

# Interest Rates and Return on Assets of Selected Deposit Money Banks in Nigeria (2008-2017)

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**Abstract:-** The paper investigated relationship between interest rate and return on assets of selected deposit money banks in Nigeria from 2008 to 2017. Data considered for the study were obtained from secondary source while ten (10) deposit money banks were selected for the study.

Data gathered were analyzed using regression estimate while panel data analysis was utilized to examine magnitude and significance of the relationship and the research variables. Panel unit root test and Pedroni residual co-integration test were also applied in the study.

The study concluded that prime lending rate, ratio of loan to deposit and treasury bill do not significantly affect return on assets, while savings deposit rate and maximum lending rate exert positive and significant effect on return on assets of deposit money banks in Nigeria.

The study recommends that policy making authorities in Nigeria should coordinate interest rate fluctuations better and induce competition in the entire financial sector.

**Keywords:** Interest rate, Prime lending rate, Unit root test, Modified ordinary least square.

## I. INTRODUCTION

Deposit money bank serves as an intermediary between the surplus and the deficit units; meeting the ultimate needs of both borrowers and lenders. Early banks lent mainly to two classes of borrowers: merchants and governments (Kohn, 2004). Lending to merchants usually took the form of discounting commercial bills. Governments on the other hand were always in need of credits. They borrowed from early banks in exchange of trading rights which attracted a certain interest rate.

A research work of the Central Bank of Nigeria (CBN) in 2016 defines interest rate as the rental payments for the use of credit by borrowers and return for parting with liquidity by lenders over time. It was established in the research findings that interest rate serves as a vehicle for financial intermediary in the economy, it guides the flow of funds from savers to borrowers, it reflects the time value of money and it is also used by the Central Bank of Nigeria as a policy tool to determine the supply and costs of money in the economy. In other words, the economic activity in any economy, to a large extent, is influenced by interest rate.

In the general framework of deregulating the economy under Structural Adjustment Programme (SAP), the Central Bank of

Nigeria introduced a market-based interest rate policy in August, 1987. The deregulation of interest rates allowed banks to determine their own lending rates according to the market conditions through negotiation with their customers. However, the Minimum Rediscount Rate (MRR) which influences other interest rates continued to be determined by the CBN in line with changes in the overall economic conditions. Partial deregulation was however restored in 1992 when financial institutions were required to only maintain a specified spread between their average cost of funds and maximum lending rates. The removal of the maximum lending rate ceiling in 1993 saw interest rate rising to unprecedented levels in sympathy with rising inflation rate which rendered banks' high lending rates negative in real terms. In 1994, direct interest rate controls were restored. As these and other controls introduced in 1994 and 1995 had negative economic effects, total deregulation of interest rates was again adopted in October, 1996.

In December 2006, the CBN introduced a new monetary policy implementation framework with the Monetary Policy Rate (MPR) as the anchor rate. Since its adoption by the Central Bank of Nigeria, the monetary policy rate has been used to define the central point of a standing facility meant to steer market interest rates. The MPR is expected to communicate the stance of monetary policy and acts as a guide for all other market rates. Also, the MPR is the benchmark against which other lending rates in the economy are pegged. An increase in the monetary policy rate will result in a rise in the prime lending rate and other lending rates by Deposit Money Banks (DMBs) to the public (CBN, 2016).

According to Enyioko (2012), the importance of profitability to the deposit money banks cannot be over emphasized. He considered profitability as a crucial objective as it keeps deposit money banks in business and it is particularly essential for survival. He further ascertained that to achieve a desirable profit figure, deposit money banks are confronted with some factors (internal and external). The internal factors according to him are individual bank, characteristics which affect the bank's profitability. These factors are basically influenced by the internal decisions of management and board. The external factors on the other hand are sector wide or country wide factors which are beyond the control of the organization and affect the profitability of banks; one of such external factors according to him is interest rate. Profitability is a generic

word. It can be measured in various ways, one of such ways is the return on assets (ROA). It is on this note that this study aims at assessing the impact of interest rates on return on asset of selected deposit money banks in Nigeria.

