Research Article

Impact of Monetary Policy Instruments on Profitability of Selected Deposit Money Banks in Nigeria

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Abstract: Deposit money banks (DMBs) are institutions that act as financial intermediaries in the economy. They mobilized deposits from where there is surplus and give this out as loans to areas where there is shortage. DMBs have the potential to increase the money supply in the economy through fund transmission. Whereas monetary policy are designed to stabilize the economy, position it for growth and development. Central Bank of Nigeria been the monetary authority in Nigeria make rules to determine the ability of DMBs to increase money supply through creation of credit which in turn affect their performance.

The main objective of this study is to examine the effect of monetary policy on financial performance of Deposit Money Banks in Nigeria. The population of the study comprise all Deposit Money Banks (DMBs-see appendix) where the sample seize were taken. Data employed are secondary data extracted from annual publication of banks and statistical bulletin of the Central Bank of Nigeria (CBN).

It was analysed with regression analyses, it was discovered that inflation and interest rate influence performing of DMBs. Based on the findings, it is recommended that monetary authority (the Central Bank of Nigeria-CBN) should moderate the deposit rate as a tool for regulating deposit money banks operation, Monetary policy should be such that is flexible and peculiar to environmental factors around each MDBs.

Keywords: Bank Credit, Credit risk, Bank specific factors and Loan and advances.

INTRODUCTION

Government need to intervene in the working of economic variables in other to achieve macroeconomic objectives. This summation dated back to the 1930s as a result of work of Keynes (1936) titled "General Theory of Employment, Money and Interest" which is a results of great depression of 1936 in Great Britain. Likewise, other Scholars and economists (Friedman, 1956; 1963; 1968) have contributed to the need for government intervention in the management of a country's economy in other to achieve general equilibrium in the economy. Monetary policy is one of the intervention measures which have the objective of promotion of economic growth and development, full employment, price stability (low level of inflation), healthy balance of payment, exchange rate stability and general economic stability. These objectives was expanded by Mishra and Pradhan (2008) to include smoothing of the business cycle, prevention of financial crisis and long-term stabilization of interest rates and real exchange rate. Monetary policy measures are usually administered on behalf of the government by the monetary authority, in Nigeria, it is the Central Bank of Nigeria. Abata, Kehinde. and Bolarinwa, (2017) opined that monetary policy is the tool being used by the monetary authority (Central Bank) to control of money supply so as to achieve desired macroeconomic objectives. Therefore monetary policy tools are instruments at the disposal of monetary authority, which help to achieve macroeconomic stability. But Anyawu (2013) opined that monetary policy involves a discretionary effort by the monetary authority (Central Bank) to control the money supply and credit conditions for the purpose of achieving macroeconomic objectives.

In Nigeria, monetary policy as administered by the Central Bank of Nigeria (CBN) make use of policy instruments such as Open Market Operations (OMO), cash reserve requirements, liquidity ratio, monetary policy rate (MPR) and moral suasion to achieve the objectives of monetary policy. Deposit money banks in Nigeria are one of the institutions which make up the financial system of the country expected to adhere to these monetary policy directives as determined by CBN from time to time. Deposit money banks (DMBs) are institutions that act as financial intermediaries in the economy. They mobilized deposits from where there is surplus and give this out as loans to areas where there is a shortage or needed regions. Consequently, DMBs have the potential to increase the money supply in the economy through fund transmission. Usman (2019) asserted that a major regulatory control of the monetary authority affecting DMBs' operations in Nigeria is the restriction on the rates of interest they are allowed to charge for their lending and the rates of interest they are allowed to pay on customers' deposits.

Monetary policy and ability of banks to attract deposits and give out loans are linked together. Olokoyo (2011) posited that the volume of loans DMBs give out

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depends on many factors such as their liquidity ratio, interest rate, volume of customers' deposit, their investments (domestic and foreign), the customer's prestige and public recognition. While Ajie and Nenbe (2018) contended that reserves of the DMBs are influenced by the Central Bank through its monetary policy instruments. CBN affects the operations of DMBs through monetary policy, by controls the short-term interest rates and liquidity of DMBs, thus, CBN determines the ability of DMBs to increase money supply through creation of credit. This in turn determines the total loans that can be given out and the extent DMBs can attract deposits. When interest rate is high, although this will attract money customers to bring deposit but on the other hand, it will discourage investments because of high cost of funds, thus reducing the amount of loans DMBs can give out. This is likely to reduce the interest income of DMBs as they are required to pay high interest rate on deposits but have a reduced loan portfolio from which they can earn interest income.

Statement of Problem

The economic objectives of any country is to achieve growth in the economy which transcend into improvement in the standard of living of the people. To this end, efforts are made to maintain effectiveness of its monetary policy, which is the deliberate action of the monetary authority to control the money supply and general credit available in the economic system. It is usually implemented through the banking system in order to influence economic activities.

