the banks’ performance and their lending rates. It was discovered that lending rate did not significantly enhance the general performance of the banks. Also, the policies contributed inconsiderably to the growth and development of the economy. The study concluded that the banking industry had become competitive, and the market forces created an atmosphere where many banks needed to avoid fragile balance and corporate governance.

Furthermore, the study noted that the consolidation of banks might not necessarily be a satisfactory mechanism to achieve financial stability and sustainable development. Hence, it recommended a market-driven interest rate policy that will promote an efficient process. Besides, the study suggested the development of a new framework (by researchers), rather than banking interest rate policy, to promote financial market stability.

In a review of the effect that monetary policy instruments had on the performance of banks from 1978 to 2008, Ajayi and Atanda (2012) did well to determine the presence of a future distant relationship of the variables. They used the Engle-granger two-step co-integration approach, and their empirical estimates indicated that while total credits were enhanced by inflation, exchange and bank rates, the impact from liquidity ratio and cash reserve ratio on the credits was negative. But, only two monetary variables (cash reserve ratio and exchange rate) were of critical value at 5% significance. However, the co-integration test showed the acceptance of the null hypothesis of no co-integration. They concluded that monetary policy tools are ineffective in stimulating loans in the long term, while the total credits of banks are more responsive to the cash reserve ratio. Thus, they proposed that the authority in charge of monetary policies should modestly control the minimum policy rate applied in the regulation of the Deposit Money Banks’ operations and

facilitation of investment in the economy. The study further recommended a sound monetary policy for banks in Nigeria.

## Research Gap

Prior researchers such as Jalloh (2017), Ekpung, Udude and Uwalaka (2015), Ndugbu and Okere (2015), Udeh (2015), Obidike, Ejeh and Ugwuegbe (2015), Akomolafe, Danladi, Babalola and Abah (2015), and other authors have investigated the effect of monetary policies by the CBN on the financial performance of banks but found mixed results. The conclusion reached from prior research is that more studies should be conducted on the subject matter.

Moreover, from the previous works of literature available for review as at the time of this study, there appears to be no deliberate use of LDR as monetary policy technique. Therefore, this study has particularly included LDR as a monetary policy technique and used it together with LAR and CBNLR as independent variables to examine the effect of monetary policy on the financial performance of DMBs listed in Nigeria.

* 1. **Introduction**

# CHAPTER III RESEARCH METHODOLOGY

This chapter discusses the methodology employed to examine the effect of monetary policy on the listed Deposit Money Banks’ financial performance in Nigeria from 2010 to 2019. It presents the research design, the population and sample size, data sources, variable identification and measurement, model specification, and the technique of data analysis.

## Research Design

This study applied the ex-post facto research design, which is undertaken after the events have occurred and the data are already in existence. This type of research design is utilized when the researcher has no control or cannot manipulate the variables under investigation because the events have already taken place (Akpa, 2011).

This study used the ex-post design because of the reliance on secondary data that have been accumulated in prior years. The respective banks’ data were extracted from their audited reports for the period under review.

## Population and Sample of the Study

Twelve (12) Banks whose stocks were traded on the Nigerian Stock Exchange as at the last day of the year, being 31/12/2019 made up the population of the study, and they were chosen because of their classification as ‘Deposit Money Banks’. All the 12 banks are used as the sample size.

Table 3.1 contains the names of the 12 (twelve) banks used in the study, together with the date of their listing on the Nigerian Stock Exchange.

## Table 3.1 Population and Sampled Banks

|  |  |  |
| --- | --- | --- |
| **S/N** | **Banks** | **Date Listed** |
| 1. | Access Bank Plc | 18th November 1998 |
| 2. | Eco-Bank Plc | 24th April 2006 |
| 3. | FCMB | J21st June 2013 |
| 4. | Fidelity Bank Plc | 17th May 2005 |
| 5. | First Bank Nigeria Plc | 26th November 2012 |
| 6. | Guaranty Trust Bank | 9th September 1996 |
| 7. | Sterling Bank | 17th August 1993 |
| 8. | Union Bank Plc | 18th May 1970 |
| 9. | United Bank for Africa | 31st March 1970 |
| 10. | Unity Bank Plc. | 22nd December 2005 |
| 11. | Wema Bank | 13th February 1991 |
| 12. | Zenith Bank | 21st October 2004 |

**Source: Nigerian Stock Exchange Fact Book (2019).**

## Types and Sources of Data

The research utilized secondary data generated from the audited financial reports of the sampled banks and CBN bulletins for the period under review (2010-2019).

## Instrument of Data collection

The estimation model deployed in this study required the use of cross-sectional and time-series data in the form of financial information which was available through the annual reports. The

following items of data were obtained from the reports: Total Loans, Total Deposits, Total Assets and CBN Lending Rate.

Table 3.2 presents a summary of the variables used, their measurement and sources.

## Table 3.2 Variable Measurement and Sources

|  |  |  |
| --- | --- | --- |
| **Variable** | **Measurement Index** | **Source(s)** |
| ***Dependent*** |  |  |
| ROA | Net profit after tax divided by the total assets | Annual reports and accounts. |
| ***Independent*** |  |  |
| LDR | Total loans divided by total deposits. | Annual reports and accounts. |
| LAR | Total loans divided by total assets | Annual reports and accounts. |
| CBNLR | Lending rate approved by CBN | CBN bulletins |
| ***Control*** |  |  |
| SIZE | Total assets of the banks | Annual reports and accounts. |

**Source: Author’s Compilation**

## Definition of Variables

The econometric model applied in this study utilizes three sets of variables: dependent, independent or explanatory, and control variables. These variables are discussed in the next subsections.

## Dependent variable

The dependent variable, return on assets (ROA), represents the measure of firm performance that is likely to be affected by the monetary policies of the CBN. ROA is measured as the net profit after tax divided by total assets.

## Independent variables

Three independent variables, which represent the monetary policy put in place by the CBN, are used in this study. The variables are loan to deposit ratio (LDR), loan to asset ratio (LAR), and CBN lending rate.

