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MONETARY POLICY AND PERFORMANCE OF DEPOSIT MONEY BANKS IN NIGERIA

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ABSTRACT

This study empirically investigates the effect of monetary policyon the performance of deposit money banks (DMBs) in Nigeria's economy for the period of 1990 to 2021. The study is based on the quantity theory of money and for the achievement of its objectives liquidity ratio (LQR), cash reserve ratio (CRR), prime lending rate (PLR) and exchange rate (EXR) were used to proxy monetary policy which is the study's explanatory variable. Also, banks' performance being the dependent variable of the study was proxied with the ratio of their return on assets to gross domestic product (ROA/GDP). Secondary data sourced from the statistical bulletin of the Central Bank of Nigeria (CBN) were utilized in the study. Unit root test was carried out and the data were found to be stationary at levels (order 0) thereby necessitating the multiple regression (OLS) test. From the multiple regression (OLS) test, it was found that CRR have a positive and insignificant relationship with the ratio of banks' ROA/GDP. EXR was observed to have a negative and significant relationship with the ratio of banks' ROA/GDP. Also, while PLR was found to have a positive and insignificant relationship with ratio of banks' ROA/GDP, LQR was observed to have a negative and significant relationship with the ratio of banks' ROA/GDP. The coefficient of determination revealed that jointly, variations in the proxies of the independent variable accounted for 23.48% of changes in the dependent variable. From the Granger Causality test it was observed that causality only flowed from PLR to ratio of banks' ROA/GDP. Therefore, no bi-directional causality was found among the variables. In furtherance, conclusions were drawn from the findings and the following recommendations were given; (i) government should reduce the stipulated cash reserve ratio (CRR) in order to boost credit expansion, (ii) deposit money banks (DMBs) should mobilize more deposits through effective marketing, (iii) deposit money banks (DMBs) should make their prime lending rates to be attractive to prime customers, etc.

KEYWORDS

Monetary Policy, Deposit Money Banks, Cash Reserve Ratio, Prime Lending Rate, Exchange Rate, Liquidity Ratio.

1.0 Introduction

An economy's financial sector plays a major role in its economic growth which could result in economic development and this can never be over overemphasized. Simply put, the financial sector is the channel through which idle funds are made available to productive sectors of the economy through the process of financial intermediation, thus enabling the usage of savings in the economy to be used for the creation of job opportunities for the populace and stimulation of prosperity in the economy. The financial sector provides strong confidence for depositors, thereby motivating and encouraging savings in the economy. Also, a financial sector that is strong helps in the sustenance of an economy against external shocks which may arise from a reduction in external capital flow (Alalade et al., 2020). A financial sector that is solid and stable is necessary to make a well-functioning national economy and ensure balanced liquidity in the economy. Hence, Aurangzeb (2012) states that a financial sector that is well-structured, strong and developed is required for the achievement of sustained growth in the economy. Hence, it follows that a well-structured, strong and developed financial sector is one which has very effective and efficient financial institutions, one of which is deposit money banks (DMBs). Banks are financial institutions which are incorporated as well as licensed to undertake the business of banking which includes receiving customers' deposits, accepting withdrawal on customers' accounts and the issuing loans and advances to customers that are willing (BOFIA, 2020).

Appropriate liquidity management is required to bring about economic growth. However, to achieve stability in the economy, the proper use of monetary policy is required. Despite the establishment of regulatory agencies and committees of monetary policy, banks in Nigeria have been deterred in the creation of adequate liquidity as well as additional credit for the maintenance of the whole economy. According to Ayodele (2014) the inputs of Nigerian deposit money banks in the development process can never be overstated since they play a lot of roles in that regard.

Over the years Nigeria's Central Bank has instituted different monetary policies for the purpose of regulating and developing the local financial system so as to achieve key macro-economic objectives that always conflict and result in distortions in the economic system (Nnamdi and Nwakanma, 2013). Banks react to monetary policy changes, either when the Central Bank increases policy rates or injects money into the economy through open market operations (OMO) by decreasing overall returns and increasing financial instability (Dang and Huynh, 2022). However, some tools of monetary policy such as capital requirements and cash reserve have been employed to buffer deposit money banks (DMBs) liquidity creation process through deposit base as well as credit facilities to the entire public (Ndugbu & Okere, 2015). Monetarist and Traditional theories have opined that monetary policy mechanisms are effective regulatory tools which tends to affect the financial performance of banks. It is the perspective of the Central Bank of Nigeria (CBN) to securely guarantee, deposit money banks financial performance through the use of monetary policy (Akomolafe et al., 2015).

The monetary policy of any country remains an important tool in stimulating stability and growth of financial institutions in such an economy, mostly in developing economies. In the case of Nigeria, the main objectives usually are; the promotion of monetary stability, strengthening of the performance of the external sector and generation of a sound financial system which will support increased employment and output. Monetary policy functions as a significant weapon of economic stabilization which includes measures that are designed for the purpose of regulating and controlling the cost, volume, availability and direction of money as well as credit within an economy in order to achieve some specified macroeconomic policy objectives (Ogundipe et al., 2020). However, monetary policy

scope is limited by the traps of liquidity as well as deflation, and sometimes the policy is outrightly cancelled by other factors (Ifionu, 2019).

