

## Empirical Analysis of the Effect of Lending Interest Rate Deregulation on the Performance of Deposit Money Banks in Nigeria and the Cointegration Relationship Existing between Interest Rate deregulation and the Performance of Deposit Money Banks in Nigeria.

Odeigah Ernest

Department of Banking and Finance Faculty of Management Sciences Enugu State University of Science and Technology (ESUT), Enugu, Nigeria.

---

### ABSTRACT

This paper examined the impact of interest rate deregulation on the performance of deposit money banks in Nigeria for the period of 1989-2018. Its objective centered on impact of savings interest rate deregulation, deposit interest rate deregulation, and lending interest rate deregulation on the total assets of deposit money banks in Nigeria. The study equally extended to ascertaining the long-run relationship between interest rate deregulation and performance of deposit money banks in Nigeria. Research design adopted was ex-post facto design, while analytical tools employed were descriptive statistics and Auto-regressive distributed lag (ARDL) model regression techniques. Finding revealed that savings interest rate deregulation (LNINTRS) impact negatively on total assets of deposit money banks while deposit interest rate deregulation (LNINTRD) and lending interest rate deregulation (LNINTRL) exert positive but insignificant influence on total assets of deposit money banks in Nigeria. The implication is that lending and deposit rates are positive indices of banking sector while savings is a negative index to the Nigerian banking sector. Also, this study established that there is 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). Based on these findings, the study recommended among other things that banks should improve their total asset turnover and diversify in such a way that they can generate more income on their assets and adequate efforts should be made by banks to increase their level of investments as that would help in generating reasonable returns on their assets. The bank regulatory authorities need to ensure that certain policy tools such as the money supply, liquidity ratio, lending rate, monetary policy rate are effectively managed to enhance good corporate governance and better performance of the banking industry.

Keywords: Deregulation, banks, deposit, savings and interest rate.

---

### INTRODUCTION

Although officially the banks are under deregulation period, interest rate in Nigeria is still indirectly regulated. [1] defined interest rate deregulation as a situation whereby interest rate is determined by the forces of demand and supply. Banks pay deposit rate on deposits mobilized and charge lending rate on credits given to customers in order to make profit. The level of profit depends on the spread between lending rate and deposit rate. 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. As at 2018, the MPR was 14 % according to [2]. This means that banks in Nigeria cannot afford to lend at single digit rate. 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.

The financial system plays a vital role in the economic growth of any country by providing the platform through which funds are mobilized from savings-surplus economic units to savings-deficit economic units which in turn are translated to investments and growth. The performance of the deposit money Banks in Nigeria largely depends on total savings deposits in the sector and this accounts for the main reason banks set their staff on a high target of deposits to sustain their operations [3].

[4], the period (1959-1969) marked the establishment of formal money, capital markets and portfolio management in Nigeria. In addition, the Company Acts of 1968 were established. This period could be said to be the genesis of serious banking regulation in Nigeria. With the CBN in operation, the minimum paid-up capital was set at 400,000 (USD\$480,000) in 1958. By January 2001, banking sector was fully deregulated with the adoption of universal banking system in Nigeria which merged merchant bank operations with commercial banks system preparatory to the consolidation programme in 2004. Financial Deregulation and liberalization is a matter of degree, and does not imply a shift to total laissezfaire. It entails the removal or relaxation of regulations affecting the type of business financial firms may undertake, the type of firms permitted to deal in the particular markets, or the terms on which dealing is allowed. Regulations which have been relaxed include controls on interest rates at which banks can lend or borrow, controls on operations by banks outside their country of registration and restrictions on the types of business particular financial institutions can transact, direct credit abolition and exchange rate deregulation. Deregulation has been favored as it leads to more competition and efficiency gains, causing both developed and developing economies to incorporate such policies into their Structural Adjustment Programs (SAP, 1986 for Nigeria) as opposed to its opposite; financial regulation or repression. The Nigerian financial sector is undoubtedly the most important in the

political economic system because it provides the necessary lubricant that keeps the wheel of the economy turning and it is an engine for economic growth. The sector provides fund for investment and also allocates these funds for investment as efficiently as possible to those projects that offer best returns to fund owners. The well-being of the sector, to a very large extent, determines a growing economy. However, if the sector happens to be weak, the economy suffers for it. This research will use empirical method to analyze the impact of interest rate deregulation policy on the performance of deposit money banks in Nigeria, so as to help direct the monetary policy authorities in Nigeria on how best to approach interest rate policies in Nigeria. Such will reposition the banking sector for a greater economic benefit to the economy in general.

There is no doubt that banks and other financial institutions occupy strategic positions in the operation of our economic system. Interest rate deregulation as conceived and implemented by the Nigerian government was aimed at opening up the banking sector to high private sector participation so as to drive the economy positively. The importance of these banks and other financial institutions are so encompassing that one may not imagine the functionability of the economic system without them [5]. But since the commencement of the policy in 1986, the banking sector has not shown any improvement linked to deregulation, rather improvements in the sector are mainly from other Policy actions of the Central Bank of Nigeria.

