



Impact of Monetary Policy Rate on the Performance of Deposit Money Banks in Nigeria, 1981- 2018. Evidence from Interest Rate Deregulation

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ABSTRACT

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: examine the impact of interest rate on saving deregulation on the performance of deposit money banks in Nigeria. Measures the impact of deposit interest rate deregulation on the performance of deposit money banks in Nigeria, investigate the impact of lending interest rate deregulation on the performance of deposit money banks in Nigeria, determine the cointegration relationship existing between interest rate deregulation and the performance of deposit money banks in Nigeria. Autoregressive distributive lag-Bounds testing approach was used in this study. Saving rate positively and none significantly impacted on the return of assets of deposit money banks from 1981-2018 in Nigeria. Deposit rate positively and significantly impacted on the return of assets of deposit money banks from 1981-2018 in Nigeria. Lending rate positively and non significantly impacted on the return of assets of deposit money banks from 1981-2018 in Nigeria. There is long run relationship existing between interest rate deregulation and return of assets of deposit money banks from 1981-2018 in Nigeria. Based on the above findings, the study concludes that interest rate plays a serious positive influence the growth of the assets of money deposit banks in Nigeria. It was also to be noted that this study can be employed for the purposes of generalization and can be expanded to capture other sphere of the economy with distinctive peculiarities. When these generalizations are made, it is capable of positioning our banking institution to a greater performance and height. Interest rate on saving should be dutifully managed as a driver of economic growth. Effective policies such as policies that will discourage.

Keywords: Interest Rate Deregulation, Deposit Money Banks, Long-run Relationship, Monetary Policy

1. Introduction

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. 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 (CBN).

The performance of the deposit money Banks in Nigeria largely depends on total savings deposits in the sector and as such, that is the main reason banks set 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. Commercial banks are independent business entities that set their own lending rates. 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 several reasons, including value preservation, compensation for risk, and profits among others (Sheriff & Amoako, 2014). Commercial banks can increase their profit margins through higher lending rates and lower deposit rates. 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 a 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 rates. Thus, the determination of the appropriate lending rates usually becomes a major issue in the 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 policymakers, the banking industry, and the public at large.

Deregulation is one of the major developments that affect the Nigerian financial system in recent years. The policy includes both reductions in regulation and a change in the nature of regulations which might be properly referred to as deregulation and liberalization. Deregulation means the removal of official restrictions on consumer choice and the introduction or extension of competition on the supply side of the market. It must be emphasized that deregulation does not mean the absence of any regulation but it means an extension of consumer rights and the extension of the production base. Although the financial sector in Nigeria has witnessed some expansion in recent times, there are still observed problems that the sector is contending with. These problem ranges from the deregulation of interest rate, exchange rate, savings, and inflation rate.

However, despite these various reforms in the financial sector, the Nigerian money market is still shallow compared to money markets in some advanced and emerging countries. Under an ideal situation, deregulation of interest rates is expected to improve deposit money bank performance. This expectation had been deviated because of the inconclusive results from past studies and the reported level of banking liquidity. This can be traceable to inadequate management of interest rates caused by regulation and deregulation in the industry. The study, therefore, is set to determine the impact of interest rate deregulation on the performance of deposit money banks in Nigeria for the period 1989 to 2018.

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: examine the impact of interest rate on saving deregulation on the performance of deposit money banks in Nigeria. Measures the impact of deposit interest rate deregulation on the performance of deposit money banks in Nigeria, investigate the impact of lending interest rate deregulation on the performance of deposit money banks in Nigeria, determine the cointegration relationship existing between interest rate deregulation and the performance of deposit money banks in Nigeria

2. Review of Related Literature

2.1 Conceptual Framework

Interest Rate

An interest rate is the percentage of principal charged by the lender for the use of its money. The Principal is the amount of money lent. As a result, banks pay you an interest rate on deposits. They are borrowing that money from you. Anyone can lend money and charge interest, but it's usually banks. They use the deposits from savings or checking accounts to fund loans. They pay interest rates to encourage people to make deposits. Uwazie and Aina

(20`5) see banks charge borrowers a little higher interest rate than they pay depositors so they can profit. At the same time, banks compete with each other for both depositors and borrowers. The resulting competition keeps interest rates from all banks in a narrow range of each other. Although interest rates are very competitive, they aren't the same. A bank will charge higher interest rates if it thinks there's a lower chance the debt will get repaid. For that reason, banks will always assign a higher interest rate to revolve loans, like credit cards.