The LDR indicates the volume of investment created from a bank's total liquidity, and it partly determines the interest income generated from the loan portfolio of the bank.

The LDR of each DMB is calculated by dividing the global loan amount of the respective bank by the sum of its depositors’ funds.

The LAR is a financial ratio that is applied to measure the relationship between a bank's total loan portfolio to its total assets. It is measured as total loans divided by total assets.

The CBNLR is the minimum rediscount rate (MRR) allowed by the CBN.

## Control variable

As the effect of monetary policy on the financial performance of the DMBs is examined, it is necessary to control for firm-specific factors that may have an impact on the performance but are not related to monetary policy. This study uses one control variable, namely, firm size, which has been widely used in prior studies. Firm size will be proxied by the total assets of the banks.

## Model Specification

The econometric model below was used in the study for ROA, and it has also been used by Rengasamy (2014) with modifications.

ROAit = *β0*it + *β1*LDRit + *β2*LARit + *β3*CBNLRit + *β4*SIZEit *+* µit (1)

KEY:

ROA = Return on Assets.

LDR = Loans to Deposit Ratio. LAR = Loans to Asset Ratio.

CBNLR = Central Bank of Nigeria Lending Rate. SIZE = Bank size.

*β1* – *β4* = Regression Coefficients µ = Error Term

i = the bank; t = the year.

## Method of Data Analysis

The study employed descriptive statistics to examine the main features of data used in the study. These features include the minim, maximum, mean values and the standard deviation from the mean. Pearson product-moment correlation was also applied to check the level of interconnection of the variables. Panel Regression Model is the main technique used for analysis because the data are panel data.

Relevant diagnostic tests were done to ensure that data used for the study conform to its assumptions. Some of the tests carried out include data normality test, multicollinearity tests, and heteroscedasticity test. Furthermore, the data used in the study have panel data attributes, that is

times series and cross-sectional data. Accordingly, the Hausman Specification test is conducted to establish whether to use fixed or random models for data analysis. The computational device used for data analysis is STATA version 13.

# CHAPTER IV

**DATA PRESENTATION AND ANALYSIS**

## Introduction

This research has a primary focus to investigate the effect that monetary policy has on listed Nigerian Deposit Money Banks’ financial performance. The chapter employs the use of descriptive statistics, correlation and multiple regression models to evaluate and explain the extracted data. The chapter has four main sections, including this introduction. Other sections, presented *seriatim* are data presentation, descriptive statistics, diagnostic tests, regression results, and discussion of findings.

## Presentation of Descriptive Statistics

This section provides the data generated from the CBN bulletin and the audited accounts of the sampled deposit banks, for the ten (10) year period under review, 2010-2019. The section provides data concerning the variables used in the study. The variables are Return on Assets (ROA), Loan to Deposit Ratio (LDR), Loan to Asset Ratio (LAR), Central Bank of Nigeria Lending Rate (CBNLR), and bank size proxied by the total assets of each bank. The raw data used is contained in Appendix I.

## Descriptive Statistics

This section examines the descriptive statistics for both the independent and dependent variables of interest. Table 4.1 displays the descriptive statistics for the study.

## Table 4.1 Descriptive Statistics

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Variables** | **LDR** | **LAR** | **CBNLR**  **(Per cent)** | **SIZE**  **(billions)** | **ROA**  **(Per cent)** |
| Min | 0.03 | 0.06 | 10.40 | 156.51 | -9.00 |
| Max | 1.06 | 0.75 | 12.00 | 8,621.94 | 8.00 |
| Mean | 0.64 | 0.43 | 11.50 | 2,240.60 | 1.43 |
| Std | 0.18 | 0.11 | 0.46 | 1,941.88 | 0.02 |

Source: Extracted from STATA Version 13 Output

The descriptive statistics in Table 4.1 reports that the minimum LDR is 0.03, while the maximum is 1.06. The mean value is 0.64. The standard deviation, which gives an indication of how closely or widely held the individual values are spread around the mean is 0.18, suggesting that most of the companies LDR are clustered along the mean values. However, the low minimum value (0.03) compared to the maximum value (1.06) suggests the presence of outliers which can affect data normality.

Table 4.1 further reports on LAR. It reveals that the minimum LAR is 0.06 while the maximum is 0.75. The mean value is 0.43, with a standard deviation of 0.11. The statistics also reveal that CBNLR ranges from a minimum of 10.4 percent to a maximum of 12 percent. The mean rate is 11.50, with a standard deviation of 4.64 percent. The statistics suggest stability in the CBN lending rate over the study period.

The descriptive statistics for the control variable, company size ranges from a minimum of N156.51billion to a maximum of N8,621.94 billion. The mean size is N2,240.6billion with a standard deviation of N1,941.88 billion. The vast difference between the minimum and maximum size suggests that both small and big companies are investigated in this study. It also portends the presence of outliers which can affect data normality.

Table 4.1 also presents minimum, maximum, mode and mean figures for all the dependent or financial performance measures used in the study. The ROA of the sample firms ranges from a minimum of -0.09 (-9 percent) to a maximum of 0.08 (8 percent). The mean ROA is 0.014 (1.4 percent) while the standard deviation of 0.018 (1.8 percent). The low ROA figures are an indication of inefficient management of bank assets.

## Analysis of Data

* + 1. **Diagnostics Tests**

A number of tests are conducted to ensure that the data used meet the requirements of the Panel regression technique. These tests are multicollinearity tests, normality test, heteroscedasticity test, and the Hausman specification test. The results of these tests are presented below.

## Multicollinearity tests

The checks for multicollinearity among the explanatory variables generally are necessary because high correlations cause problems about the relative contribution of each predictor to the success of the model (Barako & Tower, 2006). Table 4.2 contains a summary of correlations between the independent and control variables collected for each bank and the associated variance inflation factor (VIF) values.

