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# Empirical Analysis of the Impact of Interest Rate Deregulation on the Performance of Deposit Money Banks in Nigeria from 1989-2018

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ABSTRACT

The research examined the impact of interest rate deregulation on the performance of deposit money banks in Nigeria for the period of 1989-2018. The objective of the study is to examine if there is cointegration relationship existing between interest rate deregulation and the performance of deposit money banks in Nigeria; while the null hypothesis is that Interest rate deregulation does not have any long run relationship on the performance of deposit money banks in Nigeria. The research employed Auto regressive distributed lag model (ARDL).regression techniques. The research shows a long and short run relationship between the dependent variable (Total assets of Deposit money banks) and the independent variables (Interest rate on savings, Interest rate on Deposit, and Interest rate on lending). The research concluded and recommended that the negative relationship between the savings rate and total assets of the banks shows that the savings rate in the nation is weighing down the performance of the deposit money banks in Nigeria, therefore it is advised that the banks and the government should advance more the financial literacy programme or awareness so as to educate people on benefits of forgoing some consumption for savings and also the banks should increase the interest on customers savings.

Keywords: Empirical, analysis, deregulation, Performance, Nigeria

## INTRODUCTION

The impact of interest rate is hinged on its equilibrating influence on supply and demand in the financial sector. They had been administrative control on the nation's interest rate until July 1987,when in accord with the spirit of Structural Adjustment Programme (SAP) of the federal government, the central bank of Nigeria issued a circular on interest rate bordering on the deregulation of its financial sector of the economy. The performance of the deposit money Banks in Nigeria largely depends on total savings deposits in the sector and at such, that the main reason banks sets their staff on a high target of deposits to sustain their operations. Interest rate is one of the important terms in the lending decision process of commercial banks.

Although officially the banks are under deregulation period, interest rate in Nigeria is still indirectly regulated. The monetary policy rate (MPR) which the Central Bank uses to control interest rate still determines the direction of interest rate flow in deposit money banks in Nigeria. A higher MPR means interest rate will be high and vice versa. Presently the MPR is 14% according to CBN (2018). Which means that banks in Nigeria cannot afford to lend at single digit rate this is because the total loans of the banks are not determined by bank savings rate, which ought to have influenced total customer deposits to a high trajectory but

the rate at which banks borrow from CBN via MPR. Banks do not charge loan rates that are too low because the revenue from the interest income will not be enough to cover the cost of deposits, general expenses and the loss of revenue from non-performing loan portfolio. On the other hand, they cannot charge too high loan rates because they will not be able to keep the banking relationship with the borrowers with high lending rate. Thus, determination of the appropriate lending rates usually becomes a major issue in banking industry. Moreover, the factors that determine the level of commercial banks' lending rates are important concerns not only for specific banks but also to policy makers, the banking industry and the public at large.

The cash reserve ratio and liquidity ratio which the central Bank uses mainly to ensure stability and reduction of risk in the banking sector also exerts high influence on how interest rate are determined by the deposit money banks in Nigeria. In the ideal banking sector, the performance of bank loans and interest rate margin determines the growth of the sector. The market risk posed by interest rate volatility also goes beyond the performance of these banks to influence the flow of economic activities in the general including considerable influence on inflation rate, and performance of the real sector mainly agriculture and manufacturing sector which the economy depends to generate employment and revenue for economic well being of the nation. Banks in its bid to enhance business tends to manipulate savings rate to increase deposits, but in the realistic terms, greater percentage of deposits in the Nigerian banks are not basically because of the savings rate, but due to increase in financial literacy in the country and governments revenues often traced to the banks. Interest rate differs from bank to bank in the nation and also differs in the same bank based on customers credit records, the prime rate are given to the most preferred customers who have positive track record with the banks while maximum lending rate are open to all who can meet the criteria. Such has also made access to the benefits of the deregulation policy difficult for the Nigerian People. This research seek to analyze the impact of the impact of interest rate deregulation on the performance of deposit money banks in Nigeria from 1989-2018.