Deposit money banks

Onuoha and Azu (20`14) opine that deposit money banks are banking institution that is responsible for the collection of deposit for savings and as well for lending. Bank deposits consist of money placed into banking institutions for safekeeping. These deposits are made to deposit accounts such as savings accounts, checking accounts, and money market accounts. The account holder has the right to withdraw deposited funds, as set forth in the terms and conditions governing the account agreement.

Types of Bank Deposits

Current Account or Demand Deposit Account

Adofu, Abula, and Audu (2010) opine that a current account, also called an account deposit, is a basic checking account. Consumers deposit money and the deposited money can be withdrawn as the account holder desires on demand. These accounts often allow the account holder to withdraw funds using bank cards, checks or over-the-counter withdrawal slips. In some cases, banks charge monthly fees for current accounts, but they may waive the fee if the account holder meets other requirements such as setting up direct deposit or making a certain number of monthly transfers to a savings account.

There are several different types of deposit accounts including current accounts, savings accounts, call deposit accounts, money market accounts, and certificates of deposit (CDs).

1. **Savings Accounts:** Savings accounts offer account holders interest on their deposits. However, in some cases, account holders may incur a monthly fee if they do not maintain a set balance or a certain number of deposits. Although savings accounts are not linked to paper checks or cards like current accounts, their funds are relatively easy for account holders to access. In contrast, a money market account offers slightly higher interest rates than a savings account, but account holders face more limitations on the number of checks or transfers they can make from money market accounts.
2. **Call Deposit Accounts:** Financial institutions refer to these accounts as interest-bearing checking accounts, Checking Plus, or Advantage Accounts. These accounts combine the features of checking and savings accounts, allowing consumers to easily access their money but also earn interest on their deposits.
3. **Certificates of Deposit/Time Deposit Accounts:** Udeh (2015) sees a savings account as an investment vehicle for consumers. Also known as certificates of deposit (CD), time deposit accounts tend to offer a higher rate of return than traditional savings accounts, but the money must stay in the account for a set period of time. In other countries, time deposit accounts feature alternative names such as term deposits, fixed-term accounts, and savings bonds.

Lending Rate

Uwazie and Aina (2015) see lending rate as the bank rate that usually meets the short- and medium-term financing needs of the private sector. This rate is normally differentiated according to the creditworthiness of borrowers and the objectives of financing. The interest rate is the amount a lender charges for the use of assets expressed as a percentage of the principal. The interest rate is typically noted on an annual basis known as the annual percentage rate (APR).

2.2 Theoretical Review

The Classical Theory of Interest Rate

This theory is propounded by David Ricardo, in 1946 and was developed by Marshall, Piggon, Cassels, Walras, Tansing, and Knight in 1956. According to the classical theory, the rate of interest is determined by the interaction of demand and supply of capital, hence by the intersection of the investment demand schedule and the savings schedule. It could also be stated that the interest rate is determined by the equality of savings and investment under the condition of perfect competition. The rate of interest is constructed to be the balancing factor, which equates the volume of savings with the volume of investment. There is an inverse relationship between the rate of interest rises, the demand for capital declines. In the same manner, if the rate of interest falls, the demand curves for capital rise. That is why the demand curve for capital slopes downward from left to the right.