Interest rate is one of the important terms in the lending decision process of commercial banks. Interest rates are the rental payments for the use of credit by borrowers and return for parting with liquidity by lender and depositors. These are categorized as lending rate and deposit rate respectively. Like other prices, interest rates perform a rationing function by allocating limited supply of credit among the many competing demands for it [6]. The lending interest

rate is the percentage of the loan amount that the lender charges to lend money. When banks lend money to customers, interest is charged on it for a number of reasons, including value preservation, compensation for risk, and profits among others [7].

Commercial banks are independent business entities that set their own lending rates. Commercial banks can increase their profit margins through higher lending rates and lower deposit rates. Lending, which may be on short, medium or long-term basis, is one of the services that deposit money banks do render to their customers. 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 for policy makers, the banking industry and the public at large.

According to [8], profitability of banks has relationships with growth and development of the economy. Deposit money banks are the most important savings and mobilization of financial resources and allocating them to productive investment and in return promote their performance [9]. Deposit money banks' decisions to give out loans are influenced by a lot of factors, such as the prevailing interest rate, the volume of deposits, the level of their domestic and foreign investment, banks liquidity ratio, prestige and public recognition, to mention just but a few [10]. Deposit money banks are the most important savings, mobilization and financial resource allocation institutions. Consequently, these roles make them an important phenomenon in economic

growth and development. In performing this role, it must be realized that banks have the potential, scope and prospects for mobilizing financial resources and allocating them to productive investments and in return promote their performance. Therefore, no matter the sources of the generation of income or the economic policies of the country, deposit money banks would be interested in giving out loans and advances to their numerous customers bearing in mind, the three principles guiding their operations which are profitability, liquidity and solvency [11].

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 general, including considerable influence on inflation rate, and performance of the real sector, mainly agriculture and manufacturing sector which the economy depends on to generate employment and revenue for economic wellbeing of the nation. Banks in their bid to enhance business tend 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 rates 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.

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

Since the debate is ongoing, it is our interest to examine the impact of interest rate deregulation on the performance of DMBs in Nigeria for the period 1989 to 2018 by categorizing the interest rates on

savings, deposits and lending using both base line and bound test of Auto-Regressive Distributed Lag Model (ARDL) to analyze this work. The findings of this work will either agree with the findings of the previous researchers or give entirely a new finding on this topic.

### **Objectives of the Study**

The objective of this research was to examine the empirical analysis of the effect of lending interest rate deregulation on the performance of deposit money banks in Nigeria and the cointegration relationship existing between interest rate deregulation and the performance of deposit money banks in Nigeria. The specific objectives of the study were to:

- Ascertain the effect of lending interest rate deregulation on the performance of deposit money banks in Nigeria.
- 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;

### **Research Design**

This study adopted the *ex-post 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 *ex-post facto* research design is described as *after-the-fact research* [3]. 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.

### **Nature and Sources of Data**

All the data to be employed for this work were time series, secondary and purely quantitative. They are drawn from sources such as Statistical Bulletins of Central Bank of Nigeria. They are annualized time series

- To what extent had lending interest rate deregulation impact on the performance of deposit money banks in Nigeria?
- To what extent had interest rate deregulation and the performance of deposit money banks in Nigeria relates in the long run?

### **Statement of the Hypotheses**

The hypotheses for this study were presented in null form as follows:

- i) Lending interest rate deregulation did not have positive and significant impact on performance of deposit money banks in Nigeria.
- ii) Interest rate deregulation did not have any long run relationship on the performance of deposit money banks in Nigeria.

### **Significance of the Study**

This study will be useful to the following group of people.

#### **Policy Makers**

This study will send some key signals to policy makers and underscore the essence of putting policies in place that will propel economic growth through adequate management of trade policies. It will stress the needs to focus attention on how to examine the various deregulatory networks rather than seeking for more credit to the private sector from banks.

## METHODOLOGY

data because they have a natural time ordering covering the period 1989 to 2018.

### **Model Specification**

The study follows the model of [12] 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

Odeigah

INOSR ARTS AND HUMANITIES 6(1): 35-50, 2020

light of the above, the aggregated model for this study appears thus:

$$Y_t = \beta_0 + \beta_1 X_t + \beta_2 X_{t-1} + \beta_3 X_{t-2} + \beta_4 X_{t-3} + \beta_5 X_{t-4} + \dots + \beta_n X_t + \varepsilon_t$$

Where Y = Dependent variable

X<sub>1</sub>, X<sub>2</sub>, X<sub>3</sub>, X<sub>4</sub>, X<sub>5</sub>.....X<sub>n</sub> = the explanatory or independent variables

β<sub>0</sub> = Constant term.