**Objectives of the Study:**

The broad objective of this study is to examine the impact of interest rate deregulation on the performance of deposit money banks in Nigeria. The specific objectives of the study are to:

i. Examine the impact of saving interest rate deregulation on the performance of deposit money banks in Nigeria
ii. Investigate the effect of deposit interest rate deregulation on the performance of deposit money banks in Nigeria
iii. Ascertain the effect of lending interest rate deregulation on the performance of deposit money banks in Nigeria
iv. Examine the cointegration relationship existing between interest rate deregulation and the performance of deposit money banks in Nigeria

**Research questions**

Based on the identified objective, the following research questions were made to guide this research;

i. To what extent does savings interest rate deregulation impact on the performance of deposit money banks in Nigeria?
ii. To what extent had deposit interest rate deregulation impact on the performance of deposit money banks in Nigeria?
iii. To what extent had lending interest rate deregulation impact on the performance of deposit money banks in Nigeria?

iv. To what extent did interest rate deregulation and the performance of deposit money banks in Nigeria relates in the long run?

**Statement of the Hypotheses**

The hypothesis for this study will all be presented in null.

i. Interest rate on saving deregulation does not have positive and significant impact on performance of deposit money banks in Nigeria.
ii. Deposit interest rate deregulation does not have positive and significant impact on performance of deposit money banks in Nigeria.
iii. Lending interest rate deregulation does not have positive and significant impact on performance of deposit money banks in Nigeria.
iv. Interest rate deregulation does not have any long run relationship on the performance of deposit money banks in Nigeria.

## LITERATURE REVIEW

### Theoretical Review

**Time Preference Theory of Interest**

This theory was propounded by Irwing in 1930. The study defined interest as payment for waiting, a reward for making a choice to postpone consumption to a future date. He theorized that people generally have an inclination towards current consumption (expenditure) over future consumption Fisher further explained that time preference is determined by the willingness of principle and investment opportunity principle. A comparison of Fishers theory and Keynes theory indicate that both theories are dependent on income and availability of profitable investments. The willingness (indifference) principle is a function of income just like the transactional and precautionary motive while the investment opportunity principle just like speculative motive is a function of the opportunity cost of profitable investments (for example, the interest rate).

However, while Keynes explains his theory using liquidity preference, Fisher concentrated on time preference. Opponents of this theory have declared that it is an indeterminate and narrow theory. It is also viewed as a theory that explains the existence of interest rate but does not actually provide a methodological process for the determination of interest rate. Therefore the interest rate must be attractive enough to encourage sacrifice for immediate satisfaction and this study was framed from time preference theory of interest because interest rate is sacrifice for immediate satisfaction.

**Modern Theory**

The submission that previous theories on determination of interest rate were inadequate and indeterminate propelled the propounding of a new theory of interest rate [1]. This theory takes into consideration both the real and monetary factors that influence interest rate. This theory brings together loanable funds formulation and Keynesian liquidity preference formulation to provide an adequate and well integrated theory of rate of interest. Hicks, Somers, Lerner, Hansen and others opined that the rate of interest, along with the level of income is determined by four factors: (i) the investment demand function (MEC). (ii) The saving (consumption) function. (iii) The liquidity preference function, and (iv) the quantity of money function. The equilibrium condition of these four variables together determines the rate of interest. According to Hansen, equilibrium is reached when the desired volume of cash balances equals the quantity of money. When the marginal efficiency of capital is equal to the rate of interest and finally when the volume of investment is equal to normal or desired volume of saving.

**Loanable funds Theory**

This is a type of theory of interest rate developed by Ohlin Myrdal and Robertson in 1954. The theory stated that interest rate is determined by the forces of demand and supply of loan able funds. The theory further explained the purpose of demand or loan able funds which are (i) investment (ii) Hoarding and (iii) dissaving. For investment, the theory explained the inverse relationship between demand for loanable funds and interest rate. An investor desire for funds to invest in making of new capital goods. But such demand can only be actualized if the interest rate is less to the expected return on investment. If the interest rate is less, the demand will be high and if the interest rate is high, the demand will be low. For hoarding, the theory explained that the desire for liquidity triggers hoarding by some people but such still has inverse relationship with interest rate. Same inverse relationship still exists in dissaving. For supply of loanable funds, the theory explained it under savings, dishoarding, disinvestment and bank credit. For savings, the theory explains that people will save more with high interest rate and less with low interest rate. Such positive relationship was also utilized to explain dishoarding and disinvestment. Bank credit was also explained as it affects loanable funds. Since the banks also create credit when they lend money out. The theory concluded that interest rate is determined by the point of equilibrium between demand for and supply of loanable funds.(b) Structure, conduct, performance paradigm explained relationship between market structure, market conduct and market performance. This theory is generally considered to be a superior theory to classical theory because of its inclusion of real as well as monetary factors, recognition of the role of bank credits as a constituent of money supply and its regard of money as an active factor in the determination of interest rate.