## II. LITERATURE REVIEW

This section will concentrate on the literature related to this study by reviewing the conceptual, theoretical and empirical studies that may help in this research.

### 2.1 Conceptual Review

#### 2.1.1 Concept of Interest Rate

The concept of interest rate is basically a monetary policy instrument or tool used by the Central Bank of Nigeria (CBN) to enhance macroeconomic stability: what it achieves can only be measured by the impact it exerts on the profitability of deposit money banks and the business activities. Bermanke (2003) noted that the 1973-1975 recession in United States of America (USA) was not only caused by an increase in oil price but also emphasized that an equally important cause of the recession of that period could be attributed to the indiscriminate interest rates used by the various regulatory authorities. Interest rate in this context can either be real or nominal depending on whether or not changes in price levels are accounted for in their computation. If there is no adjustment for the changes in the price level, then the interest is expressed in nominal terms. The Central Bank of Nigeria has active policies about what interest rate should be, and the bank intervenes in an attempt to influence the operational efficiency of deposit banks. The two most commonly used intermediate targets of interest rate are the money supply and price control. Fundamentally, there exists an inverse relationship between money supply and price controls such that any target set by one must be consistent with the other. The concept of interest rate has objective which can cut across all strata of the economy such that its objectives are always in tandem with that of the overall monetary policy which includes maintaining price stability, ensuring effective credit control and generating rapid economic growth.

#### 2.1.2 Types of Interest Rate

According to CBN (2016), interest rate can be categorized into: policy, deposit and lending rates. Policy rates are the rates used by Central Bank or monetary or monetary authorities to determine the cost, availability and quantity of money in the economy so as to achieve desired macroeconomic objectives. Deposit rates are paid on savings and time deposit of different maturities such as one-month and fixed deposits in financial institutions. Lending rates on the other hand are interests charged by money lenders and banks for meeting short and medium term financing needs of borrowers. This rate is usually differentiated according to credit worthiness of borrowers and objectives of financing.

#### 2.1.2.1 Monetary Policy Rate (MPR)

Monetary policy rate is the rate at which banks lend to Deposit Money Banks (DMBs) in performing their duties as lender of last resort. It is usually set at a level that is consistent with the objective of price stability of Central Bank. The MPR is expected to communicate the stance of monetary policy and acts as a guide to all other market interest rates. Since its adoption by the Central Bank of Nigeria (CBN) in December 2006, the MPR has been used to define the central point of a standing facility meant to steer market interest rate. It is usually set with a corridor in which the upper bound represents the CBN lending rate to DMBs under the Standing Lending Facility (SLF), and the lower bound represents the deposit rate at which the CBN accepts deposit from DMBs under the Standing Deposit Facility (SDF)

#### 2.1.2.2 Lending Rate

This is the rate which DMBs charge their customers on loans extended to them. In Nigeria, two of these rates have been mostly prevalent- the Prime and Maximum Lending Rates. Prime lending rate is simply defined as the interest rate which DMBs charged their most credit-worthy customers which are usually large organizations. For most banks, this rate also represents the minimum rate. It could also form the basis for other lending rates on mortgages, personal loans, and loans to small businesses. The maximum lending rate on the other hand, is the rate charged by DMBs for lending to customers with low credit rating.

#### 2.1.2.3 Interbank Rate

This can be described as an interest rate charged by the banks for short term loans extended to one another. The rate is determined by the availability of funds within the system. Banks lend to and borrow money from each other in the interbank market, which enables them meet the reserve requirements placed by the monetary authority that is Central Bank, as well as manage their various liquidities, the interbank rate can be similarly be referred to as the price which banks use for wholesale foreign exchange transactions both the spot and forward markets; The margins are usually tighter for larger retail transactions than for small retail transactions.