According to Central Bank of Nigeria (1994) monetary policy is referred to as the combination of different measures which are designed in order to regulate money's value, cost and its supply within an economy (Okereke et al., 2009). Osho & Adelalu (2020) opines that it entails a cautious exertion by Central Bank of Nigeria (CBN) in order to control the supply of money for the attainment of specified financial objectives in the macro-economy. Hence, Ifionu (2019) surmised that it is actually a macro-economic policy which the Central Bank of Nigeria (CBN) puts down to manage the supply of money as well as interest rate. Monetary policy entails a deliberate effort by a country's monetary authorities (i.e. the Central Bank of Nigeria) in controlling the supply of money as well as credit conditions in order to achieve specific broad objectives in the economy (Mengistu, 2021).

The CBN determines specific targets on the monetary variables. Though, some of these objectives are actually consistent with each other, others are not. For instance, price stability objectives mostly conflict with the objectives of interest rate stability and high short run employment (Ndugbu & Okere, 2015). Little wonder Ifionu (2019) states that sometimes the policy is outrightly cancelled by other factors. The role which the banking industry plays in the process of development cannot be over-emphasized because they carry out many key functions and the deposit money banks (DMBs) are seen as the most important part of the banking industry in Nigeria. In order to achieve their profit maximization objectives, DMBs invest their customer's deposits in different short-term and long-term outlet of investments. However, a large chunk of these deposits is extended as loan. As such, Solomon (2012) asserts that the more advances and loans they give to borrowers, the more they profit make. Before 1986 direct monetary instruments which includes selective credit controls, credit ceilings, administered interest and exchange rates, cash reserve requirements and special deposits to regulate the banking system were employed (Ndugbu & Okere, 2015). Fixing of interest rates at a level that is relatively low was mainly done to promote investment and growth. Sometimes special deposits were imposed in order to reduce the amount of excess reserves and the banks' credit creating capacity.

Whenever the regulations and actions of CBN restrict the operations and activities of profit-making financial institutions (deposit money banks and others) they quickly search for alternative means of making profit (). The instruments of monetary policy do not affect economic activities directly; rather they work through their effects on financial markets and on financial institutions such as deposit money banks (DMBs). The policy instruments have their initial impact on the demand for and supply of reserves held by depository institutions and consequently on availability of credit. By manipulating these instruments, the CBN affect the rate of growth of the money supply, the level of interest rate, security prices, credit availability and liquidity creation of DMBs (Ogbeifun & Akinola, 2019). A core objective of the CBN is to ensure that these DMBs are not distressed. As such, in its bid to ensure that, CBN introduced the N25 billion capitalization requirement for the then existing banks. Banks that could not meet this requirement faced distress. From our investigation, we found out that DMBs are still finding it hard to cope with these CBN's monetary policies and guidelines (Alalade et al., 2020). The big question which calls to mind at this point is "what is the effect of CBN's monetary policy on deposit money banks in Nigeria?". This question constitutes the core problem of this study. Therefore, this study is designed to analyze the effect of the monetary policy of the CBN on DMBs. The null hypothesis to be tested in this study will be: there is no significant effect of monetary policy on deposit money banks performance in Nigeria.

The remaining part of the study is actually divided into four sections. While section two contains literature review and theoretical framework; the third section focuses on methodology; empirical

results were presented in section four and section five contains the discussions, conclusion and recommendations of the study.

2.0 Literature Review and Theoretical Framework

2.1 Conceptual Review

- **CBN and Monetary Policy**

The responsibility for monetary policy formulation rests with the CBN (Ezirim, 2005). Monetary policy objective is couched in terms of maintaining price stability and promoting non-inflationary growth. The primary means adopted to achieve this objective is to set aggregate money supply targets and to rely on the open market operation (OMO) and other policy instruments to achieve the target. Monetary policy in Nigeria has relied more on indirect transmission mechanism (Ndugbu & Okere, 2015). Before to the adoption of structural adjustment programme (SAP), there existed a limit to the required capital base of DMBs in Nigeria. Sequel to the adoption of structural adjustment programme (SAP), the benchmark for minimum capital base was increased. This era saw the prescription of the minimum of ₦1 for DMBs and ₦500 million for merchant due to the persistent illiquidity problems and very poor deposit management. In July 2004 there was another increase in the minimum capital base of DMBs to ₦25 billion (Ogbeifun &Akinola, 2019).