**Empirical Review**

[2] investigated the effects of financial sector deregulation on economic growth of Nigeria using annual data spanning from 1970 to 2015. Real Gross Domestic Product (RGDP) was made as a function of Credit to Private Sector (CPS), Financial Sector Deepening (FDP), Real Interest Rate (RINTR), Real Exchange Rate (REXGR) and when Bank of Nigeria Statistical Bulletin, National Bureau of Statistics. The data were analyzed using Co-integration for the existent of long-run relationship and Vector Error Correction Mechanism (VECM) for short-run dynamic of the model. The study concluded that the gain from financial sector deregulation in Nigeria has remained low in spite of the various reforms and institutional changes put in place by the monetary authorities. The study thus recommended an enhancement of private sector investment through financial sector credits and through a combination of macroeconomic stabilization policies which would surely enhance the performance of economic growth in Nigeria.

[3] examined the extent to which the economic deregulation policy impacted on the performance of the real sector in Nigeria. Annual data on the variables sourced from the publications of the Central Bank of Nigeria, were analyzed using the econometric technique of the Vector Error Correction Model. Evidence from the study indicates that exchange rate and trade openness exert significant positive impact on industrial output in Nigeria. The study also shows non-significant negative impact of financial deepening and inflation on Nigeria's industrial output. Government should stabilize the foreign exchange earning capacity of the economy through effective diversification of its revenue sources in order to enhance the performance of the sector.

[4] investigated on the effect of interest rate on commercial bank deposits in Nigeria. The study made use of secondary data sourced from the Central Bank of Nigeria statistical bulletin and the

National Bureau of Statistics between 2000 and 2013. The model for the study has as its dependent variable the Commercial Bank Deposits (CBD) while its explanatory variables were the interest rates and the Gross Domestic Product (GDP). Using the Ordinary Least Square (OLS) multiple regression techniques; the study revealed that there is a negative relationship between the interest rates and the commercial bank deposits suggesting that interest rates has not been responsible for customers deposits in commercial banks in Nigeria. The study, therefore recommended that adequate awareness be made by commercial banks to attract more of customers' deposits by educating on the measure of interest that will accrue to them when they deposit their funds with the commercial banks.

[5] on Interest Rate and Financial Performance of Banks in Pakistan employed Correlation and Regression analysis on interest rate changes, deposits with other banks, advances and loans and investment; return on assets, return on equity and earnings per share. The result shows that deposits with other banks and interest rate are negatively affecting the profitability of banks, while advances and loans and investment are having positive influence over profitability of banks. The research recommended that Government should make monetary policies which will increase the profitability of banks. But such policies were not defined.

[6] investigated on the effect of interest rate spread on the profitability of commercial banks in Ghana. The study measured interest rate spread using net interest income (IntSp) and net interest margin (NIM) and bank profitability using Return on Assets (ROA) and Return on Equity (ROE). The study is based on a sample of 24 banks over a ten-year period using a panel data. The results of the study show that there is a positive and statistically significant association between interest rate spread and bank profitability in Ghana. The findings suggested that the demand for loans exceed the supply of same allowing banks to charge higher interest on lending relative to deposits to increase profitability.

[7] examined the effects of Monetary Policy and control of money supply on the profitability of Deposit Money Banks (DMBs) in Nigeria from 1999 to 2016. Ordinary Least Linear Regression Analysis method was adopted for the study which employed SPSS statistical tool to run the correlation and regression analysis. Data gathered included Quasi Money (QM), Real Gross Domestic Product (RGDP), Exchange Rate (ER), Inflation (INF), Lending Interest Rate (LIR) Real Interest Rate (RIR) Domestic Credit to Private sectors (DCP), Currency in Circulation (CC) and Return on Assets (ROA). The findings revealed among others that; quasi money has insignificant positive relationship with profitability of DMBs, while currency in circulation has insignificant positive relationship with profitability of DMBs in Nigeria. The level of credit in the economy has significant negative relationship with profitability of DMBs. More so, inflation, exchange rate, and real GDP have insignificant relationship with the profitability of the banks.

