



## **Selected Macroeconomic Variables and Performance of Deposit Money Banks in Nigeria**

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### **Abstract**

Macroeconomic variables are indicators or main signposts signaling the current trends in the economy. Thus Keynes identified some main macroeconomics variables that study the economy as a whole: Gross Domestic Product (GDP), Exchange rate (EXR), Interest Rate, Inflation and Money Supply. GDP is a measure of the annual improvement in the standard of living of the average citizen/resident of a country and it takes into account all the production inside a country, independent of whose ,domestic or foreign, owns the production site. The study examined the effect of selected macroeconomic variables on the performance of Deposit Money Banks in Nigeria. specifically, the study determine the effect of money supply on the performance of Deposit Money Banks in Nigeria; Investigate the effect of exchange rate on the performance of Deposit Money Banks in Nigeria; Analyze the effect of interest rate on the performance of Deposit Money Banks in Nigeria; Determine the effect of inflation rate on the performance of Deposit Money Banks in Nigeria. The data were analyzed with econometric techniques involving Augmented Dickey Fuller Tests for stationarity and Ordinary Least Square (OLS) Regression analyses were used. The regression result indicates that money supply and interest rate have positive and significant effect on return on asset (ROA) while exchange rate and inflation rate have negative and insignificant effect on return on asset (ROA). The study thus concludes that selected macroeconomic variables have positive effect on the performance of Deposit Money Banks in Nigeria. amongst the recommendations is that monetary authorities should pay special attention on broad money supply by manipulating instruments like the liquidity ratio, reserve ratio which directly affects the monetary aggregate to enhance the performance of Deposit Money Banks in Nigeria, The Central Bank of Nigeria should adequately put measures to safeguard the value of the domestic currency. This would ensure that the value on the domestic currency does not fluctuate much day in day out. Government should strive to see to it that while exploring the possible benefits of inflation, efforts should be made to reduce inflation rate in Nigeria to a single digit. A major policy implication of this result is that concerted effort should be made by policy makers to increase the level of output in Nigeria by improving productivity/supply in order to reduce the prices of goods and services (inflation) so as to boost the growth of the economy. Inflation can only be reduced to the barest minimum by increasing output level to promote the performance of commercial banks in Nigeria

**Keywords:** Macroeconomic Variables, Deposit Money Banks, Nigeria

### **INTRODUCTION**

Macroeconomic variables are indicators or main signposts signaling the current trends in the economy. Keynes identified some main macroeconomic variables that relate to the economy as a whole as Gross Domestic Product (GDP), Exchange rate (EXR), Interest Rate, Inflation and Money Supply. Gross Domestic Product (GDP) is the broadest quantitative measure of a nation's total activity. It represent the monetary value of all goods and services produced within a nations geographic borders over a period of time especially one year (Aroriode & Ogunbadejo, 2014)

Macroeconomics is still an evolving science but the goals of macroeconomic policy have been uniform globally. These include price stability, foreign exchange stability, full employment, balance of payment equilibrium, economic growth and development. Although these policies are very important, they could not be pursued simultaneously because some of them conflict with one another. Therefore there is always a tradeoff between the various objectives hence a country pursues a policy which is relevant to its stage of development at different times and in different circumstances (Ebikila, Agada, Lucky & Matthew, 2018). Government and policy makers have embarked on various macroeconomic policies to address these issues. Some of the policies involved the use of monetary and fiscal policy, export promotion strategy, imports substitution strategy, National Economic Empowerment Development Strategy (NEEDS). The fundamental objectives of the policies include price stability, maintenance of balance of payments equilibrium, promotion of employment, 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 development (Nwoko, IHEMEJI & ANUMUDU 2016).

Macroeconomic variables that affect credit creation of commercial banks are those characteristics of a macro economy that affects the profitability of the banks operating within the economy (Otieno, 2013). According to Otieno (2013), the macro economic variables vary in their respective levels of significance from one economy to another and cannot be directly controlled by individual shareholder and managerial decisions and activities, the macroeconomic variables which include economic growth (GDP), inflation, interest rates and exchange rate, will provide a theoretical backup for the explanatory variables that are included in the empirical estimations of this study. The financial stability of the banking sector relies heavily on the stability of the economy. Given the relation between the well-being of the banking sector and the growth of the economy According to, Abdul, (2016) the knowledge of the effect of macroeconomic variables on credit creation of commercial banks in Nigeria is essential not only for the managers of the banks, but also for numerous stakeholders such as the central banks, bankers associations, governments, and other financial authorities. Knowledge of these factors would be useful in helping the regulatory authorities and bank managers formulate future policies aimed at improving the profitability of the Nigerian banking sector.