## Table 4.2 Correlation Matrix and VIF Results

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Variable** | **LDR** | **LAR** | **CBNLR** | **SIZE** | **VIF** |
| LDR | 1.0000 |  |  |  | 2.55 |
| LAR | 0.7748 | 1.0000 |  |  | 2.54 |
| CBNLR | -0.2369 | -0.2619 | 1.0000 |  | 1.09 |
| SIZE | 0.1258 | 0.0731 | -0.1090 | 1.0000 | 1.03 |

Source: Extracted from STATA Version 13 Output

The highest correlation is between LDR and LAR (Pearson correlation = 0.7748). The high correlation between these ratios is normal because the total deposits constitute a large portion of the total assets of a bank. The second case of correlation worth noting is that between LDR and CBNLR (Pearson correlation = -0.2369). This inverse relationship appears normal since an increase or decrease in CBNLR has the respective potential to decrease or increase lending by banks. In the empirical literature, it is suggested that correlation between the independent variables is seen as undesirable for multivariate analysis only if it exceeds 0.8 (see Barako & Tower; 2006; Gujarati &Sangeetha, 2007).

A more vigorous and diagnostic alternative measure of multicollinearity is the variance inflation factor (VIF) for the independent variables (Barako & Tower, 2006). The variance inflation factor is used to test for multicollinearity among the independent variables. The highest VIF is 2.55 for LDR, followed by 2.54 for LAR. These figures are far less than 10 considered harmful for regression analysis (ibid). The correlation matrix and the VIF values, therefore, suggest that multicollinearity does not present a challenge in this investigation.

## Heteroscedasticity Test

The heteroscedasticity test was performed to ascertain whether the model is free from the presence of unequal variance. The Breusch-Pagan/Cook-Weisberg test for heteroscedasticity was carried out in this study. The results for panel cross-section and panel period heteroscedasticity found a Chi2 value of 20.52 at a probability of 0.0000 (see Appendix III. The results suggest that heteroscedasticity is not a challenge in this study.

## Data Normality Tests

Table 4.3 gives the outcome of data normality tests. The result obtained from the joint probability of skewness and kurtosis for all the variables of interest shows that the data collated from the sampled banks during the period of study are all normally distributed at 1 percent level of significance. Preliminary investigations revealed that LDR and SIZE were not normally distributed. Log transformations were undertaken for these two variables before the final data normality test was carried out as reported in Table 4.3.

## Table 4.3 Results of Data Normality

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Variable** | **Obs** | **Skewness** | **Kurtosis** | **Joint** | **Probability** |
| LDR | 120 | 0.0000 | 0.0000 |  | 0.0000 |
| LAR | 120 | 0.0205 | 0.0514 | 8.22 | 0.0164 |
| CBNLR | 120 | 0.0000 | 0.1232 | 16.80 | 0.0002 |
| SIZE | 120 | 0.2924 | 0.0032 | 8.69 | 0.0130 |
| ROA | 120 | 0.0000 | 0.0000 | 46.28 | 0.0000 |

Source: Extracted from STATA Version 13 Output

## Hausman Specification Test

This test is undertaken to decide between the fixed and random effect model to use for the dependent variable, ROA. A summary of the test results is presented in Table 4.4, while the output from STATA version 13 is contained in Appendices IV and V.

## Table 4.4 Hausman Specification Test Results for ROA

|  |  |  |
| --- | --- | --- |
| **Details** | **ROA** | |
| Model | Fixed | Random |
| R-Squared | 0.1531 | 0.2032 |
| F-Statistics | 6.80 | 29.09 |

|  |  |  |
| --- | --- | --- |
| Prob. | 0.0001 | 0.0000 |
| Hausman Test  Prob | 0.6722 |  |

Source: Extracted from STATA Version 13 Output

The ROA Model reports an R-squared of 15.31 percent and 20.32 percent for fixed and random effect models respectively. This means that the random effect model has a higher explanatory power over the fixed effect model. The F-statistic value of 6.80(0.0001) and 29.09(0.0000) for fixed and random effect models respectively suggest that both models are valid for drawing inference since they are both statistically significant at 1 percent. In selecting from the two-panel regression estimation results, the Hausman test was conducted, and the test is based on the null hypotheses that the random effect model is preferred to the fixed effect model. However, the Hausman test p-value (0.6722), implies that the null hypothesis be rejected since it is above the 5 percent level of significance adopted for this study. This means that the random panel regression results be used in this study for Model One, which utilizes ROA as the dependent variable.

## Regression Results

The regression results used in this study, following the outcome of the Hausman specification tests are based on the random effect models. The details of the results are contained in Appendices IV.

## Panel Regression Results for ROA

These results are presented in Table 4.5 and discussed thereafter.

## Table 4.5 Panel Regression Results based on Random Effect Model for ROA

**------------------------------------------------------------------------------**

## roa | Coef. Std. Err. z P>|z| [95% Conf. Interval]

**-------------+----------------------------------------------------------------**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ldr | .0670317** | **.014012** | **4.78** | **0.000** | **.0395686** | **.0944948** |
| **lar | -.0564427** | **.0249282** | **-2.26** | **0.024** | **-.105301** | **-.0075844** |
| **cbnlr | -.00172** | **.0326373** | **-0.05** | **0.958** | **-.065688** | **.0622479** |
| **size | .0029583** | **.0057523** | **0.51** | **0.607** | **-.008316** | **.0142326** |

## \_cons | .0366031 .0599656 0.61 0.542 -.0809274 .1541335

**-------------+----------------------------------------------------------------**

Source: Extracted from STATA Version 13 Output.

The interpretation of the results contained in Table 4.5 is based on the hypotheses formulated in Chapter One.

## H01: Loan to Deposit Ratio has no significant effect on the financial performance of deposit money banks listed in Nigeria.