#### 2.1.2.4 Treasury Bond Rate (Coupon Rate)

This is the rate on bonds that do not mature within one year and in most cases are of longer duration of 10 to 30 years. The interest rates on these bond vary depending on their maturity.

#### 2.1.3 Concept of Return on Assets

Siddik, Kabiraj and Joghee (2017) stated that return on assets (ROA) ratio is a commonly used measure of bank performance which gives a picture of how effective the management of the bank is in generating profits with the available assets. It reveals the relative profitability of the company. The return on assets (ROA) is a financial ratio that shows the percentage of profit a company earns in relation to

its overall resources. It is commonly defined as net income divided by total assets. The return on assets ratio formula is calculated by dividing net income by total asset

$$\text{ROA (Olowe, 2009)} = \frac{\text{Profit after Tax}}{\text{Total Assets}}$$

Collins (2017) stated that ROA is used to measure management’s ability to make profit from the company’s assets and can also be used to compare the ROA for other companies in the same industry. ROA is also used to evaluate the benefits of investing in a new system versus expanding a current system through choosing the one that ideally increase productivity and income as well as reduce asset costs, resulting in an improved profit.

2.2 Theoretical Review

2.2.1 Schumpeter Economic Cycle Theory

The theory was propounded by Schumpeter (1939) who indicated the process of economic change or evolution that consists two distinct phases namely “Prosperity” and “Recession”. One under which the impulse of entrepreneurial activity, draws away from an equilibrium position, and the second of which it draws towards another equilibrium position. Schumpeter calls those fluctuations/cyclical processes as economic business cycle. Schumpeter shows the intermediary role of financial sector between those who save and invest, through a process referred to as credit creation by financial intermediaries which leads to economic growth and development. The effect of this process leads to profit and loss generation by the lender and the borrower. According to Schumpeter (1939), the economic consideration for the specification of economic cycle equation is as follows:

$$Vpc(t) = a + bv'oc(t)$$

In formal notation, this consideration is represented by the above equation in which vpc is positively dependent on the growth rate of the variance of the price changes (v’oc). In this equation, OC signifies a price change which is the explanatory variable for the annual profitability changes (PC). This follows that even though banks obviously perform an important task in the accumulation process, because purchasing power is the vehicle for an essential process and because without credit, there will be no innovations and no cycles, banks do not determine economic fluctuation.

Critics of the theory state that it is a common misconception that macroeconomics is purely based on shocks to supply as opposed to shocks on demand, and this leads to the common criticisms of Schumpeter economic cycle theory by ignoring the demand side of the economy. However, in real business cycle situation, consumers will change their consumption and savings decisions based on the real interest available to them which is a shift in demand.

2.2.2 Irving Fishers Theory of Interest

According to Professor Fisher (1930), the theory of interest is an enlargement and synthesis of already existing partial theories and is based on investment opportunity, human impatience and market exchange (buying and selling). While discussing the interest rate theory, Irving Fisher looks at the aspect of human impatience and time preference. Fisher stated that there is the excess of the present marginal want for one more unit of future goods. Thus, the rate of time preference or degree of impatience for present over future goods of like kind is readily derived from the marginal desirability or wants for those present and future goods respectively.

A modern formal notation of Irving Fishers Theory of interest as stated by Dougherty (1980) is based on time preference as specified below:

$$\frac{bv^1(c^1 2)}{v^1(c^1 1)} = \frac{1}{1+r} = \frac{1}{1+F^1(k, L)}$$

According to Dougherty (1980), the expression above is a form of Evler equation which is self-indicative of Fishers Triple Equality. This shows that in any two time periods, the marginal rate of time preference will be equal to the rate of interest and the rate of profit.