Monetary policy instruments' accessibility affects the efficiency and speed of the recognition of the policy objectives. For instance, assuming that the objective is to decrease money supply, the required policy frameworks are then put in place. The number of instruments which can actually be manipulated by these policy makers, if adequately done, would be reinforced in the quick achievement of the desire objectives. But if it is not adequate, the objectives so desired can only be approximated and/or met after a long-time lag which reduces the effectiveness of this policy, thus having the resultant effect on performance of deposit money banks in Nigeria (Onoh, 2017). Folawewo and Osinubi (2006) asserts that monetary policy is the combination of measures that designed to regulate money's value, supply as well as cost within an economy, that is in consonance with expected level of economic activity. Alluding to this, Okereke et al. (2009) refers to monetary policy as the combination of different measures which are designed in order to regulate money's value, cost and its supply within an economy. It entails a cautious exertion by Central Bank of Nigeria (CBN) in order to control the supply of money for the attainment of specified financial objectives in the macro-economy (Osho and Adelalu, 2020). For Mengistu (2021) it is a concerted effort of a country's apex bank in controlling the supply of money as well as credit conditions in order to achieve specific broad objectives in the economy.

- **Monetary Policy Control Mechanisms**

Majorly there exist two significant monetary policy control mechanisms used by Central Bank of Nigeria at any particular point in time. These control mechanisms are often times referred to as monetary policy tools and/or instruments and they have effect on the proximate target. Monetary instruments/tools can be indirect or direct. While the indirect instruments/tools include minimum discount rate, Open Market Operation (OMO), liquidity ratio, cash reserve requirement and selected credit policies, the direct instruments/tools are deposit ceiling, exchange control, aggregate credit ceilings, special deposits, restriction on the placement of public deposit and stabilization securities (Ndugbu & Okere, 2015). Within the short-run monetary policy have vital roles. This means that it is used for counter-cyclical stabilization of output, whereas in the long run; it is used for the achievement of the macroeconomic goals of price stability, full employment, rapid economic growth and equilibrium in the balance of payments. Monetary policy according to Uniamikogbo and Enoma

(2001) is a prime tool for economic management which the government uses to shape the performance of the economy. When measured against the fiscal policy, monetary policy is seen to be faster at resolving shocks in the economy.

Indirect or Quantitative Instruments/ Tools of Monetary Policy

The quantitative or indirect instruments can as well be referred to as the monetary policy general tools. These tools are related to the Quantity of money. They are designed to control the total volume of bank credit within the economy. The tools are naturally indirect and are used in influencing the quantity of credit in the country. They include:

(1) **Open Market Operations (OMO):** This is used to tackle the shortage of money within the money market, to influence the term CBN buys or sells on behalf of the fiscal authorities, securities to non-banking and banking public (i.e. In the open market). One of such securities is treasury bills (Osho and Adelalu, 2020). When the CBN sells securities to the public, it actually reduces the reserves supply and when it buys the securities back by redeeming them, it increases the supply of reserves to DMBs, as such, affecting the money supply in the economy (Ibeabuchi, 2007).

(2) **Interest Rate:** CBN lends to sound DMBs at an interest rate that is more favourable. This interest rate is referred to as the minimum rediscount rate (MRR) (Obidike et al., 2015). This rate sets the benchmark for interest rate system within money market and therefore, affect supply of savings (which affects the supply of reserves and monetary aggregates), the supply of credit and investment supply (which affects full employment and GDP).

(3) **Exchange Rate:** The balance of payments (BOP) can be in surplus or deficit and these affect the monetary base, and hence the money supply in one direction or the other. Through the purchase and sales of foreign exchange CBN ensures that exchange rate is at levels which do not affect domestic money supply in an undesired direction, through the real exchange rate and the balance of payments (Osho and Adelalu, 2020). When real exchange rate is not aligned it affects the current account balance because of the impacts on external competitiveness (Imoisi et al., 2013).

(4) **Rediscount Rate:** This is the rate at which the CBN provides loans to DMBs. Such lending by the central bank is usually at panel rates and it acts as the lender of last resort. By instituting appropriate changes in this rate, the CBN controls the volume of total credits indirectly. This is done in order to influence the lending capacity of these DMBs. During inflationary periods, the CBN may increase the rediscount rate, making the obtaining of loans from her more expensive. By doing this, credit is made tighter in the system. Similarly, during periods of depression, when it is necessary to encourage DMBs to create more credits, the CBN will lower the rediscount rate (Onoh, 2017).

Direct or Qualitative Instruments/ Tools of Monetary Policy

There exist instruments which are available for money and credit control. However, the instrument mix that is to be employed at any point in time is a function of the goals to be achieved and the degree of usefulness of such instruments to a large extent affects the economic fortunes of the country (Ajayi and Atanda, 2012).

(1) **Reserve Requirement:** Central Bank of Nigeria (CBN) authorizes Deposit Money Banks (DMBs) to maintain a certain proportion of their deposit liabilities (reserves) as vault cash. This demands that a fractional reserve limits the amount of loans DMBs can make to the home economy and therefore limits the money supply. This simply means that DMBs

generally maintain a stable relationship between their reserve holdings and the amount of credit they extend to the public (Akomolafe et al., 2015).