When CBN increases DMBs' liquidity ratio, the ratio of liquid assets of DMBs to their total assets, it will reduce the cash available to DMBs from which they can give out loans and earn interest income. The same goes for cash reserve requirements. If this is increased by CBN, it will reduce the cash available to DMBs from which they can give out loans and earn interest income. However, if liquidity ratio and cash reserve requirements are reduced, these will increase cash available for DMBs from which they can give out loans and earn interest income.

Several researchers have studied the relationship between monetary policy and banks' performance, (Punita and Somaiya, 2006; Van den Heuvel, 2006; Abdurrahman, 2010; Ajayi & Atanda, 2012; Akanbi & Ajagbe, 2012; Enyioko, 2012; Olweny and Chiluwe, 2012; Ekpung *et al.*, 2015; Ndugbu and Okere, 2015; Udeh, 2015; Onodugo *et al.*, 2016; Ndubuaku *et al.*, 2017), Yonnus and Aklita, 2019). However, none of these researchers considered the trend and pattern of monetary policies and financial performance of deposit money banks in Nigeria while looking, at the same time, the effect of monetary policy on the financial performance of deposit money banks.

Research Questions

- What is the relationship between monetary policy and deposit money bank financial performance (Return on Equity-ROE) in Nigeria?
- What is the effect of monetary policy on deposit money banks' financial performance (Return on Asset -ROA) in Nigeria?

Objective of Study

The main objective of this study is to examine the effect of monetary policy on financial performance of Deposit Money Bank in Nigeria. Specifically the research will determine;

- The relationship between monetary policy and deposit money bank financial performance (Return on Equity-ROE) in Nigeria.
- Effect of Monetary policy on deposit money banks' financial performance (Return on Asset -ROA) in Nigeria.

Research Hypotheses

Based on the research objectives, the hypotheses to be tested include:

Hypothesis I

H₀: There is no significant relationship between monetary policy and deposit money bank financial performance (Return on Equity-ROE) in Nigeria.

Hₐ: There is relationship between monetary policy and deposit money bank financial performance (Return on Equity-ROE) in Nigeria.

Hypothesis II

H₀: Monetary policy does not have significant relationship with deposit money banks' financial performance (Return on Asset -ROA) in Nigeria.

Hₐ: Monetary policy have relationship with deposit money banks' financial performance (Return on Asset -ROA) in Nigeria.

Scope and Delimitation of the Study

This work is adjusted to fit its objectives of examining the role of monetary policy on financial performance of deposit money bank in Nigeria. The scope of the study will cover the period between 1981-2020 that involve monetary regulations and financial performance of at least 50 percent of DMBs license and operating in Nigeria.

These banks were selected based on their performance and are expected to have more experience on credit creation activities. Explicitly, the study shall focus on macroeconomic and bank specific variables as determinants of banking sector's financial performance in Nigeria. Other possible factors that may influence the financial performance of DMBs such as financial literacy as well as culture or institutional factors shall not be included. These factors are beyond the scope of this study. Thus, this study shall be encompasses both bank specific and monetary policy variables of deposit

money banks in Nigeria between the periods 1981 to 2020.

Justification of the Study

The study focuses on the impact of monetary policy on financial performance of Deposit Money Bank in Nigeria. In other words, the significance of the study will involve revealing the impact of effectiveness of monetary policy on the well-being of the DMBs in Nigeria.

The study is pervasively timely, especially since the Nigerian government is working towards achieving an optimal economic diversification which is essentially hinged on sound bank credit management. Therefore, findings of this study which details with the determinants of nonperforming and performing loan of commercial bank in Nigeria shall be beneficial to different stakeholders such as the banking sector (deposit money banks, micro finance banks and Nigerian central bank), other monetary authority and researchers. The finding of this study shall be used as a directive input in developing regulatory standards regarding the lending policies of deposit money banks of Nigeria.

This study shall sensitize the deposit money bank management to give due emphasis to the management of these identified variables and provide them with understanding of activities that can enhance their loan performance.

Organization of the Project

This research is organized into four sections, section I starts with background of the study, statement of the problem, objective of the study, significance of the study, scope and limitation of the study. Second II focuses on both theoretical and empirical review of related literature, Section III deals with the research methodology and presentation of results while section IV centers on discussions and summary of findings, conclusion and recommendation of the study,

LITERATURE REVIEW

Introduction

The focus of any economic development programme is always on the economic welfare of the citizenry of a country. In broad perspective, the core values of economic development are life sustenance, self-esteem and freedom from servitude. These are basic issues that any economic programme in the developing countries would seek to address all the time. In developing countries like Nigeria, development problems are so monumental and addressing then could lead to conflict in policy applications. Ndekwu (2001), succinctly summarized the developmental problems of African countries, which aptly describe the Nigerian situation as:

- rapid population growth reduction
- poverty reduction or eradication
- diseases and ignorance eradication
- low output and productivity elimination
- enhancing literacy and education
- external debt diminution
- Crushing the scourge of under-development.