According to Fishers, the rate of interest varies according to the time preference, the time preference depends upon the size of income, the distribution of income over time, the composition of income, the certainty of enjoying income in the future, the temperament and the character of the individuals and the expectation of the life of the people. It is however important to note that the Fishers theory has limitation as noted by some scholars: the fishers effect does not hold for private debt. Theoretically, the interest rate on private debt is shown to increase with inflation. Also, the fishers theory fails to show theoretically the influence of the banking system on the rate of interest (Boyd & Jalal, 2012)

2.2.3 Liquidity preference Theory

A famous English economist called John Maynard Keynes attempted to explain the consideration that goes on in any person’s mind when they are in the process of deciding whether to spend their money immediately or defer that expenditure to the future. According to the liquidity preference theory, interest rates are determined by the demand for and supply of money balances. The theory assumes that people’s demand for money is not for transaction purpose but as a precaution and for speculative purposes. The transactionary demand and precautionary demand for money increases with income, while the speculative demand is inversely related to interest rates because of the forgone interest. The supply of money is determined by the monetary authority (The Central Bank), by lending to deposit money banks and the public preference for holding cash (Were, 2013).

In relevance to the study, the theory views interest rates as being driven by the liquidity level of the economy. The theory does not recognize the role of macroeconomic policies formulated by the Central Bank but stipulates interest rates are purely driven by the demand of money in the economy and preference for the liquidity by the users of funds.

#### 2.2.4 Financial Intermediation Theory

The theory regarding financial intermediation was developed by Gurley and Shaw in 1960. The modern theory of financial intermediation analyzes the functions of financial intermediation. The way in which the financial intermediation influences the economy on the whole and the effects of government policies on the financial intermediaries. The financial intermediation theory highlights the role of financial intermediaries in the economy. Most of the studies performed highlights their role in achieving a durable economic growth, and the impact of regulations on financial intermediation, accentuating the role of the Central Bank in the regulation, supervision and control of financial intermediaries.

In relation to this study, deposit money banks perform the function of financial intermediary between by acting as an intermediary between the surplus unit and the deficit unit and have a sole purpose of maximizing profit which occurs as a result of difference between interest received on loans and the interest paid on deposits.

#### 2.3 Empirical Review

This section reviewed some of the past studies, their methodology and findings.

Antonio (2010) conducted a research on the determinants of bank profitability in Spain from 1999 to 2009. The study made use of the Generalized Method of Moment (GMM) estimator to estimate the regression using lagged levels of dependent and endogenous variables. The findings revealed that there is a positive relationship between banks loan portfolio and profitability as measured by both Return on Asset (ROA) and Return on Equity (ROE). Furthermore, it was discovered that there was also a direct and significant relationship between banks profitability and loan quality measured through either doubtful assets ratio or loan loss provision ratio. The research concluded that there is a positive relationship between interest rates and profitability.

Saidu and Tumin (2011) investigated the performance and financial ratios on samples of four Malaysians and nine Chinese commercial banks from 2001 to 2007. The research made use of panel data and the regression results showed that credit, capital and operating ratios have influence on the performance of banks in China which is not true for Malaysia. The study found that liquidity and size of the banks do not influence the performance of the banks in both countries.

Mbua (2017) in his study of the effect of interest rate capping on the shareholdings of banks that are listed on the Nairobi Securities Exchange (NSE) found that an increase in the

lending rate led to an increase in share prices while a decrease in the lending rates led to a decrease in the share price. The study further reflected that most banks in the year 2016 experienced a sharp decline in the share prices when lending rates were lowered, some banks share prices lost almost half their values while majority had more than 11% decline in the share price. An analysis on the attractiveness of the bank share prices after the capping of interest rates in September 2016 showed that a decrease in the lending rates led to many investors selling off the shares in the portfolios and probably opting for other investment alternatives, this is because lower rates are associated with lower potential return on investment.

Ozgun and Mohammed (2016) studied the determinants of deposits banks profitability in Turkey. The study examined the impact of bank-specific and macro-economic factors on deposit banks profitability in Turkey covering the period of 2006 to 2016. The study employed OLS methodology to construct a multiple regression analysis, the result from the study suggested that the Central Bank policy interest rate have a significant impact on banks profitability as measured by the Return on Assets (ROA).