Adegbemi, (2018) states, macroeconomic variables like interest rates plays a crucial role in attraction of investors. Without interest rates stability, domestic and foreign investors will stay away and resources will be diverted elsewhere. Econometric evidence of investment behavior indicates that in addition to conventional factors (past growth of economic activity, real interest rates, and private sector credit), private investment is significantly and negatively influenced by uncertainty and macroeconomic instability.

Commercial banks play a vital role in the economic resource allocation of countries and contribute to economic growth of the country by making funds available for investors to borrow as well as financial deepening in the country (Ongere, 2013). Bank performance is vitally important for all stakeholders such as its owners, the investors, and the debtors, managers of banks, the regulators and the government. The credit creation of commercial banks in Nigeria have been affected by internal and external factors which can be classified into bank specific (internal) and macroeconomic variables (Ongere, 2013). The internal factors are individual bank characteristics which affect the bank performance mainly influenced by decisions of management and board. The external factors are sector wide which are beyond the control of the company and affect profitability of banks.

#### **Statement of the Problem**

Since the introduction of the Structural Adjustment Programme (SAP) in 1986. The Nigerian economy has become more open to market forces and their attendant problems. All those while, the Nigerian economy had to deal with problems of high inflation rate and unstable economic growth and development, high and increasing rate of unemployment, trade imbalances, unstable exchange rate and high interest rate which had adversely affected the performance of Deposit Money Banks in Nigeria (Abdul & Marwan, 2013).

Economists differ on which policies that could enhance the performance of commercial banks in Nigeria. For example, Antwi, Mills and Zhao, (2013) argue that macroeconomic policies are necessary for long-

term development and performance of commercial banks in Nigeria. However, Gatawa, Akinola, and Muftau (2017) asserted that monetary variable is more effective and dependable than fiscal variable in affecting changes in the performance of commercial banks. Other scholars argue that the growth of human capital, that is, investment in education and training contributes significantly to long-run effect on the performance of Deposit Money Banks (God'stime & Uchechi Shirley, 2014).

Previous attempts to understand the effect of macroeconomic variables on the performance of Deposit Money Banks have resulted in conflicting opinions. The existing studies disagreed both in the line of significance and direction of relationship. A number of the findings highlight significant influence from macroeconomic variables especially the moderating effect of money supply (Gatawa, Akinola, Muftau, 2017; Olawale, 2015; Muhammad, & Sahibzada, 2017). Despite agreeing that performance of Deposit Money Banks responds to macroeconomic variables, these studies are at variance as to the direction of the effects. This conflict makes it implausible to employ macroeconomic variables for sound policy and management on the performance of Deposit Money Banks in Nigeria

For instance Holden, Sparman, 2013; Pitia, Lado, 2015; Paul, Akindele, 2016, averred that all the macroeconomic variables they employed have a negative effect on the performance of Deposit Money Banks in Nigeria in both the long and short run suggesting that growing money supply, interest rate, exchange rate and credit extension will rather hamper the performance of Deposit Money Banks in Nigeria; as against the belief from studies like Onwanchukwu, (2015), Ozei, Sezgin, Topkaya, (2013), that macroeconomic variables enhance the performance of commercial banks in Nigeria. Even at this, a number of studies outrightly argued that macroeconomic variables have no effect on the performance of Deposit Money Banks in Nigeria (Onuorah, Osuji 2014; Olawunmi, Adedayo 2016). Aroriode and Ogunbadejo, (2014), noted that interest rate, exchange rate and inflation rate are not statistically significant tools for enhancing the performance of Deposit Money Banks in Nigeria

Some researchers employed the Johanson cointegration test that may not adequately moderate variables with level 1(0) and first difference 1(1) stationarity in a regression estimation. Any study that employed a more robust Autoregressive Distributive Lag (ARDL) approach is most likely to produce better and more reliable empirical results (Anthony, Uzomba & Olatunji, 2013).

These shortcomings have somehow contributed to the knowledge gap in the literature. This study seeks to improve on the past studies by using data from 1987 to 2019 a period of 32 years. This work attempts to distinguish between long and short run effects of the variables in the model and determine the causalities among the variables to be used in the study.