(2) **Special Deposits:** These are the additional cash reserves (minimum cash requirement) that DMBs are ordered to deposit in the CBN. The CBN has the authority to issue guidelines periodically requiring all DMBs to maintain special deposit, an amount which is equal to the percentages of the bank's deposit liabilities (Ayodele, 2014).

(3) **Moral Suasion:** This is an instrument through which policy makers discourage or encourage specific behaviours of businesses, consumers, and other agents within the economy, without resorting to formal legal actions such as legislation or laws. The use of this tool/instrument by the CBN is very effective during short term crises such as financial instability, energy shortages, wars, etc. Moral suasion as well entails putting pressure on the banking system and/or other agents of the economy, without the application of strict action in order to ensure compliance with the rules (Dhungana, 2016).

(4) **Selective Credit Control:** This is an instrument which is used to differentiate among the many sectors of the economy into less preferred and preferred sectors. Usually it is designed for the purpose of influencing the direction of credits within the economy in order to make sure that credits go to the sectors that are designed as "preferred". Whenever plans are prepared, credit controls are being integrated into the budget. For instance, in the course of the government's programme to regenerate the agricultural production, which is the most favoured sectors, credits to the sector is at lower interest rate while the least favoured sectors pay the highest rate of interest (Ekpung et al., 2015).

- **Types of Monetary Policy**

According to Nwinee and Torbira (2012) monetary policy can be in two forms, namely; expansionary monetary policy and restrictive monetary policy. Restrictive monetary policy can as well be referred to as contractionary monetary policy. Hence, there are two types of monetary policy and these two types of monetary policy are discussed below:

Expansionary monetary policy: An expansionary monetary policy is one brought into existence for the purpose of increasing the supply of money in the economy in order to achieve some nominated objectives. In the course of implementing this type of monetary policy, the government may decide to reduce the cash reserve ratio or increase the liquidity ratio in order to allow more money in the hands of the banks so as to increase the liquidity in the economy. Government often times uses this type of monetary policy to combat depression in the economy.

Contractionary orrestrictive monetary policy: A contractionary monetary policy is a policy brought into existence for the purpose of decreasing the supply of money in the economy so as to achieve some nominated objectives. In the course of implementing this type of monetary policy, the government may decide to increase the cash reserve ratio or decrease the liquidity ratio in order to reduce the money available to banks so as to reduce the liquidity in the economy. Government often times use this type of monetary policy to combat inflation in the economy.

- **Financial Performance of Deposit Money Banks in Nigeria**

Financial performance refers to the extent to which the financial objectives of an institution has been achieved within a particular time period (Alalade et al., 2020). Mengistu (2021) analyzed bank performance in terms of capacity to generate sustained profitability. He asserts that profitability is the first line of defense for banks (DMBs) against losses that are unexpected, since it strengthens their capital position as well as improves future profitability via investment of retained earnings. For

Pandey (2010), performance is termed to be characterized as the ability of an enterprise to appreciate its investments that are channeled into business activities, which will add to the continuous self-improvement and the achievement of goals. Any institution which makes losses on a persistent basis will eventually deplete its capital base, which as well puts both equity and debt holders at risk. This study employs Return on Assets (ROA) as a proxy for deposit money banks' financial performance. Return on Assets (ROA) is a major indicator which is usually used in the literature to represent the financial performance of banks (Osho and Adelalu, 2020). It reveals the profit which is earned for each Naira of assets invested and most importantly shows the ability and efficiency of management to utilize banks' real and financial investment resources for the generation of profits.