β<sub>1</sub>, β<sub>2</sub>, β<sub>3</sub> = Proxies of the independent variables

$$GDP_t = \beta_0 + \beta_1 TOP_t + \beta_2 GDP_{t-1} + \beta_3 TOP_{t-2} + \beta_4 TOP_{t-3} + E_t$$

Where

GDP =Gross domestic product, TOP= Trade openness

E = Stochastic error term.

β<sub>0</sub> = coefficient/Equilibrium point.

β<sub>1</sub>, β<sub>2</sub>, β<sub>3</sub>, β<sub>4</sub>, β<sub>5</sub> = 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:

$$LNTADMB_t = \beta_0 + \beta_1 LNINTRS_t + \beta_2 LNINTRD_t + \beta_3 LNINTRL_t + \dots + E_t$$

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

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

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<sub>t</sub> = Stochastic error term.

β<sub>0</sub> = coefficient/Equilibrium point.

β<sub>1</sub>, β<sub>2</sub>, β<sub>3</sub>, β<sub>4</sub>, β<sub>5</sub> = 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 lending did not impact positively and significantly on Total assets of money deposit banks in Nigeria.

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

#### Hypothesis Two

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

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

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.

#### Unit Root Test for Stationary

Unit root test or stationary test is a preliminary test done to prevent running a spurious regression. It is equally done

to ensure that the assumptions of the classical linear regression model (CLRM) are fulfilled. Unit root test is used to ensure that all the time series data have a Constant mean, constant variance and constant covariance.

The augmented dickey-fuller (ADF) test would be ditched in favour of the dynamic Philip and Peron stationary test statistics where the critical value at 5% the variables is said to be stationary, otherwise it is non-stationary (values are

checked in absolute). A variable is stationary of the order in which its PP test statistic is greater in absolute value than the PP critical values at different levels of significance.

#### Co-integration test

To ascertain the long-run relationship between the dependent and independent variables, the study past tense bound testing co-integration. The rule states that is if the F-Statistics is greater than the Critical Value Bounds (upper and lower bound) at the chosen level of significance, that there is Co-integration. The approach offers some desirable statistical advantages over other cointegration techniques. While other co-integration techniques require all the variables to be integrated of the same order, bound test

procedure provides valid results whether the variables are I(0) or I(1) or mutually co-integrated and provides very efficient and consistent test results in small and large sample sizes. The different order of integration makes bound test the preferred approach in this study.

#### The Error Correction Mechanism

This study used Error Correction Model (ECM) to capture the short run properties. The error correction term must be negative. In order to test for the dynamic relationship between the variables in the model, the study compares the speed of adjustment using the ECM mechanism. If the ECM term is positive, it means that it is not in equilibrium. The ECM term is expected to be negative and significant so as to determine the convergences.

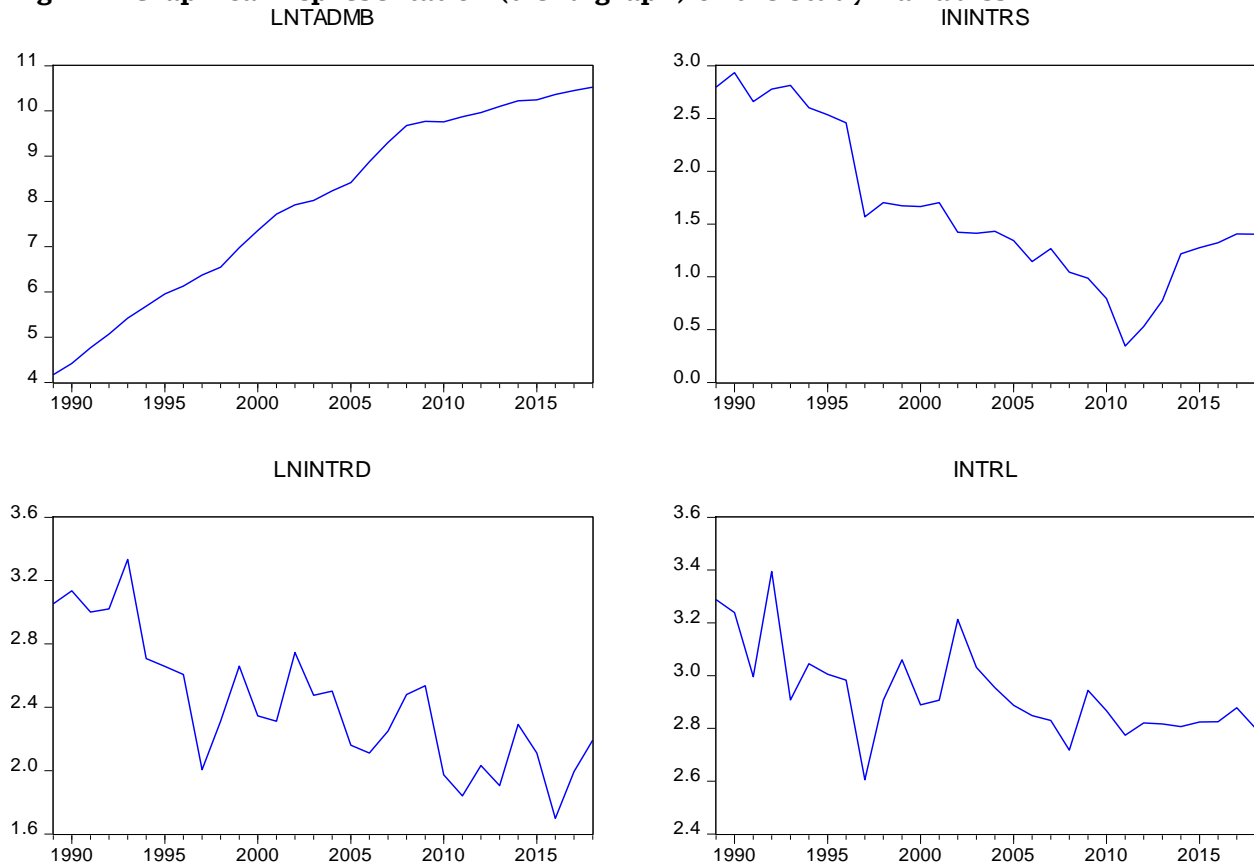
### Presentation and Analysis of Results