## **REVIEW OF RELATED LITERATURE**

### **Conceptual Framework**

#### **Macro-economic Variables**

Macroeconomic variables are indicators or main signposts signaling the current trends in the economy. Thus Keynes identified some main macroeconomics variables that study the economy as a whole: Gross Domestic Product (GDP), Exchange rate (EXR), Interest Rate, Inflation and Money Supply. GDP is a measure of the annual improvement in the standard of living of the average citizen/resident of a country and it takes into account all the production inside a country, independent of whose ,domestic or foreign, owns the production site (Aroriode & Ogunbadejo, 2014). What is important is that the production takes place inside the territory of the country. Exchange rate is the rate at which one nation's currency is exchanged with another country's currency. If one nation's exchange rate is higher than another one, it affects the purchasing power of the lower exchange rate of a particular country. For example, if the naira rate is lower in comparison to American dollar an American will have a higher purchasing power than a Nigerian. Interest rate is the cost of borrowing money.

Rising interest rate signals an expanding economy and when already high interest rate begins to rise even further and faster, it is a sure sign of the onset of inflation. Inflation in an economy can be the result of an increase in aggregate demand that is not accompanied by an increase in aggregate supply. A rise in any component of aggregate demand can bring about demand-pull inflation. Inflation can also result from a decrease in aggregate supply that occurs when businesses find that production inputs prices have risen.

Such occurs when labour cost and the price of raw materials have risen. Money supply is the injection of money into the financial system. It is an important macro-economic tool for stabilizing the economy when there is recession (Ullah, & Rauf, 2013).

Macroeconomic policy refer to those policy of Government aimed at the aggregate economy, usually to promote the macro goals of full employment, stability, and growth. Common macroeconomic policies are fiscal and monetary. Fiscal policy is the macroeconomic policy where the government makes changes in government spending or tax to stimulate economic growth while monetary policy deals with changes in money supply or changes with the parameters that affects the supply of money in the economy. The objectives of this policy include the achievement of sustainable economic growth and development, stable price and full employment. Some of the objectives set are potentially in conflict with each other, which means that, in attempting to achieve one objective, another one is 'sacrificed'. For example, in attempting to achieve full employment in the short-term price inflation may occur in the longer term (Ojede, Amin & Daigyo, 2013).

### **Theoretical Framework**

The theoretical framework of this study hinges on the Bank Liquidity Theories: The theory posit that the amount of money available to commercial banks and their ability to generate savings through deposits determines their money creating power and performance. Liquidity management therefore involves the strategic supply or withdrawal from the market or circulation the amount of liquidity consistent with a desired level of short-term reserve money without distorting the profit making ability and operations of the bank (Ibe, 2013). It relies on the daily assessment of the liquidity conditions in the banking system, so as to determine its liquidity needs and thus the volume of liquidity to allot or withdraw from the market. The liquidity needs of the banking system are usually defined by the sum of reserve requirement imposed on banks by a monetary authority (CBN, 2012).

### **Empirical Review**

Chandio, Abdul, kev and Balar (2016) analyzed the impact of money supply on the performance of deposit money banks in Pakistan by using secondary data from 1996 to 2015. The findings show that money supply have positive and significant effect on the performance of commercial banks in Pakistan

Ismaila, (2016) examine exchange rate depreciation and performance of deposit money banks in Nigeria during the SAP and post SAP period. The study covers the period of 1986–2012, using the Johansen co-integration test and error correction model analyses after conducting the stationary test, the results show that broad money supply, net export and total government expenditure have significant impact on real output performance in the long run while exchange rate has direct and insignificant effect on Nigeria on the performance of commercial banks in Nigeria in both short and long run

Diala, Kalu, and Igwe-Kalu (2016) examined the relationship between commercial property market and foreign exchange markets in Nigeria from 2000 to 2010 with the aim of determining the effects of Naira/US Dollar exchange rate volatility on commercial property returns in Nigeria. This study was motivated by the progressive Naira/Dollar exchange rate regime and its potential consequences on real estate investment decision making. The Exponential Generalized Auto-Regressive Conditional Heteroscedasticity (EGARCH) was used in establishing the relationship between exchange rate volatility and property investment returns volatility in Nigeria. It was found that there exists a positive insignificant relationship between commercial property returns and Naira/US Dollar exchange rate movement in Nigeria. It was also discovered that there is volatility persistence of exchange rate on commercial property returns which implies that current period rate has an effect on the forecast variance of future rate. Leverage effect was not sufficiently significant within the study period.