These are issues that engage the attention of our policy makers. However, some of these issues are so conflicting that addressing one may imply aggravating another. For instance, how do we simultaneously address the issues of inflation and unemployment? More often than not, they border on addressing stagflation which direct monetary or fiscal policy may not have answers for. Yet monetary and fiscal policies are useless as long as they fail to address these fundamental development issues.

Conceptual Review

Monetary policy is the process by which the government, central bank, or monetary authority of a country controls (i) the supply of money, (ii) availability of money, and (iii) cost of money or rate of interest to attain a set of objectives oriented towards the growth and stability of the economy. Monetary theory provides insight into how to craft optimal monetary policy. Monetary policy rests on the relationship between the rates of interest in an economy, that is the price at which money can be borrowed, and the total supply of money. Monetary policy uses a variety of tools to control one or both of these, to influence outcomes like economic growth, inflation, exchange rates with other currencies and unemployment. Where currency is under a monopoly of issuance, or where there is a regulated system of issuing currency through banks which are tied to a central bank, the monetary authority has the ability to alter the money supply and thus influence the interest rate (to achieve policy goals).

Amaghionyodiwe (2019) identified objectives of monetary policy of the 1970's 1980's and 1990's were the maintenance of relative price stability and a healthy balance of payment. The use of indirect monetary control was formally announced in early 1991 and as the point of the change over from direct control, the open market operation (OMO) was introduce in June 30th 1993, as the main instrument of monetary policy, which is complimented by existing reserve requirement and discount rate. Monetary policy rests on the relationship between the rates of interest in an economy, that is the price at which money can be borrowed, and the total supply of money. Monetary policy uses a variety of tools to control one or both of these, to influence outcomes like economic growth, inflation, exchange rates with other currencies and unemployment. Where currency is under a monopoly of issuance, or where there is a regulated system of issuing currency through banks which are tied to a central bank, the monetary authority has the ability to alter the money supply and thus influence the interest rate (to achieve policy goals).

A policy is referred to as contrationary if it reduces the size of the money supply or increases it only slowly, or if it raises the interest rate. An expansionary policy increases the size of the money supply more rapidly, or decreases the interest rate. Furthermore, monetary policies are described as follows: accommodative, if the interest rate set by the central monetary authority is intended to create economic growth; neutral, if it is intended neither to create growth nor combat inflation; or tight if intended to reduce inflation. Whereas two fundamental propositions about the effect of the quantity of money on the economy predate the emergence of monetary economics as a recognized discipline of study. The first is that increases in the quantity of money that is not associated with corresponding increases in real output will eventually lead to inflation, and the second is that a shortage of money can depress the volume of economic activity (Chuku 2009).The former have the potential for stimulating the economy when it is sluggish while the latter cools it down when it overheats.

OBJECTIVES OF MONETARY POLICY

Monetary policy is an important tool which policy makers used in influencing economic development in any country. Onwe (2012) identified basic goals of monetary policies as include:

- **High employment:** This is an important goal of monetary policy especially in developing country where provision for human welfare is none existed. It is to be noted that when unemployment is high, the economy record an idle resources which include; human, natural and capital resources. However Oguntoyinbo (2010) opined that the goal of high employment does not seek for an unemployment level of zero, but rather, a level above zero that is consistent with full employment at which the demand for labour equals the supply of labour. This level of unemployment is referred to as the natural rate of unemployment in economic terms.
- **Economic growth:** This goal is closely related to the high employment goal because businesses are more likely to invest in capital equipment to increase productivity and economic growth when unemployment is low. Conversely, if unemployment is high and factories and other businesses are idle, it does not pay for a firm to invest in additional plants and equipment.
- **Stability of financial markets:** One of the major functions of the monetary authorities is to promote a stable financial system. One way the Central Bank of Nigeria can promote stability in the financial system is by helping prevent financial panics, through its role as the lender of last resort.
The stability of financial markets can also be promoted by interest rate stability, since fluctuations in interest rates create uncertainty for financial institutions. An increase in interest rates gives rise to capital losses on long-term bonds and mortgages, losses that cause the failure of financial institutions holding them.
- **Stability in foreign exchange markets:** With increasing importance of the global market, the value of a country's currency relative to other currencies has become a major consideration for the monetary authorities.

A fall in the value of the naira relative to other currencies, for example, will stimulate inflation in Nigeria. Preventing large changes in the value of the naira makes it easier for firms and individuals purchasing or selling goods abroad to plan ahead. Ajisafe and Folorunso (2002) analyzed monetary policies objectives in Nigeria as:

- Stimulation of financial savings and capital formation
- Price stability and control of inflation
- Maintenance of confidence ii the Nigerian currency through stabilizing measures on domestic wages and prices
- Effective arrangements for supplementing current government revenues
- The implementation of monetary and fiscal policies in Nigeria is replete with contradictions and inconsistencies.
- This is not uncommon in developing economics where there are myriad of economic problems calling for attention.