**Table 1: Annualized time series data of the study variables (1989-2018)**

Year	TADMB	LNTADMB	INTRS	ININTRS	INTRD	LNINTRD	INTRL	INTRL
1989	64.87	4.17238527	16.40	2.79728133	21.20	3.05400118	26.80	3.28840189
1990	82.96	4.41835856	18.80	2.93385687	23.00	3.13549422	25.50	3.23867845
1991	117.51	4.76652344	14.29	2.65955999	20.10	3.00071982	20.01	2.99623215
1992	159.19	5.07009846	16.10	2.77881927	20.50	3.02042489	29.80	3.39450839
1993	226.16	5.42124271	16.66	2.81301064	28.02	3.33291854	18.32	2.90799336
1994	295.03	5.68707705	13.50	2.60268969	15.00	2.7080502	21.00	3.04452244
1995	385.14	5.9536069	12.61	2.53449015	14.27	2.65815943	20.18	3.00469201
1996	458.78	6.12857079	11.69	2.45873378	13.55	2.60638655	19.74	2.98264703
1997	584.38	6.37055146	4.80	1.56861592	7.43	2.00552586	13.54	2.60564827
1998	694.62	6.54336493	5.49	1.70292826	10.09	2.31154483	18.29	2.90635446
1999	1,070.02	6.97543262	5.33	1.67335124	14.30	2.66025954	21.32	3.0596456
2000	1,568.84	7.35809177	5.29	1.66581825	10.44	2.34564458	17.98	2.88926003
2001	2,247.04	7.71736907	5.49	1.70292826	10.09	2.31154483	18.29	2.90635446
2002	2,766.88	7.92547561	4.15	1.42310833	15.57	2.74534599	24.85	3.21285775
2003	3,047.86	8.02219498	4.11	1.41342303	11.88	2.47485631	20.71	3.03061668
2004	3,753.28	8.2303854	4.19	1.43270073	12.21	2.50225529	19.18	2.95386807
2005	4,515.12	8.41518704	3.83	1.3428648	8.68	2.16102153	17.95	2.88759011
2006	7,172.93	8.8780695	3.14	1.1442228	8.26	2.11142459	17.26	2.84839169
2007	10,981.69	9.30398462	3.55	1.2669476	9.49	2.25023861	16.94	2.82967769
2008	15,919.56	9.67530382	2.84	1.04380405	11.95	2.48073128	15.14	2.71734025
2009	17,522.86	9.77126159	2.68	0.98581679	12.63	2.53607494	18.99	2.94391252
2010	17,331.56	9.7602844	2.21	0.79299252	7.19	1.97269117	17.59	2.86733056
2011	19,396.63	9.87285462	1.41	0.3435897	6.30	1.84054963	16.02	2.77383794
2012	21,288.14	9.96590539	1.70	0.53062825	7.63	2.03208785	16.79	2.82078347
2013	24,301.21	10.0982814	2.17	0.77472717	6.72	1.90508815	16.72	2.81660561
2014	27,526.42	10.2229015	3.38	1.21787571	9.89	2.29152415	16.55	2.8063861
2015	28,173.26	10.2461286	3.58	1.2753628	8.26	2.11142459	16.85	2.82435066
2016	31,682.82	10.3635299	3.75	1.32175584	5.46	1.69744879	16.87	2.8255369
2017	34,593.89	10.4514324	4.08	1.40609699	7.34	1.99333884	17.78	2.87807423
2018	37,206.99	10.5242519	4.07	1.403643	8.96	2.19277023	16.44	2.79971739