The panel regression results explain that loans to deposit ratio has a positive effect on the financial performance of deposit money banks listed in Nigeria. This means that a unit increase in loans to deposit ratio by deposit money banks in Nigeria would lead to a proportionate increase of 0.0670 of the financial performance of banks listed in Nigeria and vice versa. The z-value is 4.78, while P-value was 0.000, which is less than 0.01 means that the P-value is statistically significant at 5 percent level. Therefore, we reject the null hypothesis and uphold the alternative hypothesis. That is, Loans to Deposit Ratio has a significant effect on the financial performance (Proxy by ROA) of listed deposit money banks in Nigeria.

## H02: Loan to Asset Ratio has no significant effect on the financial performance of deposit money banks listed in Nigeria.

The panel regression results explain that Loans to Asset Ratio (LAR) has a negative effect on the financial performance of deposit money banks listed in Nigeria. Meaning that a unit decrease in loans to asset ratio by deposit money banks in Nigeria would lead to a proportionate decrease of - 0.0564 of the financial performance of deposit money banks listed in Nigeria and vice versa. The z-value is -2.26 while P-value was 0.024, which is less than 0.05 means that the P-value is statistically significant at 5 percent level. Therefore, we reject the null hypothesis and uphold the alternate hypothesis. That is, Loans to Asset Ratio has a significant effect on the financial performance (Proxy by ROA) of deposit money banks listed in Nigeria.

## H03: CBN Lending rate has no significant impact on the financial performance of deposit money banks listed in Nigeria.

The panel regression results explain that CBN Lending Rate (CBNLR) has a negative effect on the financial performance of deposit money banks listed in Nigeria. Meaning that a unit decrease in CBN Lending Rate by deposit money banks in Nigeria would lead to a proportionate decrease of -0.0017 of the financial performance of deposit money banks listed in Nigeria and vice versa. The z-value is -0.05 while P-value was 0.958, which is greater than 0.05 means that the P-value is statistically insignificant at 5 percent level. Therefore, we reject the alternate hypothesis and uphold the null hypothesis. That is, the CBN Lending rate does not have a significant effect on the financial performance (Proxy by ROA) of deposit money banks listed in Nigeria.

The results for the control variable, size suggest an insignificant positive effect on financial performance (Proxy by ROA). The standardized beta coefficient is 0.003, while the z-value is 0.51, with a P-value of 0.67.

## Discussion of Findings

The discussion of results concerns the formulated hypotheses, the two theories used in the study, namely the theory of financial intermediation and the institutional theory, and results of prior empirical works.

## Loan to deposit ratio (LDR)

The results of the study suggest that LDR has a significant positive effect on financial performance (proxied by ROA) of deposit money banks listed in Nigeria. This result supports the financial intermediation theory and institutional theory. Both theories postulate that central banks use monetary policies to enhance the profitability of banks.

The findings of this study are consistent with those of Rengasamy (2014), which found a significant positive effect of LDR on ROA. Also, in support of this finding, is the research outcome of Hapsari (2018), which indicated that LDR has a significant positive effect on the financial performance of deposit money banks. However, the results of this study are not supported by Inggawati et al. (2018) because their research showed that LDR had a significant adverse effect on ROA

## Loan to asset ratio (LAR)

Loan to Asset Ratio has a significant adverse effect on the financial performance (Proxy by ROA) of deposit money banks listed in Nigeria. This result is not consistent with Abuzarqa (2019), which indicated total loans to total assets have an insignificant impact on banks' financial performance proxied by ROA. The result is also not supported by the financial intermediation theory and the institutional theory since both theories postulate that central banks use monetary policies to

enhance the profitability of banks. The result is, however, consistent with those of Wahyuni (2018) and Inggawati et al. (2018), whose results indicated a significant negative effect of LDR on ROA.

## CBN lending rate (CBNLR)

CBN Lending rate has an insignificant negative impact on the financial performance (Proxy by ROA) of deposit money banks listed in Nigeria. This finding is supported by Enyioko (2012), which held that lending rate did not significantly enhance the general performance of the banks. This result, too, is not supported by the financial intermediation theory and the institutional theory because the two theories postulate that central banks use monetary policies to enhance the profitability of banks.

# CHAPTER V

**SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

## Introduction

This study presents the summary of the work, its conclusion and possible recommendations. It also presents the limitations encountered in the course of the study and suggestions for further study.

## Summary

This study examined the effect of monetary policy on the financial performance of listed deposit money banks in Nigeria using LDR, LAR and CBNLR as the independent variables and return on assets as the dependent variable.

The result of prior studies that were reviewed indicated an unresolved empirical issue as there appears to be insufficient research on the effect of the LDR policy on banks' financial performance. Moreover, there seems to be sparse attention of LDR as monetary policy technique in the previous works of literature reviewed at the time of this study.

Therefore, with the aid of ex-post facto research design and panel regression model of data analysis, this study sought to address some of these concerns by mainly introducing LDR as a monetary policy technique and using it together with LAR and CBNLR as independent variables to examine the effect of monetary policy on the financial performance (proxied by ROA) of listed DMBs in Nigeria. The findings indicated a positive effect of LDR and negative effect of LAR and CBNLR on the financial performance of listed DMBs in Nigeria.

## Conclusion

The study reveals a significant relationship between monetary policy and the financial performance of deposit money banks. Specifically, the research shows that:

* + 1. LDR has a significant positive effect on the financial performance of deposit money banks.

This means that every increase in the loans to deposit ratio of DMBs will bring about a proportionate increase in their financial performance.

* + 1. LAR has a negative effect on the financial performance of deposit money banks listed in Nigeria, which means that every decrease in the LAR of DMBs will result in a proportionate decrease in their financial performance.
    2. CBNLR has a negative effect on deposit money banks' financial performance, which means that every decrease in the CBNLR of DMBs will lead to a proportionate decrease in their financial performance.