But Ajisafe and Folorunso (2020) agreed and further identified fundamental objectives of monetary policy to include price stability, maintenance of balance of payments equilibrium, and promotion of employment, output growth and sustainable development. These objectives are necessary for the attainment of internal and external balance of value of money and promotion of long run economic growth. Ajisafe and Folorunso (2020) noted that the objectives of monetary policy include increase in Gross Domestic Product growth rate, reduction in the rates of inflation and unemployment, improvement in the balance of payments, accumulation of financial savings and external reserves as well as stability in Naira exchange rate, the policy as well as instruments applied to attain these objectives, until recently the tools have been far from adequate. Now economic development is one of the major objectives of many countries in the world and economic growth is fundamental to economic development.

However, Wanaset (2019) shows that high inflation (and its associated high variability) distorts the decisions of private agents concerning investment, saving, production and ultimately slower the economic performance. But Fasanya, Onakoya and Agboluaje (2013) asserted that since the establishment of the Central Bank of Nigeria (CBN) in 1959 has continued to play the traditional role expected of a central bank, which is the regulation of the stock of money in such a way as

to promote the social welfare. This role has facilitated the emergence of active money market where treasury bills, a financial instrument used for open market operations and raising debt for government has grown in volume and value becoming a prominent earning asset for investors and source of balancing liquidity in the market. This role is anchored on the use of monetary policy that is usually targeted towards the achievement of full-employment equilibrium, rapid economic growth, price stability, and external balance. Nwosa, Agbeluyi and Saibu (2011) established that there have been various regimes of monetary policy in Nigeria some times, monetary policy is tight and at other times it is loose mostly used to stabilize prices and enhance the real sector performance such as the manufacturing sector.

Tools of Monetary Policy

The term monetary policy refers to the combination of measures or actions designed to regulate the value, supply and the cost of money in an economy, in consonance with the expected level of economic activity. Macroeconomists have established the theoretical relationship between real output and monetary policy measures. According to the Keynesians school of thought, a discretionary change in money supply permanently influences real output by lowering the rate of interest and through the marginal efficiency of capital, stimulate investment and output growth (Athukorala, 2019). In contrast to Keynesian policy prescription, McKinnon (1973) and Shaw (1973) in there hypothesis of finance led growth advocated that market force induced higher interest rate, would enhance more investment by channeling saving to productive investment and stimulate real output growth such as the manufacturing sector.

Monetary policy is applied in order to limit the money supply growth to a level that is consistent with the absorptive capacity of the economy (Oguntoyinbo, 2010). Its main goals are to maintain low rates of inflation and suitable levels of economic activity through adequate real interest rates.

The institutional framework for the execution of monetary policy is the Central Bank of Nigeria (CBN) a id the financial institutions, especially the commercial banks that have capacity for the instrumentality of money creation.

Taiwo (2003) opined that there are two major control mechanisms of monetary policy used by Central Banks at any point in time and this control mechanism are usually referred to as tools/instruments of monetary policy and they have effects on the proximate targets. He further added that it can be direct or indirect. The direct instruments include aggregate credit ceilings, deposit ceiling, exchange control, restriction on the placement of public deposit, special deposits and stabilisation securities while indirect instruments include Open Market Operation (OMO), cash reserve requirement, liquidity ratio, minimum discount rate and selective credit policies.

Kareem (2010) concluded that monetary policy has vital roles in the short-run that is, it is used for counter-cyclical output stabilisation, while in the long run; it is used to achieve the macro-economic goals of full employment, price stability, rapid economic growth and balance of payments equilibrium. He says monetary policy is executive traditionally, through the following techniques:

- Discount Window Operations
- Reserve Requirements
- Liquidity Ratios
- Selective Credit Controls
- Moral Suasion

But Tomori (2011) posited that the primary tool of monetary policy is open market operations that entail managing the quantity of money in circulation through the buying and selling of various financial instruments, such as treasury bills, company bonds, or foreign currencies. Usually, the short term goal of open market operations is to achieve a specific short term interest rate target. In other instances, monetary policy might instead entail the targeting of a specific exchange rate relative to some foreign currency or else relative to gold.

The other primary means of conducting monetary policy include: (i) Discount window lending (lender of last resort); (ii) Fractional deposit lending (changes in the reserve requirement); (iii) Moral suasion (cajoling certain market players to achieve specified outcomes).Therefore, monetary decisions today take into account a wider range of factors, such as:

- short term interest rates;
- long term interest rates;
- velocity of money through the economy;
- exchange rates;
- credit quality;
- bonds and equities (corporate ownership and debt);
- government versus private sector spending/savings;
- international capital flows of money on large scales;
- Financial derivatives such as options, swaps, futures contracts, etc.

The Monetary System and Policy in Nigeria

Macro-economic policies in Nigeria comprise monetary, fiscal, exchange rate, and incomes policy. Macro-economic policy refers to government actions aimed at achieving some desired economic objectives through the manipulation of a set of instrumental variables, which can be manipulated by government to achieve its economic objectives.