DATA ANALYSIS

Fig. 1: Graphical Representation (trend graph) of the Study Variables

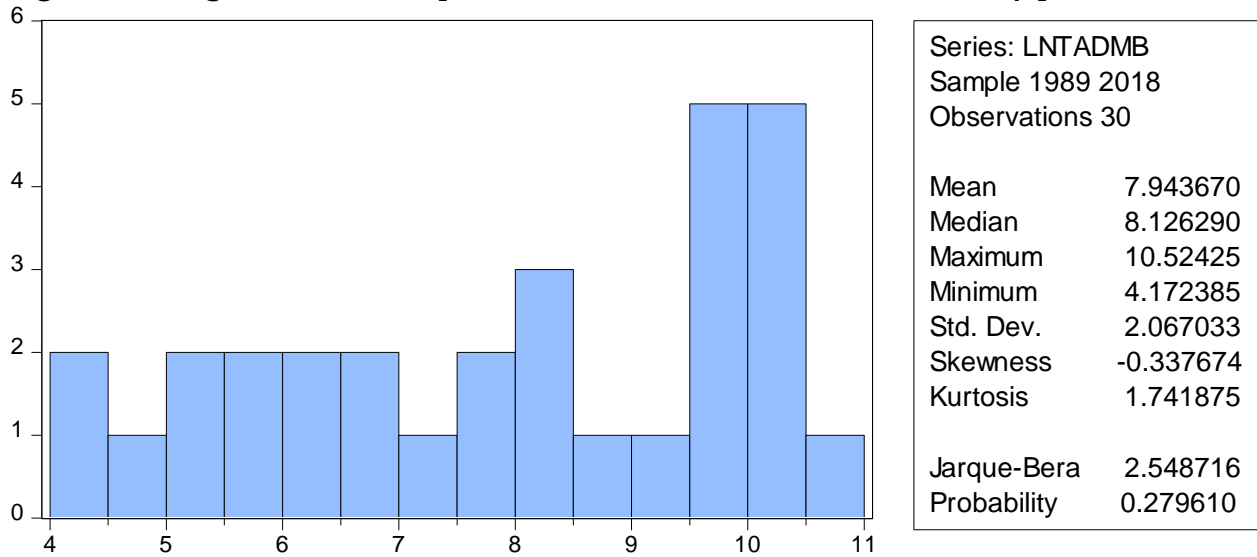


Source: Author's computation

The graphical representation (line graph) as shown in figure 1 above shows that the series of total assets of deposit money banks (LNTADMB) is on a steady rise over the period. The savings interest rate deregulation (LNINTRS) decline (roughly

from 1990 to 2011 and rose in 2012 through 2018. The series of deposit interest rate deregulation (LNINTRD) and lending interest rate deregulation (LNINTRL) exhibit a random (zig-zag) pattern over the period.

**Fig. 2 Histogram and Descriptive Statistics of LNTADMB for the study period**

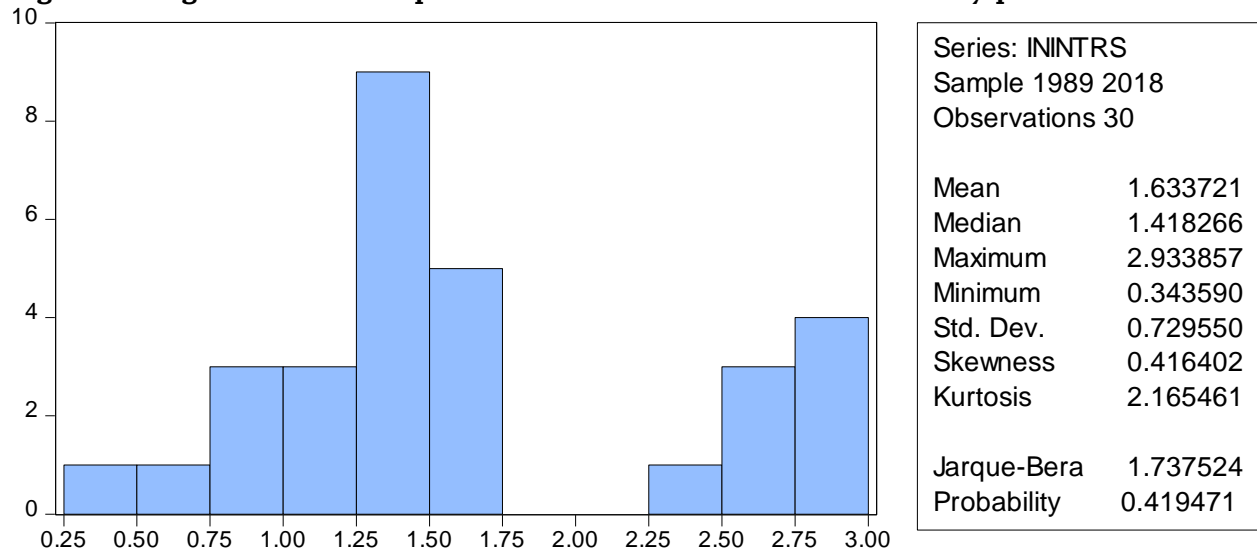


**Source:** Author's computation

From the measures of symmetry and peakedness of the distribution (skewness and kurtosis), total assets of deposit money banks is negatively skewed (sk = -0.34) and without excess kurtosis (k=1.74 < 3.00). The Jarque-Bera goodness of fit test result shows that the series of the