2.2 Empirical Review

Alalade et al. (2020) in their study where they researched on the influence of monetary policy on financial performance of deposit money bank in Nigeria. They employed 35 years timeseries data of 1984 -2018. Monetary policy was proxied by liquidity ratio, cash reserve ratio, loans to deposit ratio and performance of DMBs was proxied by banks' networth. They analyzed the data using both descriptive and inferential statistics. Due to their stationarity test result, OLS and ARDL methods were used. The obtained OLS result shows that in the shortrun there is a significant effect of monetary policy on DMBs performance in Nigeria. Also, the ARDL result reveals that there is no longrun effect of monetary policy on DMBs performance in Nigeria. Osho and Adelalu (2020) examined the effect of monetary policy DMBs financial performance in Nigeria. They adopted Expost facto research design in the examination of how variables of monetary policy affect the financial performance of DMBs in Nigeria which they proxied with return on assets (ROA) for the period of 15 years (2005-2019). Multiple regressions were employed to measure the individual and joint effects of monetary policy variables that are proxied by monetary policy rate, maximum bank lending rate and exchange rate on return on assets (ROA). Their result showed that the explanatory variables related significantly with the dependent variable ROA. As such, monetary policy has a strong impact on the performance DMBs in Nigeria. They concluded by saying that instruments of monetary policy have been very effective for DMBs since they give rise to increased credit supply, higher savings, stimulation of investments which enables DMBs to realize higher profitability levels. Nguyen and Le (2017) investigated impact of monetary policy on the profit of commercial banks in Vietnam by making use of panel data regression. In this study, they collected annual data which ranges from 2007 to 2014 from 20 commercial banks that were doing business in the banking market of Vietnam. Discount rate (DIS), monetary base (MB) and required reserve ratio (RRR) are used to proxy monetary policy. The Profits before tax (PAT) of the selected banks is employed to proxy these commercial banks' performance. The obtained results show that there exists a positive relationship between monetary policies and banks' profits. Okaro and Nwakoby (2016) investigated the influence of liquidity management on the profitability performance of DMBs in Nigeria's banking system. Data were obtained from NDIC and CBN annual publications for a period of 16 years (2000 to 2015). The obtained data were analyzed with multiple regression in E-view 8.0. The result depicted a significant and negative relationship between liquidity ratio and DMBs profitability. Also, the result reveals that there is a significant and positive relationship between cash to deposit ratio and profitability of DMBs. From its findings the study recommends that banks should desist from maintaining excess liquidity as a way of providing for unexpected deposit withdrawals from their customers through the adoption of some other means for meeting such requirements, that can include short time or overnight borrowing. It also states that these DMBs should try to invest their excess liquidity in assets which will yield return that will boast their profitability. Ndugbu and Okere (2015) studied the impact of monetary policy on deposit money banks' performance in Nigerian between 1993-2013. Data used in the study were sourced from the Central Bank of Nigeria (CBN) statistical bulletin, statement of accounts and

annual reports. Ordinary Least Square and co-integration were employed for the evaluation of the actual impact of monetary policy on deposit money banks' performance. The Augmented Dicker Fuller (ADF) unit root test proves that the employed variables are stationary. The co-integration test revealed that a longrun relationship exist among the variables. OLS result revealed that among the monetary policy variables (liquidity ratio, cash reserve ratio, bank deposit rate and bank lending rate) considered within the model, only the bank deposit rate has significant relationship though inverse relationship. It is against this backdrop that the study recommends, that the CBN should employ the deposit rate as one of its tools for regulating the operation of DMBs. Also, there is need to change the monetary policy instruments to show and respond more and easily quickly to the local economic conditions.

Ekpung et al. (2015) examined effect of monetary policy on Nigeria's banking sector performance between 1970 – 2006 (36 years) employing selected indicators. OLS regression was use to analyze the obtained data. Their results revealed that overall; there is a significant effect of monetary policy on deposit liabilities of banks. Whereas, on individualistic basis; Minimum Discount Rate (MDR) and Deposit Rate (DR) have negative influence on deposit liabilities of Nigerian banks, meanwhile Exchange Rate (EXR) have significant and positive influence on deposit liabilities of Nigerian banks. The study concluded by saying that the monetary policy of the government plays a very important role in the determination of deposit liabilities of Nigerian banks. They recommend that the monetary authorities and government should try to create an improved environment for the banking sector in the country to grow by formulating adequate monetary policies which would enhance and guarantee growth as well as development of Nigeria's banking sector. Abata (2014) investigated assets quality of banks and their performance in the Nigerian employing secondary data got from the accounts and annual reports of the six largest banks which are listed on the Nigerian Stock Exchange based on market capitalization within a period of 15 years (i.e. 1999 - 2013). The study employed ratios as the measure of bank performance and asset quality because these have been proven to be verifiable means of gauging the firms' activities level. Data used in the work were analyzed by the use of regression tool and Pearson correlation. It findings reveals that asset quality had a relationship that is statistically significant on bank performance. From its findings the study recommends monetary policies which would encourage minimization of credit risk, revenue diversification. It as well encouraged banks to reduce their liquidity holdings.

Akanbi and Ajagbe (2012) studied monetary policy and commercial banks in Nigeria for the period 1992-1999. They used liquidity ratio, cash ratio and lending rate to proxy monetary policy, whereas the net profit of banks was used as a measure of bank performance. The study reveals that a negative relationship does exist between the lending rate and net profit of commercial banks. It also showed that there is a positive relationship between liquidity ratio and cash ratio with the banks' net profits. Punita and Somaiya (2006) investigated monetary policy effect on profitability of Indian banks between 1995 to 2000. They obtained that lending rate has a positive and significant effect on banks' profitability which means that a reduction in it will the profitability of banks. They also discovered that cash reserve ratio, bank rate and statutory ratio significantly influence profitability of banks negatively.