For most economies like Nigeria, the fundamental objectives of monetary policy include price stability, maintenance of balance of payments equilibrium, and promotion of employment, output

growth and sustainable development. These objectives are necessary for the attainment of internal and external balance of value of money and promotion of long run economic growth. Ajisafe & Folorunso (2002) noted that the objectives of monetary policy include increase in Gross Domestic Product growth rate, reduction in the rates of inflation and unemployment, improvement in the balance of payments, accumulation of financial savings and external reserves as well as stability in Naira exchange rate, the policy as well as instruments applied to attain these objectives, however, have until recently been far from adequate. Economic development is one of the major objectives of many countries in the world and economic growth is fundamental to economic development.
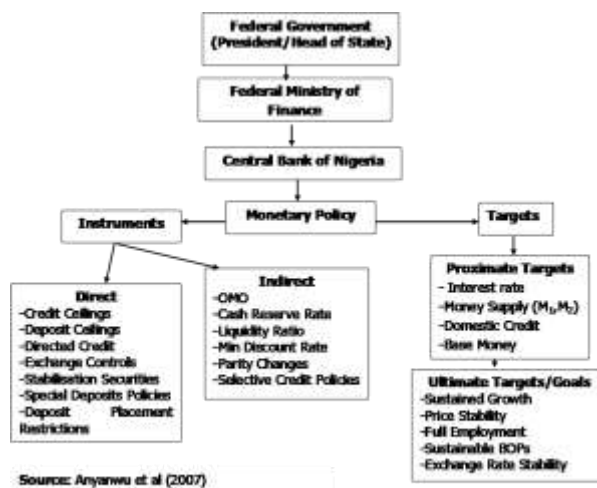
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This role is anchored on the use of monetary policy that is usually targeted towards the achievement of full-employment equilibrium, rapid economic growth, price stability, and external balance. Nwosa et al. (2011) established that there have been various regimes of monetary policy in Nigeria some times, monetary policy is tight and at other times it is loose mostly used to stabilize prices and enhance the real sector performance such as the manufacturing sector.

The Legal Basis of Monetary Policy in Nigeria

The Central Bank of Nigeria (CBN) is vested with the authority to formulate and implement monetary policies. This authority is as outlined in the Central Bank Act of 1958, the CBN Decree No. 24 of 1991, and the Banks and other Financial Institutions Decree (BOFID) No. 25 of 1991. These laws mandated the Central Bank of Nigeria to promote monetary stability and a sound financial system in Nigeria, under the overall guidance of the Federal Government. The CBN is required to make proposals to the President through the Ministry of Finance, who is vested with the power to accept or amend such proposals. The CBN is obliged to implement the policy as approved by the President through the Ministry of Finance. The legal process is as summarised in figure below;

Framework for monetary policy in Nigeria

Sources: Anyanwu et al (2007)

RESEARCH METHODOLOGY
Research Design

The study shall follow a linear specification making use theories and empirical studies that established evidence of relationship between variables. Apart from the impact analysis component of this study, the degree of responsiveness of instability to changes in these instruments shall be measured (Gujarati, 2004).

This study is purely time series study therefore the population of the study covers the entire financial sector which includes all Deposit Money Banks (DMBs).

From this population, the sample size of the study is drawn randomly and limited to the Money Deposit Banks in Nigeria.

The data employed in this study are typically secondary or already published data, therefore data used are collected from annual publication of various banks

and Statistical Bulletin of the Central Bank of Nigeria (CBN) using their websites.

Model Specification

The dimension and the distinction of the model relevant to the study are adopted from the studies of Donia (2011); Yu & Gan (2010); Benyah (2010); Seetanah et al., (2009); Ali& Iva (2013). Though some of these studies used static OLS equation but my modification follows a standard ARDL model which is quoted in four models:

Following the research objective 1, the functional form of the variable are hereby developed as follow;

Return on Equity (ROE) =f(int, exc, inf)………………………………………..3.1

Roe=f(int, exc, inf)…,,,,,,,,,,,,,,,,,,,,,,,,,,,,,…………………………………

…..……..3.1

Where;

Roe = Return on Equity

exc =Exchange rate (Average Annual exchange of Naira to US Dollar)

int = Interest rate

inf = Inflation Rate

And research objective 2, the functional form of the variable are hereby developed as follow;

Return on Asset (ROA) =f(int, exc, inf)………………………………………..3.1

Roa=f(int, exc, inf)…,,,,,,,,,,,,,,,,,,,,,,,,,,,,,…………………………………

…..……..3.1

Where;

Roa = Return on Assets

exc =Exchange rate (Average Annual exchange of Naira to US Dollar)

int = Interest rate

inf = Inflation Rate

For empirical computation, equations 3.1 to 3.4 is transform to;

Model I:

$$Roe_t = \beta_0 + \beta_1 intr_t + \beta_2 exc_t + \beta_3 inf_t + \mu_t$$
…………………………………3.4