total assets of deposit money banks (LNTADMB) follows normal distribution (J-B stat. = 2.549, p=0.2796). The standard deviation which measures the spread of the data series from the mean indicates that the series of LNTADMB are volatile.

**Fig. 3 Histogram and Descriptive Statistics of LNINTRS for the study period**



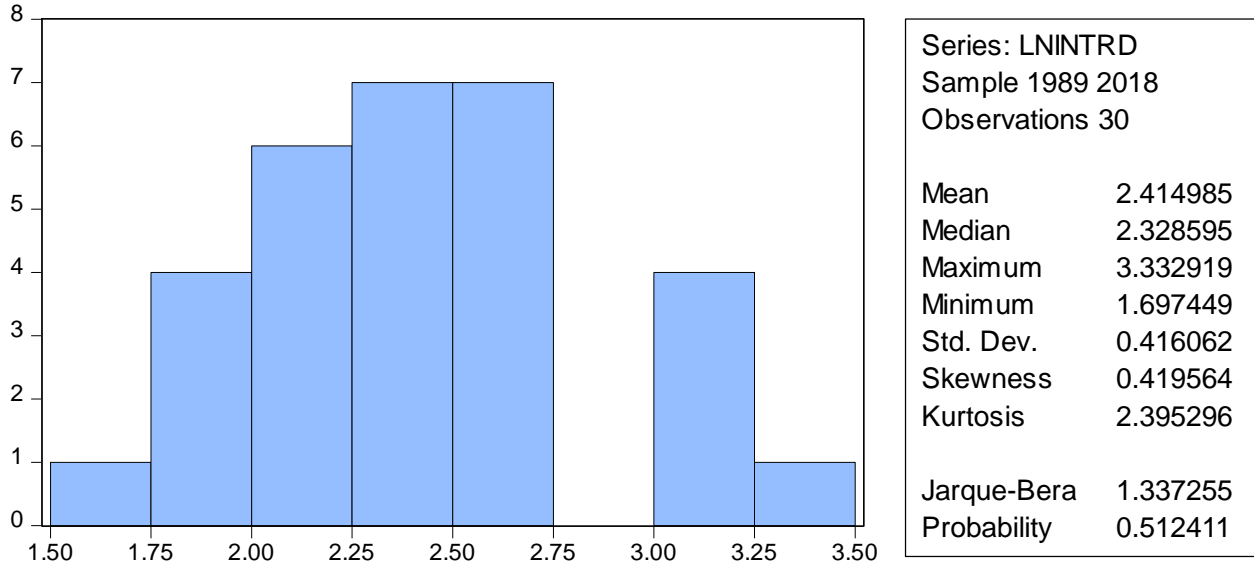
**Source:** Author's computation

The savings interest rate deregulation stood at average of 1.634 with a standard deviation of 0.730. This implies that the series of LNINTRS do not cluster around the mean. The skewness and kurtosis

estimates of 0.42 and 2.17 respectively indicate that distribution of LNINTRS is positively skewed and without excess kurtosis. However, the Jarque-Bera goodness of fit test result (J-B stat. =

1.738,  $p=0.4194 > 0.05$ ) indicates that the series follows normal and smooth distribution