## Recommendations

Following from the findings of this study, recommendations are made as follows:

* + 1. The management of DMBs in Nigeria should increase the loan to deposit ratio of their respective banks to increase their profitability and further enhance their financial performance and economic growth.
    2. DMBs should not rely on LAR and CBNLR as a financial performance-enhancing strategy since the effect of these variables on financial performance is negative.
    3. The CBN should sustain the minimum LDR policy implementation as this study has shown a positive effect of LDR on the financial performance of DMBs, which is a further indication of increased lending to the real sector to support economic growth objective of the policy.

## Limitations of the Study

From the literation review conducted at the time of this study, it appears that prior research paid sparse attention to LDR as monetary policy technique. Therefore, this study has mainly introduced LDR as a monetary policy technique and used it together with LAR and CBNLR as independent variables to examine the effect of monetary policy on the financial performance of DMBs listed in Nigeria and also augment previous reviews relating to the subject matter.

## Suggestions for Further Studies

This study focused on quoted deposit money banks in Nigeria. However, a further study may extend the analysis to include unquoted deposit money banks in Nigeria. Consequently, a comparative analysis of the financial performance of the listed and unlisted deposit money banks in Nigeria could be carried out.

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**APPENDIX I - RAW DATA USED IN THE STUDY**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Banks** | **Years** | **LDR** | **LAR** | **CBNLR** | **SIZE** | **ROA** |
| Access Bank Nigeria Plc | 2010 | 0.92 | 0.56 | 1.17 | 796.22 | 0.01 |
| Access Bank Nigeria Plc | 2011 | 0.52 | 0.35 | 1.2 | 1,629.00 | 0.01 |
| Access Bank Nigeria Plc | 2012 | 0.5 | 0.35 | 1.2 | 1,745.47 | 0.02 |
| Access Bank Nigeria Plc | 2013 | 0.59 | 0.42 | 1.2 | 1,835.47 | 0.02 |
| Access Bank Nigeria Plc | 2014 | 0.76 | 0.53 | 1.11 | 2,104.36 | 0.02 |
| Access Bank Nigeria Plc | 2015 | 0.81 | 0.53 | 1.04 | 2,591.33 | 0.02 |
| Access Bank Nigeria Plc | 2016 | 0.87 | 0.52 | 1.14 | 3,483.87 | 0.02 |
| Access Bank Nigeria Plc | 2017 | 0.89 | 0.47 | 1.14 | 4,102.24 | 0.01 |
| Access Bank Nigeria Plc | 2018 | 0.78 | 0.4 | 1.14 | 4,954.16 | 0.02 |
| Access Bank Nigeria Plc | 2019 | 0.43 | 0.56 | 1.17 | 7,146.61 | 0.01 |
| Eco –Bank | 2010 | 0.66 | 0.75 | 1.17 | 454.24 | 0.01 |
| Eco –Bank | 2011 | 0.61 | 0.43 | 1.2 | 1,102.03 | 0.01 |
| Eco –Bank | 2012 | 0.65 | 0.47 | 1.2 | 3,411.13 | 0.01 |
| Eco –Bank | 2013 | 0.69 | 0.51 | 1.2 | 3,599.56 | 0.01 |
| Eco –Bank | 2014 | 0.71 | 0.51 | 1.11 | 4,501.79 | 0.02 |
| Eco –Bank | 2015 | 0.68 | 0.48 | 1.04 | 5,567.12 | 0.001 |
| Eco –Bank | 2016 | 0.67 | 0.45 | 1.14 | 6,255.85 | -0.01 |
| Eco –Bank | 2017 | 0.61 | 0.42 | 1.14 | 6,864.07 | 0.01 |
| Eco –Bank | 2018 | 0.57 | 0.41 | 1.14 | 8,195.04 | 0.01 |
| Eco –Bank | 2019 | 0.55 | 0.43 | 1.17 | 8,621.94 | 0.02 |
| Wema Bank Nigeria Plc | 2010 | 0.36 | 0.22 | 1.17 | 199.35 | 0.08 |
| Wema Bank Nigeria Plc | 2011 | 0.46 | 0.3 | 1.2 | 221.16 | -0.01 |
| Wema Bank Nigeria Plc | 2012 | 0.42 | 0.3 | 1.2 | 245.70 | -0.02 |
| Wema Bank Nigeria Plc | 2013 | 0.45 | 0.29 | 1.2 | 330.87 | 0.03 |
| Wema Bank Nigeria Plc | 2014 | 0.57 | 0.39 | 1.11 | 382.56 | 0.02 |
| Wema Bank Nigeria Plc | 2015 | 0.8 | 0.54 | 1.04 | 396.74 | 0.01 |