[8] investigated on empirical Analysis of the Effect of Deregulation of Money Market Operations on the Performance of the Nigerian Economy. Data for the study were analyzed using the OLS multiple regression techniques and empirical estimation was carried out using E-views econometric software version 8.0. The findings show robust evidence of linear relationship. Results derived from empirical analysis are thought-provoking and a wakeup call for policy makers to get more committed to revitalizing the Nigerian money market for efficiency, effectiveness and more robust activities in the sector. The result revealed that money market deregulation have significant impact on the performance of the Nigerian economy within the period under reference.

[9] investigated on the relationship that exists between monetary policy instruments and Deposit Money Banks Loans and Advances in Nigeria. An annual time series data covering a period of 36years from 1981-2016 were sourced from Central Bank of Nigeria and used for the study. The study employed Toda and Yamamoto granger non-causality model to examine the relationship existing between Deposit Money Banks loan and advances and monetary policy variables in Nigeria. The study employed Toda and Yamamoto granger non-causality model to examine the relationship existing between Deposit Money Banks loan and advances and monetary policy variables in Nigeria. The findings revealed that structural changes in monetary policy system exerted positive significant impact on loan and advances of Deposit Money Banks in Nigeria. The study then recommended that monetary authority should formulate policies that will stabilize interest rate so as to boost the investors' confidence.

[10] examined the relationship between interest rate deregulation and fund mobilization of Deposit Money Banks (DMBs) in Nigeria between 1986 – 2016. Autoregressive Distributed Lag (ARDL) Bound Test technique was used to determine short and long run impacts of interest rate deregulation on fund mobilization of DMBs. The result showed that interest rate had insignificant impact, in the short run but significant impact in the long run. The study recommended that monetary authorities should concentrate towards reducing domestic inflation and increase money supply in order to improve fund mobilization of DMBs in Nigeria.

[11] X-ray's the interest rates regime in Nigeria as it affects the performance of the Nigerian Capital Market. In order to achieve this objective, relevant data for a period of 33 years spanning from 1981 – 2013 were obtained from the Fact book of the Nigerian Stock Exchange, CBN Statistical Bulletin as well as the annual accounts of quoted firms for the relevant years. The data obtained were analyzed using the Ordinary Least Square (OLS) technique. The result from the analysis reveal among others that changes in interest rate regimes have majorly influenced the level of the performance of the Nigerian Capital Market. The study therefore recommended that capital market regulators and other regulatory agencies should keep an eye on movements in interest rates and the Minimum Rediscount Rate (MRR) (now MPR) and watch their trend.

## METHODOLOGY

### Research Design

This study adopted the *expost-facto* research design, according to [12], It is an Ex-post facto research because the researcher makes use of existing data rather than new data gathered specifically for the study. The *expost-facto* research design is described as *after-the-fact research* [13]. This is suitable for the work given that it is based on an already completed event and the researcher is meant to analyses the outcomes of the already completed event and draw reasonable conclusions.

### Model Specification

The study follows the model of [4] who employed the autoregressive distributive lag-Bounds testing approach to study the impact of financial liberalization on economic growth in Nigeria, between 1969 and 2008. In this work, the direct model is stated thus:

$$TradeOpenness = f(EconomicGrowth)$$

With the reverse causation stated thus:

$$EconomicGrowth = f(TradeOpenness)$$

As a modification to the above, study introduces more financial liberalization in Agricultural variables other than economic growth and also adopts the Autoregressive Distributed Lag Model so as to capture both the baseline and lagged relationship among the variables under study. In the light of the above, the aggregated model for this study appears thus:

$Y_t = \beta_o + \beta_1 Xt + \beta_2 X_{t-1} + \beta_3 X_{t-2} + \beta_4 X_{t-3} + \beta_5 X_{t-4} \ldots\ldots\ldots\ldots\ldots\ldots\ldots \beta_n X_n + \varepsilon_t$

Where Y = Dependent variable

$X_1, X_2, X_3, X_4, X_5 \ldots\ldots X_n$ = the explanatory or independent variables

$\beta_0$ = Constant term.