**Fig. 4 Histogram and Descriptive Statistics of LNINTRD for the study period**

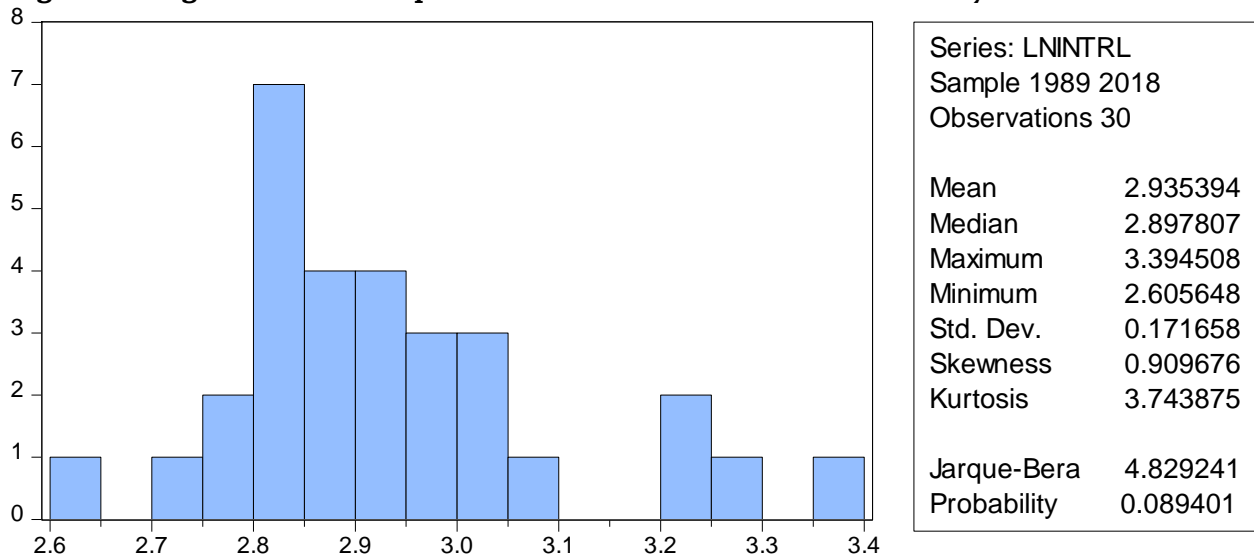


**Source:** Author's computation using E-views 10 econometric package

The descriptive statistics result as shown in figure 3 above indicates that the series of deposit interest rate deregulation is positively skewed ( $sk=0.42$ ) without excess kurtosis ( $k=2.40$ ). The Jarque-Bera

statistic value of 1.337 and associated probability value of  $0.5124 > 0.05$  indicates that the series of deposit interest rate deregulation (LNINTRD) follows normal and smooth distribution.

**Fig. 5 Histogram and Descriptive Statistics of LNINTRL for the study riod**



**Source:** Author's computation (2020)

The lending interest rate deregulation is skewed to the right and platykurtic (having positive excess kurtosis). From the descriptive result as shown in figure 4

above, the series of lending interest rate deregulation is not highly volatile (with a standard deviation of 0.172). The Jarque-Bera goodness of fit statistic value of

4.829 and associated probability value of 0.0894>0.05 indicates that the series

### 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

distribution align with normal curve.

generalize to other time periods apart from the present. This makes forecasting based on such time series to be of little practical value. Moreover, regression of a non-stationary time series on another non-stationary time series may produce spurious result. The Augmented Dickey Fuller (ADF) test is employed in order to analyze unit roots.

**Table 2: 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 [8] 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 [4]. 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 [11], 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 3: 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	

**Source:** Author's extract from Eviews result

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 4: 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

**Source:** Author's extract from Eviews result

From the result above Interest rate on savings (LNINTRS) is negatively and insignificantly 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 to about 0.044795 unit decreases in Total assets of Deposit money banks (LNTADMB) in the short-run and about 1.8799 unit decreases in Total assets of Deposit money banks (LNTADMB) in the long-run.

Interest rate on Deposit (LNINTRD) impacts positively and insignificantly on the Total assets of Deposit money banks

(LNTADMB) both in the short-run and in the long-run (Coeff.=0.123323 and 5.1754 respectively). A unit change in Interest rate on Deposit (LNINTRD) will lead to about 0.123323 increases in Total assets of Deposit money banks (LNTADMB) in the short-run and 5.175368 increases in the long-run.

Interest rate on lending (LNINTRL) is positively and insignificantly 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

Odeigah

INOSR ARTS AND HUMANITIES 6(1): 35-50, 2020

banks (LNTADMB) by 0.061865 in the short run and 2.596234 increases in the long run.

The error correction coefficient (ECM(-1) = -0.023829) appear with expected (negative) sign. The result shows that about 2.4% of the disequilibrium between interest rate and total asset of deposit money banks can be corrected in one year. The implication is that equilibrium state between the two groups of variables can be attained in the next five years.

**Table 5: Estimated long-run impact of lending interest rate deregulation on total assets of deposit money banks in Nigeria**

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(LNINTRL)	0.061865	0.124483	0.496977	0.6235
D(LNINTRS)	-0.044795	0.072462	-0.618182	0.5420
D(LNINTRD)	0.123323	0.109348	1.127804	0.2701
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.
LNINTRL	2.596234	3.602268	0.720722	0.4778
LNINTRS	-1.879850	2.259676	-0.831912	0.4133
LNINTRD	5.175368	7.094538	0.729486	0.4725

**Source:** Author's extract from Eviews result

**Interpretation of Result:** From the regression analysis, lending interest rate deregulation (LNINTRL) impact positively but insignificantly on 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 but insignificant impact on performance of deposit money banks in Nigeria.

**Hypothesis I**

- H<sub>0</sub>: Lending interest rate deregulation did not have positive and significant impact on performance of deposit money banks in Nigeria.
- H<sub>a</sub>: Lending interest rate deregulation has positive and significant impact on performance of deposit money banks in Nigeria.