2.3 Theoretical Framework

A theory is an opinion which serves as an explanation of a phenomenon (Oji and Christian, 2021). It is an established principle which is developed in order to explain some economic phenomena. The following theory is used as a base for this study:

The Quantity Theory of Money

A most widely accepted approach to the economics of money was the quantity theory of money which was formulated by Nicolaus Copernicus in 1517 (Osho and Adelalu, 2020). This theory was actually used as an aspect of a wider approach to macro and micro issues which is referred to as classical economics from the works of Irving fisher. He laid the foundation of the quantity theory of money through his equation of exchange (Ibeabuchi, 2007). It is actually a theory about the major cause of changes in the value of money. This value of money is simply the purchasing power of money. Actually, the theory states that changes in money's value is chiefly determined by changes in the quantity of money that is in circulation. Whenever the money in circulation within an economy becomes too much, there will be a reduction in its purchasing power or value, consequently the average price of commodities will rise. On the other hand, anytime there is a reduction in the quantity of money that is in circulation in the economy there will be an increase in its purchasing power or value which would result in a fall in the average prices of commodities. Summarily, this theory opines that the stock of money (M) in an economy is the chief determinant of price level (P) (Okereke et al., 2009). As already stated, this study is largely hinged on this theorysince the monetary policy of the CBN is made to actually achieve some set objectives within the economy with the aid of money's supply.

3.0 Methodology

This part of the study tells how it was carried out. It shows how answers to specific aims will be provided (Baridam, 2001). Hence, this aspect of the study tells how the study is done in order to proffer answers to its objectives. It is divided into the following:

3.1 Description of Variables and Data Employed

The independent variable of this study is monetary policy which is proxied with liquidity ratio (LTR), cash reserve ratio (CRR), prime lending rate (PLR) and exchange rate (EXR). The dependent variable of this study is the deposit money banks (DMBs) performance proxied with their return on assets (ROA). The study makes use of secondary annual data from 1991 - 2020 (30 years) of liquidity ratio (LTR), cash reserve ratio (CRR), prime lending rate (PLR), exchange rate (EXR) and ratio of return on assets (ROA) of deposit money banks (DMBs) to GDP. Data used for this study were sourced from Central Bank of Nigeria (CBN) statistical bulletin.

3.2 Model Specifications

This study's model is specified in different forms and equations as stated below:

The functional form of the model is:

ROA/GDP = f(LQR, CRR, PLR, EXR).....…….…….. (1)

Where

ROA/GDP = Ratio of Return on Assets to GDP

LQR = Liquidity Ratio

CRR = Cash Reserve Ratio

PLR = Prime Lending Rate

EXR = Exchange Rate

The mathematical form of the model is:

$ROA/GDP_t = \alpha_{0t} + \alpha_1 LQR_t + \alpha_2 CRR_t + \alpha_3 PLR_t + \alpha_4 EXR_t$ …… (2)

Where

ROA/GDP = Ratio of Return on Assets to GDP

LQR = Liquidity Ratio

CRR = Cash Reserve Ratio
PLR = Prime Lending Rate
EXR = Exchange Rate
α_0 = Intercept
$\alpha_1, \alpha_2, \alpha_3, \alpha_4$ = Estimation parameters for the independent variables

The econometric form of the model is:

$ROA/GDP_t = \alpha_{0t} + \alpha_1 LQR_t + \alpha_2 CRR_t + \alpha_3 PLR_t + \alpha_4 EXR_t + \mu_t$ ..... (3)

Where
ROA/GDP = Ratio of Return on Assets to GDP
LQR = Liquidity Ratio
CRR = Cash Reserve Ratio
PLR = Prime Lending Rate
EXR = Exchange Rate
α_0 = Intercept
$\alpha_1, \alpha_2, \alpha_3, \alpha_4$ = Estimation parameters for the independent variables
μ_t = Error term

3.3 Apriori expectations

Based on theory, it is expected that the instruments of monetary policy affect deposit money banks' (DMBs) return on assets (ROA) in different ways. An increase in liquidity ratio (LQR) avails DMBs with increased amount of money for more of their business activities which could result in an increase in their return on assets (ROA). Hence, $\alpha_1 > 0$. Also, an increase in cash reserve ratio (CRR) would mean a reduction of the money available for DMBs' business activities and this could reduce their return on assets (ROA). As such, $\alpha_2 < 0$. And an increase in prime lending rate (PLR) increases the chance for DMBs returns on assets (ROA) to increase. Hence, $\alpha_3 > 0$. Lastly, when exchange rate (EXR) increases DMBs realize more income and this increases their return on assets (ROA). Thus, $\alpha_4 > 0$. From the foregoing; $\alpha_1 > 0$, $\alpha_2 < 0$, $\alpha_3 > 0$, $\alpha_4 > 0$.

3.4 Specification of Analytical Tools Used for Test

This study's major objective is to empirically ascertain the effect of monetary policy on deposit money banks. The tools listed under are used for analytical purposes in the study.

3.4.1 Stationarity Tests:

The Stationarity of time series data used in this study need to be verified by the employment of unit root test in order to validate their use and avoid estimates that are spurious. According to Brooks (2009) the Augmented Dickey Fuller (ADF) test is relevant, for this study. The decision rule is to reject the null hypothesis if ADF test statistic on absolute basis, is greater than all associated Mackinon's Critical values at 1%, 5% and 10% levels respectively.