$\beta_1, \beta_2, \beta_3$ =Proxies of the independent variables

$GDP_t = \beta_o + \beta_1 TOP_t + \beta_2 GDP_{t-1} + \beta_3 TOP_{t-2} + \beta_4 TOP_{t-3} + E_t$

Where

GDP =Gross domestic product, TOP= Trade openness

E = Stochastic error term.

βo = coefficient/Equilibrium point.

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ = Proxies.

t = time series data

$_{t-1,t-2,t-3,t-4}$ = Lag values of the variables

This work will be drafted into the above work thus:

$LNTADMB_t = \beta_o + \beta_1 LNINTRS_t + \beta_2 LNINTRD_t + \beta 3 LNINTRLt + \ldots\ldots E_t$

ARDL model will be drafted into this regression equation, thus:

$$LNTAMDBt = \beta_0 + \sum_{i=1}^{m} \beta_1 \Delta LNINTRS_{t-1} + \sum_{i=1}^{n} \beta_2 LNINTRD_{t-1} + \sum_{i=1}^{m} \beta_1 \Delta LNINTRL + \cdots \ldots \mu_t$$

LNTADMB =Log of Total assets of Deposit money banks

LNINTRS =log of Interest rate on savings

LNINTRD =log of Interest rate on Deposit

LNINTRL =log of Interest rate on lending

E = Stochastic error term.

βo = coefficient/Equilibrium point.

$\beta_1, \beta_2, \beta_3$, = Proxies.

t = time series data

$_{t-1,t-2,t-3,t-4}$ = Lag values of the variables

The aggregated model will be estimated following the ARDL framework either as a structural model or a vector and will also capture the short run form including the adjustment profile and error correction representations. The unbundled forms for the purposes of testing the formulated hypotheses appear thus:

**Hypothesis One**

Interest rate on savings did not impact positively and significantly on Total assets of money deposit banks in Nigeria.

$$LNTADMBt = \beta_0 + \sum_{i=1}^{n} \beta_1 LNINTRS_{t-1} + \mu_t$$

**Hypothesis Two**

Interest rate on deposit did not impact positively and significantly on Total assets of money deposit banks in Nigeria.

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$$TADMBt = \beta_0 + \sum_{i=1}^{n} \beta_1 LNINTRD_{t-1} + \mu_t$$

**Hypothesis Three**

Interest rate on lending did not impact positively and significantly on Total assets of money deposit banks in Nigeria.

$$LNTADMBt = \beta_0 + \sum_{i=1}^{n} \beta_1 LNINTRL_{t-1} + \mu_t$$

**Hypothesis Four**

There is no long run relationship existing between interest rate deregulation and the performance of deposit money banks in Nigeria

$$LNTAMDBt = \beta_0 + \sum_{i=1}^{m} \beta_1 \Delta LNINTRS_{t-1} + \sum_{i=1}^{n} \beta_2 LNINTRD_{t-1} + \sum_{i=1}^{m} \beta_1 \Delta LNINTRL + \cdots \ldots \mu_t$$

To ensure linearity and trimming down the data size without losing its real value, the variables were logged transformed. Given the design of the research, a special type of regression was used for this study called Auto regressive distributed lag model. (ARDL).This is because ARDL is a dynamic model.

**Techniques of Analyses**

The study will make use of ARDL regression analysis method. However, it will incorporate bound testing co-integration test in order to undertake a

thorough examination of the characteristics of time series economic data. The analytical procedures involved are; first, unit root test will be carried out for each of the variables so as to ascertain the time series properties of the data set and obtain the stationary status. Next, test of Cointegration will be performed in order to discover the long run relationship properties of the data, followed by ECM and Estimation analysis.

## RESULT PRESENTATION AND ANALYSIS

### Unit Root Test

This section presents and analyses the estimated results based on the model specified in the previous section. In order to conduct a comprehensive dynamic analysis preliminary unit roots tests are performed on the data. The importance of stationarity of time series used in regression borders on the fact that a non-stationary time series is not possible to generalize to other time periods apart from the present. The Augmented Dickey Fuller (ADF) test is employed in order to analyze unit roots.