Model II:

$$Roa_t = \beta_0 + \beta_1 intr_t + \beta_2 exc_t + \beta_3 inf_t + \mu_t$$
…………………………………3.5

Analytical Variables

- **Return On Equity (ROE):** is a measure of financial performance calculated by dividing net income by shareholders' equity. Because shareholders' equity is equal to a company's assets minus its debt, ROE is considered the return on net assets. ROE is considered a gauge of a corporation's profitability and how efficient it is in generating profits.
- **Return on Assets:** is an indicator of how profitable a company is relative to its total assets. ROA gives the manager, Investors, or analyst an idea as to how efficient a company's management is at
- **Interest Rate (In.Tr):** The interest rate is the amount a lender charges a borrower and is a percentage of the principal—the amount loaned.
- **Exchange Rate (ex):** It is the proportion at which one unit of foreign currency is exchanged for market determined or central government determined number of units of a domestic currency.
- **Inflation Rate (INF):** It is a situation in which the economies overall price level is rising. It represents sustained and pervasive increment in aggregate price of goods and services resulting decline in purchasing power of money.

Techniques of Data Analysis/ Model Estimation Techniques

The study employs regression analyses in establishing relationship between variables. The pre estimation test is based on a unit root test using Augmented Dickey Fuller (ADF) under the assumption of no intercept and trend and if it is found that variable series are integrated at different orders.

Decision Criteria

Table 1: ROE and Expected Sign (+/-) of Explanatory Variables in this Study

interest rate	+	Increase in interest rate increase Return on Equity
Inflation	-	Rise in inflation rate will decrease Roe
exchange rate	+	Rise in Exchange rate lead to increase Return on Equity

Source: Author, 2021

Table 2: ROA and Expected Sign (+/-) of Explanatory Variables in this Study

interest rate	+	Increase in interest rate increase Return on Assetsy
Inflation	-	Rise in inflation rate will decrease Roa
exchange rate	+	Rise in Exchange rate lead to increase Return on Assets

Source: Author, 2021

Data Presentation and Analysis

The central focus of this study is to give empirical stance on relationship between monetary polies and banks performance in Nigeria. In tandem with existing studies, regression analyses technique was adopted to investigate the dynamics that exist in the relationships between the variables, which had already been specified in chapter three.

Descriptive Analyses

The raw data on the variables employed for this study are presented in Appendix I and II respectively for the panel data variables and time series variables: The researcher employs various statistics to examine the shapes of the distribution of these data and to check whether the data series follow a Gaussian process. The statistics are Jaque Bera (JB), Lilliefors (D), Cramer-von Mises (W2), Watson (U2), and Anderson-Darling (A2). Tables 4.1 present the value of these statistics in respects of each variable using time series and panel data.

Table 3: Showing Statistical Descriptive Results for Time Series Data

Statistic	EXC	INF	INT	ROE	ROA
Skewness(Sk)	0.225971	1.584134	0.011390	0.460094	1.681278
Kurtosist (Kt)	1.422537	4.470454	3.146787	4.053464	4.533808
Jarque-Bera (JB)	4.038964(0.13)	18.30023(0.00)	0.033098(0.98)	2.934797(0.23)	20.48902(0.00)
Lilliefors (D)	0.279574(0.00)	0.27815(0.00)	0.12924(>0.1)	0.103599(>0.1)	0.356131(0.00)
Cramar-Von-Misses (W2)	0.444866(0.00)	0.709152(0.00)	0.094766(0.13)	0.07592(0.23)	1.115259(0.00)
Watson(U2)	0.442572(0.00)	0.628273(0.00)	0.094217(0.11)	0.075846(0.20)	1.021071(0.00)
Anderson-Darling (A2)	2.525558(0.00)	3.639893(0.00)	0.599236(0.11)	0.537748(0.16)	5.633118(0.00)

Source: Author, 2021

The researcher collected time series annual data on exchange rate (exc), inflation (inf), interest rate (int), Rerun on Equity (roe) and Return on Asset (roa) for a period of 20 years (2001 to 2020). As shown in table 4.1, the coefficient of skewness in each of the variables is approximately larger than zero (0.23, 1.58, 0.01, 0.48, and 1.68 respectively for exc, inf, int, roe, and roa), indicating that all the variables are positively skewed, and asymmetric in nature. This simply means throughout the sampling period, the raw data exhibit much more low values than high value. The kurtosis values are 1.422537, 4.470454, 3.146787, 4.053464, and 4.533808 respectively for exc, inf, int, roe, and roa. This means exchange rate has low volatility of volatility, and it is plytokurtic, with flat tail. While inflation, interest rate, ROE/non-performing credit and roa are leptokurtic with high volatility of volatility. This leptokurtic characteristic suggests that in future time, these variables would manifest high values or there would be occasional outliers in the future. The JB statistic of exchange rate is large with probability value larger than alpha value at 5 percent, but the probability values of D, W2, U2 and A2 are smaller than 5 percent significant level. This suggests that the preposition that exchange rate follows a normal distribution is only supported by the JB test. Amazingly, the probability values for all these statistics are zero or less than alpha value even at 1 percent, in respect to inflation and roe. Hence, reject the normality hypothesis, and affirm that the variables series do not follow the pattern of a normal distribution. To the contrary, and in respect to interest rate and roa, the probability values are larger than the alpha value at 5 percent. This provides an evidence of normal distribution. It is obvious that while roa follows a normal distribution, roe does not.