3.4.2 Multiple Regression Test (Ordinary Least Square)

The multiple regression analysis captures the shortrun dynamics of a predictive regression equation. In line with this, for the null hypothesis to be of no significance to be rejected the significance of the t-statistics of any of the proxies of the independent or explanatory variable is expected not to be less than 0.05.

i. Probability

Probability is also known as the p-value or the marginal significance level (Oji and Udokang, 2021). With a P-value, you can tell at sight whether or not one is to accept or reject the hypothesis that the true coefficient is zero against a two-sided alternative that it differs from zero. A probability lower than 0.05 is taken as strong evidence of rejection of that hypothesis.

ii. Summary Statistics

The Coefficient of Multiple Determination

R- Squared (R^2): This is a measure in statistics which represents the part or proportion of the variance of a dependent variable which is explained by an independent or explanatory variable or variables in a regression model. It shows the extent to which the variance in a variable is caused by the variance in another variable. Here the R^2 is used purely to measure the goodness of fit, that is a measure of the model's explanatory power.

Adjusted R-Squared

The adjusted R^2, which is commonly denoted as $\bar{R}^2$, faults the R^2 for the addition of regressors which do not contribute to the explanatory power of the model. The $\bar{R}^2$ is never larger than the R^2. It can decrease as you add regressors and may be negative for poorly fitting models. This study shall make use of the adjusted R^2 ($\bar{R}^2$) as its coefficient of determination since it only takes into cognizance those regressors that actually contribute to the explanatory power of the model.

3.4.3 Johansen Co-integration test

Johansen Co-integration test aims at ascertaining the significance of longrun equilibrium relationship that is in existence among the variables selected for use in the study (Brooks, 2009). The implied decision rule is that the magnitude of Max-Eigen statistics must be more than the associated critical value at 0.05 level.

3.4.4 Granger Causality Test

Brooks (2009) states that the PairWise-Granger Causality test attempts to evaluate the extent to which variations in a given set of explanatory variables tend to support or promote changes in the dependent variable.

4.1 Presentation of Results

A very important task for this study's researcher is the logical and clear presentation of results obtained from the analytical processes in order to simplify comprehension of the study's findings. Actually, results should be presented in a manner by which the aims and objectives of the study is addressed and to satisfy those who would use it in the future. It is against this backdrop that we present the following results in this part of the work.

4.2 Presentation of Stationarity Test result

Table 4.2: Summary Compilation of Stationarity Test of Employed Variables at Level (Order Zero).

Variable	ADF Test Statistics	Critical Value 5%			Order of Integration Prob.
		1%	5%	10%	
ROA/GDP	-6.712111	-3.670170	-2.963972	-2.621007	I(0)0.0000
LQR	-5.454408	-3.679322	-2.967767	-2.622989	I(0)0.0001
CRR	-4.942280	-3.670170	-2.963972	-2.621007	I(0)0.0004
PLR	-3.812928	-3.661661	-2.960411	-2.619160	I(0)0.0069
EXR	-4.588112	-3.670170	-2.963972	-2.621007	I(0)0.0010

Source: Extract from Eviews 8.0 output

4.2.1 Analysis of Stationarity Test result

The result above shows that the data are integrated at order zero (0) which means that the data is stationary at levels as such suggests indulgence in multiple regression (OLS) test.

4.3 Presentation of Multiple Regression (OLS) Results:

In order to examine the short-run relationship between the dependent variable and explanatory (independent) variables and the percentage of variation that is accounted for by changes in the explanatory (independent) variable in the short run, this study employed multiple regression test. The result is shown in the table below.

Table 4:3 Results of Multiple Regression (OLS) test:

Dependent Variable: ROA/GDP
Method: Least Squares
Date: 01/29/23 Time: 16:11
Sample: 1990 2021
Included observations: 32

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	16.42619	13.80258	1.190081	0.2444
CRR	0.364781	0.384031	0.949874	0.3506
EXR	-0.066627	0.030405	-2.191288	0.0372
PLR	0.000404	0.507387	0.000796	0.9994
LQR	-0.158037	0.061918	-2.194030	0.0377

R-squared	0.234824	Mean dependent var	4.607819
Adjusted R-squared	0.121464	S.D. dependent var	8.814911
S.E. of regression	8.262237	Akaike info criterion	7.203869
Sum squared resid	1843.143	Schwarz criterion	7.432890
Log likelihood	-110.2619	Hannan-Quinn criter.	7.279783
F-statistic	2.071497	Durbin-Watson stat	2.075456
Prob(F-statistic)	0.012442		

Source: Extract from E-views 8.0 output

4.3.1 Analysis of Multiple Regression Results

From the multiple regression (OLS) result, it is glaring that the coefficient of determination (R^2) is 0.234824. This means that jointly, changes in the proxies of the independent variable (Monetary policy) accounts for 23.48% variations in the dependent variable (Performance of DMBs proxied with their ROA). Therefore, 76.52%changes in the dependent variable (Performance of DMBs proxied with their ROA) are accounted for by other variables not captured in this study. with the ratio of banks' ROA/GDP.