**Table 1: The Augmented Dickey Fuller (ADF) test**

| Variables | ADF Test Statistics | 5% Critical value | Order of integration |
|---|---|---|---|
| LNTADMB | -4.605317 | -3.595026 | I(1) |
| LNINTRS | -5.634792 | -3.580623 | I(1) |
| LNINTRD | -6.055167 | -3.587527 | I(1) |
| LNINTRL | -3.929503 | -2.967767 | I(0) |

The Augmented Dickey-Fuller (ADF) test for stationarity at 5% level of significance shows that in log of Interest rate on lending (LNINTRL), there is no unit root problem as the variable is stationary at levels form. In Log of Total assets of Deposit money banks (LNTADMB), log of Interest rate on savings (LNINTRS) and log of Interest rate on Deposit (LNINTRD) variables, there are unit root problem in the variables as they are not stationary at level form. However, the variables became stationary at the same order of integration (first difference). This implies that we cannot use the variables as they are for time series OLS regression, given that one of the conditions of time series regression is that the variables must be stationary. Where a unit root problem is found in the model, a co-integration test will be done to determine the existence of a long-run relationship between variables and followed by an error correction model in order to adjust the short-run disequilibrium to long-run equilibrium.

### Test of Cointegration

According to [1] a regression involving non-stationary time series variables will produce spurious (non- meaningful) results. But if such variables are cointegrated, having long run relationship, the result will therefore be acceptable. Econometrically speaking, two variables will be co-integrated if they have a long run equilibrium relationship between them [5]. To test for co-integration among the variables, since we have mixture of I (0) and I(1),we will use Bounds Testing Approach. According to [8], bounds testing procedure is a powerful statistical tool in the estimation of level relationships when the underlying property of time series is entirely I(0), entirely I(1) or jointly co-integrated.

**Table 2: The cointegration test result is as follows**

ARDL Bounds Test
Date: 12/28/19 Time: 10:12
Sample: 1990 2018
Included observations: 29
Null Hypothesis: No long-run relationships exist

| Test Statistic | Value | k |
|---|---|---|
| F-statistic | 28.05277 | 3 |
| Critical Value Bounds | | |
| Significance | I0 Bound | I1 Bound |
| 10% | 2.01 | 3.1 |
| 5% | 2.45 | 3.63 |
| 2.5% | 2.87 | 4.16 |
| 1% | 3.42 | 4.84 |

Bounds Testing co-integration was carried out using Eviews 9.statistical software package; From the result , F-statistic value is 28.05277 which is greater than lower bound $I_0$ (2.45) at 5% level of significance and the upper bound $I_1$(3.63) at same level of significance. Hence there is long run relationship between the variables.

**Table 3: Cointegrating And Long Run Form**

ARDL Cointegrating And Long Run Form
Dependent Variable: LNTADMB
Selected Model: ARDL(1, 0, 0, 0)
Date: 12/28/19 Time: 10:10
Sample: 1989 2018
Included observations: 29

Cointegrating Form

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| D(LNINTRS) | -0.044795 | 0.072462 | -0.618182 | 0.5420 |
| D(LNINTRD) | 0.123323 | 0.109348 | 1.127804 | 0.2701 |
| D(LNINTRL) | 0.061865 | 0.124483 | 0.496977 | 0.6235 |
| CointEq(-1) | -0.023829 | 0.019951 | -1.194384 | 0.2435 |

Cointeq = LNTADMB - (-1.8799*LNINTRS + 5.1754*LNINTRD + 2.5962 *LNINTRL )

Long Run Coefficients

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| LNINTRS | -1.879850 | 2.259676 | -0.831912 | 0.4133 |
| LNINTRD | 5.175368 | 7.094538 | 0.729486 | 0.4725 |
| LNINTRL | 2.596234 | 3.602268 | 0.720722 | 0.4778 |

(i) From the result above Interest rate on savings (LNINTRS) is negatively related to Total assets of Deposit money banks (LNTADMB) but in the short run and in the long run. A unit change in Interest rate on savings (LNINTRS) will lead Total assets of Deposit money banks (LNTADMB) to decrease by 0.044795 in the short run and in the long run it will lead to a decrease by 1.879850.