| Wema Bank Nigeria Plc | 2016 | 0.85 | 0.53 | 1.14 | 424.04 | 0.01 |
| Wema Bank Nigeria Plc | 2017 | 0.85 | 0.55 | 1.14 | 387.55 | 0.01 |
| Wema Bank Nigeria Plc | 2018 | 0.69 | 0.52 | 1.14 | 477.92 | 0.01 |
| Wema Bank Nigeria Plc | 2019 | 0.61 | 0.53 | 1.17 | 488.80 | 0.02 |
| Fidelity Bank Nigeria Plc | 2010 | 0.63 | 0.42 | 1.17 | 497.55 | 0.01 |
| Fidelity Bank Nigeria Plc | 2011 | 0.5 | 0.38 | 1.2 | 737.73 | 0.01 |
| Fidelity Bank Nigeria Plc | 2012 | 0.48 | 0.38 | 1.2 | 914.36 | 0.02 |
| Fidelity Bank Nigeria Plc | 2013 | 0.53 | 0.39 | 1.2 | 1,081.22 | 0.01 |
| Fidelity Bank Nigeria Plc | 2014 | 0.66 | 0.48 | 1.11 | 1,187.03 | 0.01 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Banks** | **Years** | **LDR** | **LAR** | **CBNLR** | **SIZE** | **ROA** |
| Fidelity Bank Nigeria Plc | 2015 | 0.75 | 0.46 | 1.04 | 1,231.72 | 0.01 |
| Fidelity Bank Nigeria Plc | 2016 | 0.91 | 0.55 | 1.14 | 1,298.14 | 0.004 |
| Fidelity Bank Nigeria Plc | 2017 | 0.99 | 0.56 | 1.14 | 1,379.21 | 0.01 |
| Fidelity Bank Nigeria Plc | 2018 | 0.87 | 0.49 | 1.14 | 1,719.88 | 0.01 |
| Fidelity Bank Nigeria Plc | 2019 | 0.75 | 0.51 | 1.17 | 1,970.62 | 0.02 |
| First Bank Nigeria Plc | 2010 | 0.8 | 0.49 | 1.17 | 2,354.83 | 0.01 |
| First Bank Nigeria Plc | 2011 | 0.64 | 0.44 | 1.2 | 2,861.69 | 0.006 |
| First Bank Nigeria Plc | 2012 | 0.64 | 0.48 | 1.2 | 3,228.38 | 0.02 |
| First Bank Nigeria Plc | 2013 | 0.6 | 0.45 | 1.2 | 3,871.00 | 0.01 |
| First Bank Nigeria Plc | 2014 | 0.71 | 0.5 | 1.11 | 4,343.74 | 0.02 |
| First Bank Nigeria Plc | 2015 | 0.61 | 0.44 | 1.04 | 4,166.19 | 0.004 |
| First Bank Nigeria Plc | 2016 | 0.67 | 0.44 | 1.14 | 4,736.81 | 0.002 |
| First Bank Nigeria Plc | 2017 | 0.64 | 0.38 | 1.14 | 5,236.54 | 0.007 |
| First Bank Nigeria Plc | 2018 | 0.48 | 0.3 | 1.14 | 5,568.32 | 0.01 |
| First Bank Nigeria Plc | 2019 | 0.46 | 0.3 | 1.17 | 6,203.52 | 0.01 |
| Guaranty Trust Bank | 2010 | 0.8 | 0.52 | 1.17 | 1,168.05 | 0.03 |
| Guaranty Trust Bank | 2011 | 0.69 | 0.44 | 1.2 | 1,608.65 | 0.03 |
| Guaranty Trust Bank | 2012 | 0.69 | 0.45 | 1.2 | 1,734.88 | 0.05 |
| Guaranty Trust Bank | 2013 | 0.7 | 0.48 | 1.2 | 2,102.85 | 0.04 |
| Guaranty Trust Bank | 2014 | 0.79 | 0.54 | 1.11 | 2,355.88 | 0.03 |
| Guaranty Trust Bank | 2015 | 0.85 | 0.54 | 1.04 | 2,524.59 | 0.04 |
| Guaranty Trust Bank | 2016 | 0.8 | 0.51 | 1.14 | 3,116.39 | 0.04 |
| Guaranty Trust Bank | 2017 | 0.7 | 0.43 | 1.14 | 3,351.10 | 0.05 |
| Guaranty Trust Bank | 2018 | 0.55 | 0.38 | 1.14 | 3,287.34 | 0.06 |
| Guaranty Trust Bank | 2019 | 0.59 | 0.4 | 1.17 | 3,758.92 | 0.05 |
| Union Bank Nigeria Plc | 2010 | 0.31 | 0.2 | 1.17 | 996.58 | -0.004 |
| Union Bank Nigeria Plc | 2011 | 0.33 | 0.16 | 1.2 | 1,047.27 | -0.07 |
| Union Bank Nigeria Plc | 2012 | 0.3 | 0.15 | 1.2 | 1,014.81 | 0.003 |
| Union Bank Nigeria Plc | 2013 | 0.48 | 0.23 | 1.2 | 1,002.76 | 0.005 |
| Union Bank Nigeria Plc | 2014 | 0.59 | 0.31 | 1.11 | 1,010.98 | 0.03 |
| Union Bank Nigeria Plc | 2015 | 0.64 | 0.35 | 1.04 | 1,049.73 | 0.01 |
| Union Bank Nigeria Plc | 2016 | 0.77 | 0.4 | 1.14 | 1,252.68 | 0.01 |
| Union Bank Nigeria Plc | 2017 | 0.64 | 0.36 | 1.14 | 1,455.54 | 0.008 |
| Union Bank Nigeria Plc | 2018 | 0.55 | 0.32 | 1.14 | 1,463.86 | 0.01 |
| Union Bank Nigeria Plc | 2019 | 0.62 | 0.29 | 1.17 | 1,786.91 | 0.01 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Banks** | **Years** | **LDR** | **LAR** | **CBNLR** | **SIZE** | **ROA** |
| Sterling Bank Nigeria Plc | 2010 | 0.63 | 0.39 | 1.17 | 260.69 | 0.01 |
| Sterling Bank Nigeria Plc | 2011 | 0.41 | 0.32 | 1.17 | 504.05 | 0.01 |