Enyioko (2012) examined the impact of interest rate policy on the performance of deposit money banks in Nigeria. The study utilized the regression method to analyze the relationship between interest rates and bank performance. The study indicated that the interest rate policies have not improved the overall performance of banks significantly and have also contributed marginally to the growth of the economy for sustainability development.

Ojega and Omosefe (2014) also studied the impact of interest rate on bank deposit evidence from Nigerian banking sector, the study investigated the effect of interest rate on customer savings behaviour in the Nigerian banking sector after considering some factors that are likely to influence customer confidence in deposit money banks like commercial lending, average income, legal right strength, total annual commercial bank losses and Central Bank monetary policy. The study used the quantile estimation method and showed that interest rates increase bank deposit while income was found to affect bank deposit in general.

### III. METHODOLOGY

The research design adopted in this study was *ex-post facto*. Data considered for the study were selected mainly from secondary sources obtained from annual reports of selected ten (10) banks covering the period between 2008 and 2017. Based on the population of the study, that is 21 deposit money banks listed on Nigerian Stock Exchange as at 31<sup>st</sup> December, 2017. Five (5) banks were selected from the national authorization banks and five (5) banks from international authorization banks.

Data gathered were analyzed using regression estimation techniques while panel data analysis were utilized to examine



the magnitude and significance of the relationship among the research variables.

*Model specification*

The model in this study followed the work of Ogunbiyi and Ihejirika (2013) where they examined the nexus between interest rates and deposit money banks’ profitability in Nigeria. The model for this study was derived and modified in respect to the objective of the study that is, Interest Rates and Return on Assets (ROA) selected deposit money banks in Nigeria from 2008 to 2017.

$$ROA = (\text{PLR, MLR, SDR, LTD, TB})$$

Where:

- ROA – Return on Assets
- PLR – Prime Lending Rate
- MLR – Maximum Lending Rate
- SDR – Savings Deposit Rate
- LTD – Loan to Deposit Rate
- TB – Treasury Bill

Mathematically:

$$ROA = \beta_0 + \beta_1 \text{PLR} + \beta_2 \text{MLR} + \beta_3 \text{SDR} + \beta_4 \text{LTD} + \beta_5 \text{TB} + \mu$$

Some variables were log transformed so that the problem of heteroscedasticity can be reduced since it comprises the scale in which the variables are measured, thereby reducing a tenfold difference between two values to a two folds difference (Gujarati, 2014). While some variables were not log transformed because they are already in their rates. The model will be restructured into:

$$ROA = \beta_0 + \beta_1 \text{PLR} + \beta_2 \text{MLR} + \beta_3 \text{SDR} + \beta_4 \text{LTD} + \beta_5 \text{LOGTB} + \mu$$

IV. METHOD OF DATA ANALYSIS

This section presents the results and interpretations of the study. Data gathered were subjected to descriptive and inferential statistics.

Descriptive statistics

Table 1 Description Table

	ROA	LOG TB	SDR	PLR	LTD	MLR
mean	0.0570	15.927	3.9203	56.14907	0.7246	26.6167
Median	0.0607	16.827	3.6000	1.1378	0.6915	26.000
Maximum	0.1295	20.664	33.000	900.00	8.4823	40.000
Minimum	1.8000	8.319	2.1000	0.0000	0.0959	14.000
Std Dev	0.0366	3.7328	2.99083	173.7422	0.8055	5.1736
Skewness	-0.1989	-0.8691	9.4131	3.3959	9.1423	-0.0897
Kurtosis	1.8905	2.4463	92.132	14.13426	88.699	3.1258
Jarquebera	5.7305	13.311	34232.89	701.6582	31674.3	0.1979
Probability	0.0570	0.0013	0.000	0.000	0.000	0.9058
Sum	5.6459	1528.96	388.11	5558.76	71.731	2635.0
Sum Sq Dev	0.1316	1323.7	876.62	2958261.	63.585	2623.1
Observe	99	99	99	99	99	99

Source: Authors’ computation (2019) using E-views 9

Where ROA is return on asset, TB is treasury bills, SDR is savings deposit rate, PLR is prime lending rate, LTD is loan to deposit ratio, and MLR is maximum lending rate.