(ii) Interest rate on Deposit (LNINTRD) is positively related to the Total assets of Deposit money banks (LNTADMB) both in the short run and in the long run. A unit change in Interest rate on Deposit (LNINTRD) will lead to increase in Total assets of Deposit money banks (LNTADMB) by 0.123323 in the short run and 5.175368 increases in the long run

(iii) Interest rate on lending (LNINTRL) is positively related to the Total assets of Deposit money banks (LNTADMB) both in the short run and in the long run. A unit change in Interest rate on lending (LNINTRL) will lead to increase in Total assets of Deposit money banks (LNTADMB) by 0.061865 in the short run and 2.596234 increases in the long run

(iv) The error correction coefficient, which indicates the speed of adjustment, has a negative sign. This is expected as it is the condition for accepting the model. From the result of the model presented above, the ECM is -0.023829 which means that the speed of adjustment in the short run is 2%.

**Test of Hypotheses**

Hypothesis I

$H_0$1: Interest rate on saving deregulation does not have positive and significant impact on performance of deposit money banks in Nigeria, from the regression analysis (in 4.3), Interest rate on savings (LNINTRS) is negatively related to Total assets of Deposit money banks (LNTADMB) in Nigeria both in the short run and in the long run, Therefore, we fail to reject the null hypothesis.

Hypothesis II

$H_0$2: Deposit interest rate deregulation does not have positive and significant impact on performance of deposit money banks in Nigeria. From the regression analysis (in 4.3), Interest rate on Deposit (LNINTRD) is positively related to the Total assets of Deposit money banks (LNTADMB) in Nigeria both in the short run and in the long run. Therefore, we reject the null hypothesis and conclude that Deposit interest rate deregulation have positive and significant impact on performance of deposit money banks in Nigeria.

Hypothesis III

$H_0$3: Lending interest rate deregulation does not have positive and significant impact on performance of deposit money banks in Nigeria. From the regression analysis (in 4.3), Interest rate on lending (LNINTRL) is positively related to the Total assets of Deposit money banks (LNTADMB) in Nigeria both in the short run and in the long run. Therefore, we reject the null hypothesis and conclude that lending interest rate deregulation have positive and significant impact on performance of deposit money banks in Nigeria.

Hypothesis IV

$H_0$4: Interest rate deregulation does not have any long run relationship on the performance of deposit money banks in Nigeria, From the ARDL Bound test analysis (in 4.2.1), there is long run relationship between Interest rate deregulation and performance of deposit money banks in Nigeria. F-statistic value is 28.05277 which is greater than lower bound $I_0$ (2.45) at 5% level of significance and the upper bound $I_1$(3.63) at same level

of significance. Therefore, we reject the null hypothesis and conclude that there is long run relationship between Interest rate deregulation and performance of deposit money banks in Nigeria.

## SUMMARY OF FINDINGS

The work examined the impact of Interest rate deregulation on the performance of deposit money banks in Nigeria captured with data from 1989-2018.

- The Augmented Dickey-Fuller (ADF) test for stationarity at 5% level of significance shows that in log of Interest rate on lending (LNINTRL), there is no unit root problem as the variable is stationary at levels form. In Log of Total assets of Deposit money banks (LNTADMB), log of Interest rate on savings (LNINTRS) and log of Interest rate on Deposit (LNINTRD) variables, there are unit root problem in the variables as they are not stationary at level form. However, the variables became stationary at the same order of integration (first difference).
- From the result of Bounds Testing co-integration carried out , F-statistic value is 28.05277 which is greater than lower bound $I_0$ (2.45) at 5% level of significance and the upper bound $I_1$(3.63) at same level of significance. Hence there is long run relationship between the variables.
- Interest rate on savings (LNINTRS) is negatively related to Total assets of Deposit money banks (LNTADMB) both in the short run and in the long run. A unit change in Interest rate on savings (LNINTRS) will lead Total assets of Deposit money banks (LNTADMB) to decrease by 0.044795 in the short run and in the long run it will lead to a decrease by 1.879850.
- Interest rate on Deposit (LNINTRD) is positively related to the Total assets of Deposit money banks (LNTADMB) both in the short run and in the long run. A unit change in Interest rate on Deposit (LNINTRD) will lead to increase in Total assets of Deposit money banks (LNTADMB) by 0.123323 in the short run and 5.175368 increases in the long run
- Interest rate on lending (LNINTRL) is positively related to the Total assets of Deposit money banks (LNTADMB) both in the short run and in the long run. A unit change in Interest rate on lending (LNINTRL) will lead to increase in Total assets of Deposit money banks (LNTADMB) by 0.061865 in the short run and 2.596234 increases in the long run
- The error correction coefficient, which indicates the speed of adjustment, has a negative sign. This is expected as it is the condition for accepting the model. From the result of the model presented above, the ECM is -0.023829 which means that the speed of adjustment in the short run is 2%.