Decision Rule: Reject Ho if p-value is less than or equal to 0.05, otherwise do not reject.

**Hypothesis II**

- H<sub>0</sub>: Interest rate deregulation did not have any long run relationship on the performance of deposit money banks in Nigeria.
- H<sub>a</sub>: Interest rate deregulation has long run relationship on the performance of deposit money banks in Nigeria.

Decision Rule: Reject  $H_0$  if p-value is less than or equal to 0.05, otherwise do not reject.

**Table 6: Long-run relationship between interest rate deregulation of total assets of deposit money banks in Nigeria**

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	

**Source:** Author's extract from Eviews result

Interpretation of Result: From the ARDL Bound test analysis, 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.

**CONCLUSION**

From the research analysis conducted, it is established that the positive impact of lending rate on deposit rate of deposit money banks is a positive index in the banking sector. Therefore, the empirical results do support the positions that deregulation can lead to better corporate performance for banks in Nigeria and that banks stand a better chance of growth and survival under deregulation. These

roles make them an important phenomenon in economic growth and development. In performing this role, it must be realized that banks have the potential, scope and prospects for mobilizing financial resources and allocating them to productive investments and in return promote their performance. Therefore, no matter the sources of the generation of income or the economic

policies of the country, deposit money banks should be interested in achieving the principles guiding their operations which are profitability, liquidity and solvency. For the banks to balance their

Following from the research findings above, it is recommended that; Commercial banks customers should realize that the banking system is dynamic and that the deregulation will eliminate all ineffective and inefficient lending. To attract loans for themselves, first they should bear in mind that they are making use of other people's money. They should realize that loanable fund is a repayable fund. This will make them think twice before demanding for loan

#### **Contribution to Knowledge**

This study had contributed to knowledge in various ways: Achieving currency,

main objectives of liquidity, profitability and solvency, lending must be handled effectively and the banks must behave in a way that their potential customers are attracted and retained.

#### **RECOMMENDATIONS**

enriching existing literature, and affirming and contradicting some earlier studies. Particularly, this study had added to existing literature on the subject area or related field for the benefit of future researchers and students. The study had equally contributed by way of knowledge, exposing the current situation on the relationship between interest rate deregulation and total assets of deposit money banks in Nigeria. Some findings of this study affirm with earlier studies while some are contradictory. This however, lends strong support to the ongoing debate on the subject matter.

#### **REFERENCES**

1. Oshiobugie O. B. & Okoh L. (2015). Impact Of Banks And Other Financial Institutions In Enhancing The Growth Of Entrepreneurial Development: An Empirical Study Of South-South Nigeria. *Journal of Policy and Development Studies*, 9(2), 1-19.
2. Onoh, C. F. (2019). Empirical analysis of the impact of interest rate deregulation on the performance of deposit money banks in Nigeria from 1989-2017. *American Journal of Economics*, 9(2), 45-50.
3. Sheriff, I. M. & Amoako, G. K. (2014). Macroeconomic determinants of interest rate spread in Ghana: Evidence from ARDL modeling approach. *Journal of Finance and Bank Management*, 2(2), 115-132.
4. Wainaina, K. G. (2013). Effect of macroeconomic factors on Commercial banks' lending to agricultural sector in Kenya. *MBA Project*: University of Nairobi.
5. Victor (2013). Effect of Bank lending rate on the performance of Nigerian deposit bank. *International Journal of Business and Management Review*. 1, 34-43.
6. Okoye, V. & Eze, O. R (2013). Effect of bank lending rate on the performance of Nigerian deposit money banks. *International Journal of Business and Management Review*, 1(1), 34 - 43.
7. Obute, C., Asor, A. & Itodo, A. I. (2012). An assessment of the impact of interest rates deregulation on economic growth in Nigeria (1964-2009). *Journal of Business and Organizational Development*, 4, 39-57.
8. CBN (2017). Statistical Bulletin. Abuja, Nigeria. Central Bank of Nigeria Communiqué No. 121 of the Monetary Policy .Retrieved from <https://www.cbn.gov.ng> *Central Bank of Nigeria Monetary Policy Decisions*.
9. Osamor, I. P., Akinlabi, H. & Osamor, V. C (2013). An empirical analysis of the impact of globalisation on performance of Nigerian commercial banks in post-consolidation period. *European Journal of Business and Management*, 5(5), 37 - 45.
10. Onuoha, I. P. & Azu, N. R. (2014). Evaluation of the financial performance of banks in a deregulated banking environment:

- A focal study of First Bank of Nigeria Plc. *Research Journal of Finance and Accounting* [www.iiste.org](http://www.iiste.org), 5(22).
11. Arikewuyo, K. A. & Akingunola R. O. (2019). Impact of interest rate deregulation on fund mobilisation of Deposit Money Banks (DMB) in Nigeria. *Izvestiya Journal of Varna University of Economics*, 63(2), 89 - 103.
  12. Anyanwaokoro, M. & 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