Mary and Willy (2016) examined the effects of the foreign exchange risk management techniques on the financial performance of deposit money banks in Kenya. To achieve the objectives the data was collected from the population of 39 out of 43 banks registered in Kenya due to data availability. Data collected was both primary and secondary. Primary data was collected by use of questionnaires that were administered to the individuals in managerial positions. The secondary data was collected using schedule. Each of the

commercial banks was served with two close-ended questionnaires. The study found that use of financial derivatives had a significant influence on the performance of commercial banks in Kenya. Particularly options, swaps and forwards were all found to have positive effect on the performance of commercial banks in Kenya.

Amassoma, and Odeniyi, 2016) examined the impact of exchange rate fluctuation on the Nigerian on the performance of commercial banks in Nigeria using an annual data of forty-three (43) years covering the period (1970 – 2013). The standard deviation method was employed to capture and estimate the fluctuation inherent in the model as regards the research’s objective. The study employed econometric techniques such as; Multiple Regression Model, Augmented Dickey Fuller (ADF) test, Johansen Cointegration Test and the Error Correction Model (ECM). Evidence from this study exhibited that there exists a positive but insignificant impact of exchange rate fluctuation on Nigerian in both the long run and short run.

**METHODOLOGY**

**Research Design**

An ex-post facto research design will be adopted for this study because the data are time series data which were sourced from the, Central Bank of Nigeria Annual Reports and Statement of Accounts. Independent variables are money supply, exchange rate, interest rate and inflation rate (x) while credit creation of commercial banks in Nigeria is the dependent variable (Y) which will be proxied by Return on Asset (ROA)

**Model Specification**

The model which is adopted for the study is the model of Muftaudeen and Hussainatu (2014) which examined macroeconomic variables and the performance of commercial banks in Nigeria.

**The model is stated thus:**

$$ROA = f (M_2, EXR, ITR)$$

**Where:**

- ROA= Return on Asset
- M<sub>2</sub>= Money Supply
- EXR= Exchange Rate
- ITR = Interest Rate.
- € = Error term

**The Model will be Modified as Follows**

$$ROA = f (M_2, EXR, ITR, IFR)$$

$$ROA = \beta_0 + \beta_1 M_2 + \beta_2 EXR + \beta_3 ITR + \beta_4 IFR + \mu - - - - - 1$$

- ROA= Return on Asset
- M<sub>2</sub>= Money Supply
- EXR= Exchange Rate
- ITR = Interest Rate.
- IFR= Inflation Rate

$\beta_0$  and  $\mu$  are the constant and error term respectively while  $\beta_1, \beta_2, \beta_3, \beta_4,$  are the coefficient of macroeconomic variable on the performance of commercial banks in Nigeria.

**Method of Analyses**

The data will be analyzed with econometric techniques involving descriptive statistics, Augmented Dickey Fuller and Philip Perron tests for Unit Root, and the Ordinary Least Square

**DATA ANALYSIS**

**Table 1: The Unit Root Test**

<b>At Level</b>					
<b>Variables</b>	<b>Augmented Dicker Fuller Test</b>		<b>Philip and Peron Test</b>		<b>Decision</b>
	<b>t-Statistic</b>	<b>Prob.</b>	<b>Adj. t-Stat</b>	<b>Prob.</b>	
ROA	-7.133424	0.2339	-1.996650	0.0028*	Stationary at level
M <sub>2</sub>	-5.156835	0.6783	-1.023858	0.0037*	Stationary at level
EXR	-4.109778	0.0036*	-4.046948	0.0042*	Stationary at level
ITR	-8.662571	0.0000*	-9.114547	0.0000*	Stationary at level
IFR	-6.364762	0.1603	-2.364762	0.0001*	Stationary at level

The result of the unit root test indicates that return on asset, money supply, exchange rate, interest rate and inflation rate attends stationary at levels. This is indicated with the probabilities of the test values which are below 0.05 levels.