Unit Root Test

The researcher conducted unit root test using Augmented Dickey Fuller (ADF) method for the time series data and Levin, Lin and Chu (LLC) technique for the panel data. The formal is reported in table 4.3, while the latter is in table 4.4 respectively.

Table 4.3 presents the ADF statistics and the critical values at 5 percent level of significance in respect of exchange rate, inflation, interest rate, performing credit and nonperforming credit. Exchange rate at raw (exc) has ADF statistic (0.34), which less than the critical value at 5 percent. Therefore, the level value of exc is not integrated. However, after differencing Dexc has ADF statistic (–5.65) that is in absolute value larger than the critical value, suggesting that exchange rate is stationary at first difference. In an analogous veil, Return on assets/performing credit (Roa) exhibits positive ADF statistic (6.64). This has automatically provided evidence of a unit root in this variable. Differencing the variable (Roa) yields ADF (-9.70). In absolute value, this is larger the critical value at 5 percent (-4.44). Hence, Return on assets/performing credit is I(1) integrated variable. Surprisingly, interest rate, inflation, and Return on equity/nonperforming credit have ADF statistics -3.05, -2.951 and -3.16 respectively, which are larger than the critical value at 5 percent. This means inflation, interest rate and Return on equity/nonperforming credit are I (0) variables.

Table 4: Showing ADF Results

Var	ADF-stat	Critical-Value @ 5%	P-Value
Exc	0.34	-2.95	0.98
Dexc	-5.65	-2.95	0.00

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Inf	-3.05	-2.95	0.04
Roa	-3.16	-2.95	0.03
Int	-2,951	-2.945	0.0497
Roe	6.64	-2.95	1.00
DRoe	-9.70	-4.44	<0.01

Source: Author, 2021

Table 4 reports the Levin, Lin and Chu statistics and their associated p-values. The series of interest rate (Int) at raw has LLC statistic (-0.074) corresponding to a p-value of 0.469. Nevertheless, the differenced interest (int) has LLC statistic (-2.22) and the associated p-value is 0.013. These results reveal that interest rate margin is I (0) not stationary but integrated to order 1. Performing credit (PC) at raw manifest unit root because the observed LLC value is positive 1.759 and the corresponding p-value is larger than the alpha value at 5 percent. Transforming the series to first difference, marked by Droe, eliminate the unit root feature, thus performing credit is an I (1) variable. Return on total asset roa also has a unit root at level but when it is integrated to order 1, it becomes stationary. Return on equity have LLC statistics that correspond with p-values that are smaller than the 5 percent level of significance. Therefore, roe are stationary at raw and the panel variables are mixed integrated just like the series variables.

Table 5: Relationship between Roe and Independent Variables

Regressor	Coefficient	Std-error	T-value	P-value	
C	-1.89E+10				
Exc	0.1451	2.97E+10	-0.63677	0.5301	
Intr	0.132517	0.03563	3.719244	0.001	
Inf/Lcrdms/					
Fdidms	-31241274704				
Mean dependent					
Var	0.312821		S.D. dependent var		4.593365
Sum squared resid	241.0590		S.E. of regression		3.237410
R-squared	0.699339		Adjusted R-squared		0.503255
Log-likelihood	–90.85746		Akaike criterion		213.7149
Schwarz criterion	240.3319		Hannan-Quinn		223.2649
Rho	–0.090879		Durbin-Watson		2.012054

Source: Author, 2021

Then the equation line can be written as;

Roe $=-1.89E+10+0.1451exc_t+0.132517intr - 31241274704inf + 4.593363$

As revealed in table 4.11, Return on Equity (roe) and Inflation rate are inversely related. Therefore, any change in inflation rate leads to decline in Return on equity within the period of study. This is in line with findings of Eke (2019) where it was ascertain that inflation has negative effect on bank performance.

It was observed that both interest rate (int) and exchange rate (exc) has a positive correlation with Roe within the period of study. These confirm that monetary policy (Interest rate and exchange rate) has positive impact on return on equity within the period of study. Although, research has shown that an increase in interest rate debars investors from borrowing and they quickly pay off their outstanding loans to avoid debt-servicing burden.