| Sterling Bank Nigeria Plc | 2012 | 0.49 | 0.39 | 1.2 | 580.23 | 0.01 |
| Sterling Bank Nigeria Plc | 2013 | 0.56 | 0.45 | 1.2 | 707.80 | 0.01 |
| Sterling Bank Nigeria Plc | 2014 | 0.57 | 0.45 | 1.11 | 824.54 | 0.01 |
| Sterling Bank Nigeria Plc | 2015 | 0.57 | 0.42 | 1.04 | 799.45 | 0.006 |
| Sterling Bank Nigeria Plc | 2016 | 0.8 | 0.56 | 1.14 | 830.80 | 0.006 |
| Sterling Bank Nigeria Plc | 2017 | 0.87 | 0.56 | 1.14 | 1,068.80 | 0.007 |
| Sterling Bank Nigeria Plc | 2018 | 0.81 | 0.57 | 1.14 | 1,085.88 | 0.008 |
| Sterling Bank Nigeria Plc | 2019 | 0.69 | 0.53 | 1.17 | 1,165.51 | 0.008 |
| United Bank for African | 2010 | 0.46 | 0.38 | 1.17 | 1,599.19 | -0.0006 |
| United Bank for African | 2011 | 0.42 | 0.32 | 1.17 | 1,920.44 | -0.004 |
| United Bank for African | 2012 | 0.38 | 0.29 | 1.2 | 2,272.92 | 0.02 |
| United Bank for African | 2013 | 0.43 | 0.35 | 1.2 | 2,642.30 | 0.02 |
| United Bank for African | 2014 | 0.49 | 0.39 | 1.11 | 2,762.57 | 0.02 |
| United Bank for African | 2015 | 0.5 | 0.38 | 1.04 | 2,752.62 | 0.02 |
| United Bank for African | 2016 | 0.61 | 0.43 | 1.14 | 3,504.47 | 0.02 |
| United Bank for African | 2017 | 0.6 | 0.41 | 1.14 | 4,069.47 | 0.02 |
| United Bank for African | 2018 | 0.51 | 0.35 | 1.14 | 4,869.74 | 0.02 |
| United Bank for African | 2019 | 0.53 | 0.37 | 1.17 | 5,604.05 | 0.02 |
| Unity Bank Nigeria Plc | 2010 | 0.52 | 0.38 | 1.17 | 304.04 | 0.04 |
| Unity Bank Nigeria Plc | 2011 | 0.44 | 0.31 | 1.17 | 372.93 | 0.005 |
| Unity Bank Nigeria Plc | 2012 | 0.7 | 0.48 | 1.2 | 395.72 | 0.02 |
| Unity Bank Nigeria Plc | 2013 | 0.64 | 0.48 | 1.2 | 403.63 | -0.05 |
| Unity Bank Nigeria Plc | 2014 | 0.79 | 0.53 | 1.11 | 413.31 | 0.03 |
| Unity Bank Nigeria Plc | 2015 | 1.06 | 0.55 | 1.04 | 409.32 | 0.01 |
| Unity Bank Nigeria Plc | 2016 | 1.04 | 0.56 | 1.14 | 443.32 | 0.004 |
| Unity Bank Nigeria Plc | 2017 | 0.03 | 0.06 | 1.14 | 492.68 | -0.09 |
| Unity Bank Nigeria Plc | 2018 | 0.18 | 0.18 | 1.14 | 156.51 | 0.005 |
| Unity Bank Nigeria Plc | 2019 | 0.78 | 0.29 | 1.17 | 235.98 | 0.002 |
| FCMB Nigeria Plc | 2010 | 0.98 | 0.61 | 1.17 | 537.59 | 0.01 |
| FCMB Nigeria Plc | 2011 | 0.78 | 0.53 | 1.17 | 601.62 | -0.01 |
| FCMB Nigeria Plc | 2012 | 0.55 | 0.39 | 1.2 | 908.55 | 0.02 |
| FCMB Nigeria Plc | 2013 | 0.62 | 0.45 | 1.2 | 1,008.28 | 0.02 |
| FCMB Nigeria Plc | 2014 | 0.84 | 0.53 | 1.11 | 1,169.36 | 0.02 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Banks** | **Years** | **LDR** | **LAR** | **CBNLR** | **SIZE** | **ROA** |
| FCMB Nigeria Plc | 2015 | 0.85 | 0.51 | 1.04 | 1,159.53 | 0.02 |
| FCMB Nigeria Plc | 2016 | 1 | 0.56 | 1.14 | 1,172.78 | 0.04 |
| FCMB Nigeria Plc | 2017 | 0.94 | 0.55 | 1.14 | 1,186.52 | 0.02 |
| FCMB Nigeria Plc | 2018 | 0.77 | 0.44 | 1.14 | 1,431.30 | 0.01 |
| FCMB Nigeria Plc | 2019 | 0.75 | 0.43 | 1.17 | 1,668.51 | 0.01 |
| Zenith Bank Nigeria Plc | 2010 | 0.55 | 0.38 | 1.17 | 1,906.32 | 0.02 |
| Zenith Bank Nigeria Plc | 2011 | 0.52 | 0.38 | 1.17 | 2,326.70 | 0.02 |
| Zenith Bank Nigeria Plc | 2012 | 0.5 | 0.35 | 1.17 | 2,604.50 | 0.04 |
| Zenith Bank Nigeria Plc | 2013 | 0.54 | 0.39 | 1.2 | 3,143.13 | 0.03 |
| Zenith Bank Nigeria Plc | 2014 | 0.68 | 0.46 | 1.2 | 3,755.26 | 0.03 |
| Zenith Bank Nigeria Plc | 2015 | 0.78 | 0.49 | 1.04 | 4,006.84 | 0.03 |
| Zenith Bank Nigeria Plc | 2016 | 0.78 | 0.48 | 1.14 | 4,739.83 | 0.02 |
| Zenith Bank Nigeria Plc | 2017 | 0.61 | 0.38 | 1.14 | 5,595.25 | 0.03 |
| Zenith Bank Nigeria Plc | 2018 | 0.49 | 0.31 | 1.14 | 5,955.71 | 0.03 |
| Zenith Bank Nigeria Plc | 2019 | 0.54 | 0.36 | 1.17 | 6,346.88 | 0.03 |