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**The Ordinary Least Square Regressions**

Dependent Variable: ROA

Method: Least Squares

Date: 03/23/21 Time: 15:27

Sample: 1987 2019

Included observations: 32

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.667553	0.824890	10.809263	0.0260
M <sub>2</sub>	0.164745	1.010577	2.163021	0.0058
EXR	-0.518247	0.672745	1.770347	0.2183
ITR	0.068816	0.039042	2.762604	0.0302
IFR	-0.027885	0.022862	-1.219695	0.4320
R-squared	0.712561	Mean dependent var		4.676947
Adjusted R-squared	0.655073	S.D. dependent var		7.153306
S.E. of regression	6.953540	Akaike info criterion		6.888364
Sum squared resid	1208.793	Schwarz criterion		7.165910
Log likelihood	-100.7696	Hannan-Quinn criter.		6.978837
F-statistic	19.349696	Durbin-Watson stat		2.971283
Prob(F-statistic)	0.006525			

The results from coefficient (0.667553) and the probability value ( $p = 0.0260 < 0.05$ ) showed that return on asset (ROA) which is the dependent variable (Y) is positive: This means that if all the independent, explanatory variables (X) are held constant, return on asset (ROA) as a dependent variable (Y) will grow by (0.667553) units in annual-wide basis.

The results from coefficient (0.164745) and the probability value ( $p = 0.0058 < 0.05$ ) showed that money supply (M<sub>2</sub>) had positive and significant effect on return on asset (ROA). This means that the null hypothesis one: money supply (M<sub>2</sub>) has no significant effect on return on asset (ROA), is rejected.

The results from coefficient (-0.518247) and the probability value ( $p = 0.2183 > 0.05$ ) showed that exchange rate (EXR) had negative and insignificant effect on return on asset (ROA). This means that the null hypothesis two: exchange rate (EXR) has no significant effect on return on asset (ROA), is accepted.

The results from coefficient (0.068816) and the probability value ( $P. = 0.0302 < 0.05$ ) showed that interest rate (ITR) had positive and significant effect on return on asset (ROA). This means that the null hypothesis three: interest rate (ITR) has no significant effect on return on asset, is rejected.

The results from coefficient (-0.027885) and the probability value ( $P. = 0.4320 > 0.05$ ) showed that inflation rate (IFR) had negative and insignificant effect on return on asset (ROA). This means that the null hypothesis four: inflation rate (IFR) has no significant effect on return on asset (ROA), is accepted

The coefficient of determination ( $R^2$ ) = 0.712561 showed that about 71% of changes in the on the performance of commercial banks in Nigeria is accounted for by the level of macroeconomic variables in Nigeria. This implies that macroeconomic variables is one major contributor on the performance of commercial banks in Nigeria

The F-statistics (19.349696;  $p. < 0.05$ ) indicated that all the variables of the model (macroeconomic variables) have significant effect on the performance of deposit money banks in Nigeria. The Durbin Watson statistics (2.971283) showed that there was no autocorrelation in the model employed.

## CONCLUSION

The regression result indicates that money supply and interest rate have positive and significant effect return on asset (ROA) while exchange rate and inflation rate have negative and insignificant effect return on asset (ROA).

The study thus concludes that selected macroeconomic variables has positive effect on the performance of deposit money banks in Nigeria

## RECOMMENDATIONS

In line with the objectives and findings, we recommend that: The monetary authorities (Central Bank of Nigeria) should pay special attention on broad money supply by manipulating instruments like the liquidity ratio, reserve ratio, among others which directly affects the monetary aggregate to enhance the performance of commercial banks in Nigeria. The relevant authorities for instance, the Central Bank of Nigeria should adequately put measures to safeguard the value of the domestic currency. This would ensure that the value on the domestic currency does not fluctuate much day in day out. More awareness should be created to educate customers of the benefits that accrue from been conscious of the interest rates values. The idea of marketing without emphasis on the interest rates value for customer's deposits should not be encouraged by banks. As a result, bank marketers should learn to emphasize the benefits customers are going to gain when they deposits their fund in their banks. Government should strive to see to it that while exploring the possible benefits of inflation, efforts should be made to reduce inflation rate in Nigeria to a single digit. A major policy implication of this result is that concerted effort should be made by policy makers to increase the level of output in Nigeria by improving productivity/supply in order to reduce the prices of goods and services (inflation) so as to boost the growth of the economy. Inflation can only be reduced to the barest minimum by increasing output level to promote the performance of commercial banks in Nigeria.

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