The result also shows that Cash Reserve Ratio (CRR) had a positive and insignificant relationship with the ratio of deposit money banks' (DMBs) ROA/GDP to the extent that 1% increase in Cash Reserve Ratio (CRR) will result in a more than proportionate (36%) increase in the ratio of deposit money banks' (DMBs) ROA/GDP. The result showed that Exchange Rate (EXR) had a negative and significant relationship withthe ratio of deposit money banks' (DMBs) ROA/GDPso that 1% increase in Exchange Rate (EXR) will give rise to a less than proportionate(6.6%) decrease in the ratio of deposit money banks' (DMBs) ROA/GDP.

In furtherance, our result showed that Prime Lending Rate (PLR) had a positive and insignificant relationship with the ratio of deposit money banks' (DMBs) ROA/GDP to the extent that 1% increase in Prime Lending Rate (PLR) will cause a less than proportionatedecrease in the ratio of deposit money banks' (DMBs) ROA/GDP. Lastly,ourresult revealed that Liquidity Ratio (LQR) has a negative and significant relationship with the ratio of deposit money banks' (DMBs) ROA/GDP as such that 1% increase in Liquidity Ratio (LQR) will give rise to more than proportionate (16%) decreasein the ratio of deposit money banks' (DMBs) ROA/GDP.The Durbin Watson Statistics shows that there is no autocorrelation among the study's choice variables, while the Probability of F-statistic tells that the study's model is adequate.

4.4 Granger Causality Test Result

Pairwise Granger Causality Tests
Date: 01/29/23 Time: 16:45
Sample: 1990 2021
Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
CRR does not Granger Cause ROA/GDP	30	0.40639	0.6704
ROA/GDP does not Granger Cause CRR		0.35665	0.7035
EXR does not Granger Cause ROA/GDP	30	0.60382	0.5545
ROA/GDP does not Granger Cause EXR		0.45419	0.6401
LQR does not Granger Cause ROA/GDP	30	0.42998	0.6552
ROA/GDP does not Granger Cause LQR		0.88789	0.4241
PLR does not Granger Cause ROA/GDP	30	11.1389	0.0003
ROA/GDP does not Granger Cause PLR		0.29995	0.7435

Source: Extract from E-views 8.0 output

This result shows that there is no bi-directional causality existing between the paired variables of the study. However, there is uni-directional causality flowing from only prime lending rate (PLR) tothe ratio of deposit money banks' (DMBs) ROA/GDP, which means that prime lending rates promotes or supports Return on Asset of deposit money banks (DMBs).

5.0 Discussion, Conclusion and Recommendations

5.1 Discussion and Conclusion

Data used for this study were stationary at levels as such multiple regression test was engaged in. The proxies used to represent the study's independent variables (Cash Reserve Ratio, Exchange Rate,

Prime Lending Rate and Liquidity Ratio) showed mixed outcomes with the dependent variable (DMBs performance). While CRR and PLR have positive and insignificant relationship with ROA, EXR has a negative and significant relationship with ROA and LQR has a negative and insignificant relationship with ROA.

The findings as well showed exchange rate have a significant relationship with DMBs return on assets (ROA) which is in consonance with the findings of Ekpung et al. (2015). On the whole, it suffices to conclude that within the study period (1990 - 2021) monetary policy does not have a significant effect on deposit money banks' (DMBs) performance. This could be as a result of the perceived stringent policies put forward by the monetary authorities over the years, thereby putting these banks in positions that are actually stifling. Lastly, we conclude that prime lending rates promotes or supports Return on Asset of deposit money banks (DMBs).

5.2 Recommendations

i) The government through the CBN should reduce the stipulated cash reserve ratio (CRR) as these would help to boost credit expansion, money supply and invariably profitability and returns of deposit money banks (DMBs) in Nigeria.

ii) Deposit money banks (DMBs) should mobilize more deposits through their engagement effective marketing activities so as to enhance their lending capability.They should formulate comprehensive and realistic financial plans to boost their financial performance.

iii) Deposit money banks (DMBs) should make their prime lending rates (PLR) to be attractive to their prime customers by reducing it so as to allow them take more credit facilities. This would result to an increase in their profitability and returns.

iv) The government should as well consistently adopt monetary policies that will help Nigerian banks improve on their profitability and also there is need to strengthen monetary policy rate through effective and efficient regulation and supervisory framework.

v) Managements of deposit money banks (DMBs) should make efforts to create the conditions for an efficient banking system devoid of information asymmetry in order to adapt to changing macroeconomic variables of interest rates.

vi) Finally, there is need to modify the monetary policy instruments to reflect and respond more rapidly and easily to local economic conditions.

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