Table 1 presents the descriptive statistics result of the interest rate and return on asset of selected deposit money banks in Nigeria.

Table 2 Correlation Matrix

	SDR	PLR	LTD	MLR	ROA	LTB
SDR	1					
PLR	-0.0243	1				
LTD	0.0312	-0.0543	1			
MLR	-0.0462	-0.0525	-0.0390	1		
ROA	-0.0941	0.0521	-0.0091	0.0224	1	
LTB	-0.0096	-0.0106	0.6584	-0.1221	0.0889	1

Source: Authors’ computation (2019) using E-views 9

Table 2 presents the correlation coefficient of savings deposit rate (SDR), prime lending rate (PLR), loan to deposit ratio (LTD), maximum lending rate (MLR), return on assets (ROA), and Log of Treasury Bills (LOGTB). The results show that the correlation between the variable were low, these shows that none of the independent variables has tendency of causing multicollinearity in the model since none of the correlation value is close to 1.00.

*Panel Unit Root Test*

The time series behaviour of each of the panel series was presented in Table 3, Using the Fisher Chi-square root Augumented Dickey Fuller test and Phillip – Peron tests at both level and first differences of the series.

Table 3 PP-Fisher Chi-square Unit Roots Test Result

Var	Level & (Pvalue)	First Diff (Pvalue)	Order of Integration	Max. No Lags
ROA	28.6515 (0.0949)	55.2247 (0.0000)***	I (1)	2
LOGTB	0.84864 (0.8020)	-5.64899 (0.0000)***	I (1)	2
PLR	-5.12664 (0.0000)***	-3.47159 (0.0003)	I (1)	2
MLR	41.2726 (0.0014)*	80.2646 (0.0000)***	I (1)	2
SDR	11.2388 (0.9398)*	78.5447 (0.0000)	I (1)	2
LTD	11.2388 (0.9398)***	41.2726 (0.0014)***	I(1)	2

Source: Authors’ computation (2019) using E-views 9

Table 3 represents the outcome for the Phillips-Perron panel root tests. The results show that the null hypothesis of the unit roots for the panel data for return on asset (ROA), log of treasury bills (LOGTB), savings deposit rate (SDR), prime lending rate (PLR), loan to deposit ratio (LTD), and maximum lending rate (MLR) cannot be rejected in the level. However, this hypothesis was rejected when the series were in their first differences. The result strongly indicates that the series were not stationery at their level but became stationary at their first

differences. Also, both ROA and MLR was stationary at the level, hence the null hypothesis of no unit root test was rejected at level.

*Panel Co-Integration Test*

The Pedroni’s cointegration test was applied to ascertain the long run convergency. Pedronis (1999) takes account of the heterogeneity by using specific parameters which are allowed to vary across individual members of the samples.

Table 4: Pedroni Residual Cointegration Test

Series: ROA PLR MLR SDR LTD LTB				
	Statistic	Prob.	Statistic	Prob.
Panel v-Statsistic	-2.537270	0.9944	-1.835359	0.9668
Panel rho-Statistic	4.445325	1.0000	4.264681	1.0000
Panel PP-Statistic	-11.34147	0.0000	-9.847977	0.0000
Panel ADF-Statistic	-1.50897	0.0657	-2.642581	0.0041

Source: Authors’ computation (2019) using E-views 9

Table 4 results of the co-integration tests showed that the long-run convergences of the model depicts that the variables converge in the long run, thereby depicting the existence of long run relationship among the variables. The long run relationships exists at 5% level of significance according to

the Philip Peron and ADF cointegration test. Thus, we concluded that a long run relationship does exist among the variables.