## RECOMMENDATIONS

Following from the research findings above, it is recommended that;

- The negative relationship between the savings rate and total assets of the banks shows that the savings rate in the nation is weighing down the performance of the deposit money banks in Nigeria, therefore it is advised that the banks and the government should advance more the financial literacy programme or awareness so as to educate people on benefits of forgoing some consumption for savings and also the banks should increase the interest on customers savings.
- The Bankers committee should be part of the monetary policy committee that sets monetary

policy rate, since such influences monetary policy rate

- The performance of banks are not wholly dependent on interest rate, the banks are encouraged to diversify their level of investments in other sectors of the economy, such will increase their total assets and improve the economy performance.

REFERENCES


1. Adeniyi, A.M., Kayode, A.K. ,Sakirat, S.O. and Olamide, F.T.(2018). Monetary Policy and Bank Credit in Nigeria: A Toda-Yamamoto Approach , *acta universitatis danubius 14, 5.*
2. Adeusi, S. O., Dada, O., and Adeosun, O. A. (2018). Effect Of Financial Sector Deregulation On Economic Growth Of Nigeria. *International Journal of Academic Research in Business And Social Sciences, 8(9), 1119–1132.*
3. Afza, A., Raja, R., Imran, U. C. and Saima, S.(2018). Interest Rate and Financial Performance of Banks in Pakistan, *International Journal of Applied Economics, Finance and Accounting . 2( 1), 1-7.*
4. Alhassan, M. D., Anokye, F. K and Gakpetor, E.D. (2018).Impact of interest rate spread on bank profitability in Ghana, *European Journal of Business, Economics and Accountancy 6(1).*
5. Anyanwaokoro, M. and Madukwe, O.D. (2014). The Causal relationship between life insurance business and economic growth in Nigeria*, International Journal of Innovation and Scientific Research, 4 (2), 100-109*
6. Arikewuyo, K. A. and Akingunola R. O. (2019). Impact of Interest Rate Deregulation on Fund Mobilisation of Deposit Money Banks in Nigeria. *Izvestiya Journal of Varna University of Economics. 63 (2). 89 - 103.*
7. Edirin,J. and Ekwueme, C. M. (2015). Interest rate regime and the performance of the Nigerian capital market, *Studies and Scientific Researches. Economics Edition, 22,*
8. Isiwu.G.D.,Okoh, A.S.,Ojiya,E.A. and Mamman, A.B.(2017). An Empirical Analysis of the Effect of Deregulation of Money Market Operations on the Performance of the Nigerian Economy,*International Journal of Scientific Research and Management (IJSRM) ,5(11),7495-7507.*
9. Makinde, H. O. (2016). Effect of Interest Rate on Commercial Bank Deposits in Nigeria, Proceeding of the First American Academic Research Conference on Global Business, Economics, Finance and Social Sciences *(AAR16 New York Conference) Paper ID: N644.*
10. Okaro, C. S. (2016). Monetary Policy, the control of money supply and its effects on the profitability of deposit money banks in Nigerian, *Journal of Social Development, 5(5).*
11. Okoye, L. U., Nwakoby, C. I. N. and Okorie, E. U. (2016). Deregulating the Nigerian Economy for Enhanced Real Sector Growth. *Journal of Policy and Development Studies, 10(2), 144-158.*
12. Onwumere, J. U. J., Okore, O. A., Ibe, I. G. (2012), The Impact of Interest Rate Liberalization on Savings and Investment: Evidence From Nigeria, *Research Journal Of Finance and Accounting, 3(10), 130-136.*
13. Owusu, E.L. and Odhiambo,N.M. (2014) Financial liberalization and economic growth in Nigeria: an ARDL-bounds testing approach, *Journal of Economic Policy 2(4).*