Table 6: Relationship between Roa and Independent Variables

Regressor	Coefficient	Std-error	T-value	P-value	
C	0.13257				
Exc	0.52374	0.03563	3.719244	0.001	
Int	0.34218	9.89E+09	0.094415	0.9255	
Inf	-0.71210	2.97E+10	-0.63677	0.5301	
Mean dependent var	0.312821		S.D. dependent var		4.593365
Sum squared resid	218.7745		S.E. of regression		4.102293
R-squared	0.727133		Adjusted R-squared		0.202389
Log-likelihood	–88.96596		Akaike criterion		229.9319
Schwarz criterion	273.1845		Hannan-Quinn		245.4506
ho	–0.002698		Durbin's Watson		–0.030823

Source: Author, 2021

The model's equation line is written as;

Roa $=0.132517+0.52374Exc+0.34218int-0.71210+4.102293$

In the table 4.12 above show relationship between Return on assets of Deposit Money Banks and monetary policies in Nigeria. The results show that there is inverse relationship between inflation rate (inf) and Return on Assets (Roa). Whole other variables has positive relationship with return on assets employed by DMBs within the period of study. The results also show that there is positive relationship between monetary policies and performance of DMBs within the period of study.

In literature, Adegbite and Adetiloye (2013) have shown previously that inflation rate have negative relationship with bank performance.

The value of coefficient of correlation (R^2) is 0.727133 which mean that monetary policies (independent variables) has 72.7 percent effect on DMBs performance (Roa) within the period of study. The Durbin-Watson statistic of 2.01 shows that our variables were not serially correlated. This realization is in line with the suggested workability of structuralist hypothesis of banking operations in Nigeria. The economy, having grown to a steady state of generating positive net income for itself.

Summary of Interpretation

In Model I it was established that there are relationship between monetary policies (as represented by Interest rate-int and exchange rate) and DMBs' performance (as represented by Return on equity-roe). This is shown in the results of the analyses in model I.

Also in model II, it was established by relationship between monetary policies (as represented by Interest rate-int and exchange rate) and DMBs' performance (as represented by Return on assets-roa).

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

This section is the penultimate of this study. It originates from the specific issues, which have been addressed empirically in section III. It is rooted on the link between the major findings and the objectives proposed for the study. Therefore, the scope of the chapter covers the discussion of findings, summary of findings, and policy implication of findings.

Summary of Findings

The study provides fresh findings on the relationship between monetary policies and Deposit Money Banks (DMBs), however the findings is in tandem with a priori expectation and current positions in the literature. This project established that historical inflation and interest rate influence performing of DMBs. This means that these macroeconomic factors influence performance of DMBs, while the results revealed that

Interest rate has a positive influence on DMBs performance which mean an increase in interest rate lead to increase in return on equity as measure of performance within the period of study. Contrary, inflation rate has an inverse relationship with performance of DMBs within the period of study.

It was observed that different to findings of Skarica (2013) where it was confirm that increase in interest rate will decrease demand for loan and thereby affect the performance of DMBs. However, Carlos (2012) observed that inflation has significant impact on performance of DMBs like every other business entity. But Mileris (2012) discovered that there are more macro-economic factors that affect DMBs' performance.

It is further documented that historical return on equity has inverse effects on supply of loanable fund in the short run, while historical interest rate margin and return on asset has positively influence in the short run. Many studies did not really capture the short run relationship (Louzis et al. (2010). Other findings revealed that inflation and exchange rate yield negative sensitivity, interest rate produces positive sensitivity in the long run, and any increase in exchange rate and inflation leads to decline in performing of DMBs.

CONCLUSION

It is important to clarify some puzzling issues with reference to the nature and degree of DMBs factors and monetary policies. The outcomes of the major findings of this study lead to conclusion as follows. Foremost, it was concluded that there is existence of relationships between monetary policies as represented by exchange rate, inflation and interest rate and DMBs performance as represented by Return on Equity-roe and return on assets –roa within the period of investigation. It was established that these set of policy tools are potentially influential in driving performance of DMBs in both the short run and long run economic situations.

Also, this study, concludes that influence/causality in the long run runs from exchange rate, interest rate and inflation to Roe and Roa

Recommendations

Based on the findings of this study, effective and sustainable monetary policy is capable of ensuring optimum performance of DMBs should be adopted it be apply judiciously. Therefore this study proffered that the monetary authority (the Central Bank of Nigeria-CBN) should moderate the deposit rate as a tool for regulating deposit money banks operation, incentives should be given to the public in form of higher interest on deposit in order to encourage and mobilize more funds from the public to the sector. Therefore, banks should improve her enlighten programmes to educate the public on the need, benefit and essence of imbibing the banking culture.

A monetary policy adopted should aim at stabilizing and stimulating economic activities, administration of monetary policy should be such that is flexible and peculiar to environmental factors to enable the MDBs to discharge their duties effectively to the public.

Monetary authority should create and implement monetary policies that favoured efficient and effective financial intermediation that will ensure financial stability in Nigeria. In addition, monetary authorities should increase the tempo of enforcement of monetary policy designed to raise and foster the confidence of the economic agents' patronage which sustain the financial superstructure.

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