*Estimation of the Effect of Interest Rates on Return on Asset*

Table 5: Estimation Result of the Effect of Interest rates on Return on Assets

Dependent Variable: ROA				
Method: Panel Fully Modified Least Squares (FMOLS)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
SDR	0.014597	0.003281	4.449468	0.0000
PLR	-1.15000	7.17000	-0.159949	0.8734
TB	-3.5000	1.080	-0.324696	0.7463
LTD	-0.001827	0.001594	-1.146226	0.2554
MLR	0.000941	0.001594	2.329620	0.0226
R-squared	0.652433	F-statistic		6.215351***
Adjusted R-squared	0.585776	Chi-square		24.86140***
Long-run variance	0.000118			

Source: Authors' computation (2019) using E-views 9

Note:\*\*\* implies 5% significance level

The result shown in Table 5 depicts the effect of interest on return on assets. Interest rate was proxied by different interest rate like Prime Lending Rate (PLR), Savings Deposit Rate (SDR), Maximum Lending Rate (MLR), while the control variable are ratio of Loan to Deposit (LTD) and Treasury Bills (TB). The observed sign of each of the SDR and MLR conform to the theoretical expectation as both show a positive effect while PLR, LTD and TB do not conform to the theoretical exposition as they show an inverse effect on the return on assets respectively.

This explains that a unit increase in SDR and MLR brings about an increase of 0.015 and 0.009 in the ROA respectively. Also a unit increase in PLR, TB, and LTD brings about a decrease of -1.15, -3.50 and -0.00182 respectively. Though both SDR and MLR are statistically significant in explaining ROA at 5% significant level, however the PLR, TB and LTD are not statistical significant in explaining ROA at 5% significant level respectively.

The model shows a goodness of fit with the explanatory power of 58.6% of the total variation in the dependent variable. This explains that PLR, TB, LTD, SDR and MLR only account for 58.6% of the variation that occur in ROA. The value of the F-statistic using Wald-Test was statistically significant at 5% significant level which indicated that variables jointly are significant to ROA.

#### Discussion of findings

The study sought to determine the impact of interest rates on the profitability of selected deposit money banks in Nigeria. The result showed that savings deposit rate and maximum lending rate have a positive relationship with return on asset while prime lending rate, ratio of loan to deposits and treasury bill depicts an inverse effect on return on assets. Savings deposit rate has a positive effect on profitability. This signifies that the higher the savings deposit rate, the higher the profit. The result of this study is in agreement with Kalsoom and Kashif (2016) which investigated the impact of interest rate

spread on profitability of banks in Pakistan and found that interest rate spread is a prominent factor behind the profitability of banks.

#### V. CONCLUSION AND RECOMMENDATIONS

The study examined relationship between interest rate and return on assets of selected deposit money banks in Nigeria from 2008 to 2017. The study concluded that prime lending rate, ratio of loan of deposit and treasury bills do not significantly affect return on assets, while savings deposit rate and maximum lending rate posit a positive significant effect on return on assets.

#### Recommendations:

The study recommends the following:

1. Policy-making authorities in Nigeria should coordinate interest rate fluctuations better and induce competition in the entire financial sector.
2. Bank management must efficiently manage their portfolios in order to protect the long run interest on profit making.
3. The management of commercial banks needs to develop policies and investment sources that diversify income. Diversifying the deposit money banks sources of profitability from the over reliance on the interest rates related sources and exploring other avenues of achieving high profitability is important.

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#### LIST OF BANKS USED FOR THE STUDY

##### National Authorization Banks:

- 1) WEMA Bank of Nigeria Plc
- 2) Unity Bank of Nigeria Plc
- 3) EcoBank Plc
- 4) Sterling Bank Plc
- 5) Stanbic-IBTC Bank

##### International Authorization Banks

- 1) Access Bank Plc
- 2) Guarantee Trust Bank Plc
- 3) Skye Bank (now Polaris Bank)
- 4) Zenith Bank Plc
- 5) United Bank for Africa (UBA) Plc