## APPENDIX II – DESCRIPTIVE STATISTICS

**Statistics/Data Analysis StataCorp**

## 4905 Lakeway Drive

**College Station, Texas 77845 USA**

**800-STATA-PC** [**http://www.stata.com**](http://www.stata.com/) **979-696-4600** [**stata@stata.com**](mailto:stata@stata.com)

**979-696-4601 (fax)**

## stats | ldr lar cbnlr size roa

**---------+------------------------------------------------------------**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **min |** | **.03** | **.06** | **1.04** | **156.506** | **-.09** |
| **max |** | **1.06** | **.75** | **1.2** | **8621.939** | **.08** |
| **mean |** | **.6401667** | **.4260833** | **1.15025** | **2240.598** | **.01427** |
| **sd | .1765066** | | **.1064026** | **.046372 1941.88** | | **.0197538** |

## ----------------------------------------------------------------------

**APPENDIX III - Diagnostics Test**

## . sktest ldr lar cbnlr size roa

**Skewness/Kurtosis tests for Normality**

## ------- joint ------

**Variable | Obs Pr(Skewness) Pr(Kurtosis) adj chi2(2) Prob>chi2**

## -------------+--------------------------------------------------------------- ldr | 120 0.0000 0.0000 . 0.0000

## lar | 120 0.0205 0.0514 8.22 0.0164

## cbnlr | 120 0.0000 0.1232 16.80 0.0002

## size | 120 0.2924 0.0032 8.69 0.0130

**roa | 120 0.0000 0.0000 46.28 0.0000**

## . correlate ldr lar cbnlr size roa eps (obs=120)

**| ldr lar cbnlr size roa**

## -------------+------------------------------------------------------

**ldr | 1.0000**

## lar | 0.7748 1.0000

**cbnlr | -0.2369 -0.2619 1.0000**

## size | 0.1258 0.0731 -0.1090 1.0000

**roa | 0.4172 0.2368 -0.0644 0.2161**

## . estat vif

**Variable | VIF 1/VIF**

## -------------+----------------------

|  |  |  |
| --- | --- | --- |
| **lar |** | **2.55** | **0.392186** |
| **ldr |** | **2.54** | **0.394031** |
| **cbnlr |** | **1.09** | **0.921340** |
| **size |** | **1.03** | **0.975103** |

**-------------+----------------------**

## Mean VIF | 1.80

**. estat hettest**

## Breusch-Pagan / Cook-Weisberg test for heteroskedasticity Ho: Constant variance

**Variables: fitted values of roa chi2(1) = 20.52**

## Prob > chi2 = 0.0000

**APPENDIX IV - FIXED AND RANDOM EFFECTS RESULTS OUTPUT - ROA**

## . \*(8 variables, 120 observations pasted into data editor)

**. xtset panelid year, yearly**

## panel variable: panelid (strongly balanced) time variable: year, 2010 to 2019

**delta: 1 year**

## . xtreg roa ldr lar cbnlr size, fe

**Fixed-effects (within) regression Number of obs = 120**

## Group variable: panelid Number of groups = 12

**R-sq: within = 0.2074 Obs per group: min = 10**

## between = 0.0405 avg = 10.0

**overall = 0.1531 max = 10**

## F(4,104) = 6.80

**corr(u\_i, Xb) = -0.0087 Prob > F = 0.0001**

## ------------------------------------------------------------------------------

**roa | Coef. Std. Err. t P>|t| [95% Conf. Interval]**

## -------------+----------------------------------------------------------------

**ldr | .0689105 .0143522 4.80 0.000 .0404495 .0973716**

|  |  |  |  |
| --- | --- | --- | --- |
| **lar | -.0657052 .026331** | **-2.50 0.014** | **-.1179207** | **-.0134898** |
| **cbnlr | -.0126562 .0335466** | **-0.38 0.707** | **-.0791804** | **.0538679** |
| **size | -.0028646 .0076453** | **-0.37 0.709** | **-.0180255** | **.0122964** |

## \_cons | .08948 .0722619 1.24 0.218 -.0538181 .2327781

**-------------+----------------------------------------------------------------**

## sigma\_u | .01145862

**sigma\_e | .01546832**

## rho | .35432017 (fraction of variance due to u\_i)

**------------------------------------------------------------------------------**

## F test that all u\_i=0: F(11, 104) = 4.32 Prob > F = 0.0000

**. estimates store FIXED**

## . xtreg roa ldr lar cbnlr size, re

**Random-effects GLS regression Number of obs = 120 Group variable: panelid Number of groups = 12**

## R-sq: within = 0.2022 Obs per group: min = 10 between = 0.2520 avg = 10.0

**overall = 0.2032 max = 10**

## Wald chi2(4) = 29.09

**corr(u\_i, X) = 0 (assumed) Prob > chi2 = 0.0000**

## ------------------------------------------------------------------------------

**roa | Coef. Std. Err. z P>|z| [95% Conf. Interval]**

## -------------+----------------------------------------------------------------

|  |  |  |
| --- | --- | --- |
| **ldr | .0670317 .014012** | **4.78 0.000** | **.0395686 .0944948** |
| **lar | -.0564427 .0249282** | **-2.26 0.024** | **-.105301 -.0075844** |

**cbnlr | -.00172 .0326373 -0.05 0.958 -.065688 .0622479**

## size | .0029583 .0057523 0.51 0.607 -.008316 .0142326

**\_cons | .0366031 .0599656 0.61 0.542 -.0809274 .1541335**

## -------------+----------------------------------------------------------------

**sigma\_u | .01024016**

## sigma\_e | .01546832

**rho | .30471318 (fraction of variance due to u\_i)**

## ------------------------------------------------------------------------------

**. estimates store RANDOM**

## . hausman FIXED RANDOM

**---- Coefficients ----**

## | (b) (B) (b-B) sqrt(diag(V\_b-V\_B))

**| FIXED RANDOM Difference S.E.**

## -------------+----------------------------------------------------------------

|  |  |  |  |
| --- | --- | --- | --- |
| **ldr | .0689105** | **.0670317** | **.0018788** | **.0031063** |
| **lar | -.0657052** | **-.0564427** | **-.0092625** | **.00848** |
| **cbnlr | -.0126562** | **-.00172** | **-.0109362** | **.0077576** |
| **size | -.0028646** | **.0029583** | **-.0058229** | **.005036** |

**------------------------------------------------------------------------------**

## b = consistent under Ho and Ha; obtained from xtreg

**B = inconsistent under Ha, efficient under Ho; obtained from xtreg**

## Test: Ho: difference in coefficients not systematic chi2(4) = (b-B)'[(V\_b-V\_B)^(-1)](b-B)

**= 2.35**

## Prob>chi2 = 0.6722