2.3 Empirical Literature

Okoye and Eze (2013) examined the impact of bank lending rate on the performance of Nigerian Deposit Money Banks. The study utilized secondary data econometrics in a regression, where time-series and quantitative design were combined and estimated. The result confirmed that the lending rate and monetary policy rate have significant and positive effects on the performance of Nigerian deposit money banks. It recommended that government should adopt policies that will help Nigerian deposit money banks to improve on their performance and there is a need to strengthen bank lending rate policy through effective and efficient regulation and supervisory framework.

Obamuyi and Demehin (2012) examined the effect of interest rate reforms on financial deepening in Nigeria. The study used Co-integration and Vector error correction models (VECM). The results indicated that there exists a long-run relationship between financial deepening and interest rates. The study also found that interest rate reform has a positive and significant effect on financial deepening in Nigeria. The results here suggested that policymakers enact measures that positively influence financial development, economic growth, liquidity reserve ratio, domestic savings/GDP ratio as well as reforms to ensure the efficiency and development of the financial system.

Ifeanyi and Chukwu (2014) examined the nexus of interest rate deregulation and economic growth in Nigeria. The study used the ordinary least square regression. The results showed that the coefficients of interest rate, investment, trade openness, real exchange rate, and inflation contributed positively to the level of growth in Nigeria during the period under review statistically, the t-statistic of the variable under consideration showed that all the variables under consideration but for one were significant, while the variable inflation was not significant statistically. The F-statistic interpretation showed that the overall estimate of the regression has a good fit and was statistically significant. The study, therefore, recommended that market-driven or flexible interest rates that will not only boost productive capacities and encourage export activities but will also improve the overall performance of the Nigerian economy should be enhanced.

Emeka, Agoke, and Josephine (2015) examined the effect of interest rates deregulation on the performance of deposit money banks in Nigeria using the OLS regression method. Findings from the study revealed that deregulated interest rates have a positive and significant impact on the ROA of deposit money banks. It showed that as interest rates increase, the ROA also appreciates. The study further revealed that deregulated interest rates have a positive and significant relationship with the loans and advances of deposit money banks. It shows that the higher the rates of interest, the higher the performance of deposit money banks. It was therefore recommended that the banking sector regulatory authority should ensure that specific policy tools such as the minimum re-discount rate, maximum lending rate, liquidity ratio, monetary policy rate are effectively managed to induce higher savings, increase credit supply, stimulate investment and hence positively impact on the performance of the banking sector and enhance economic growth in general.

Tajudeen, Taofeek, and AbdulGaniy (2017) on Interest Rate Liberalization, Financial Development and Economic Growth in sub-Saharan African Economies, considered a structural interaction of the interest rate liberalization-growth nexus; through the inclusion of financial development variables, for sub-Saharan African economies. Employing panel cointegration and panel error correction models for empirical investigations. From the results obtained, it was evident that other factors such as the openness on trade and price stability are much more

significant for interest rate liberalization and economic growth in sub-Saharan African countries. They recommended that the level of financial development, price stability, and institutional arrangement should be properly attended to for effective and far-reaching policy suggestions in

Sub-Saharan African economies.

Udoka, Agwenjang, and Arzizeh (2012) on empirical Analysis of the Effect of Interest Rate Management Policies in Nigeria employed Ex-post facto research design to analyze the data. The data employed for the research are interest rate and Gross Domestic Product. The research shows that there exists an inverse relationship between interest rate and economic growth in Nigeria that hinders the growth of the real sector. They recommended that a strong monetary policy for Nigeria should be initiated that would enhance lending to the real sector economy of Nigeria for the 20sustenance of economic activities. The research ended without giving any specific monetary policy that should be employed to achieve the specified goal.

Ugwuanyi (2012) researched the Interest Rate Deregulation and Bank Lending in Nigeria to show the relevance of the hinges on the fact that credit and its costs (interest) performs a private role in shaping the economic future of Nigeria. The ordinary least square (OLS) techniques were employed using data such as Banks Lending, Money Supply, Interest Rate, Marginal rediscount Rate, Total Bank Deposit, and Inflation Rate. The research found a significant relationship between the dependent variable and the independent variables. Thus the research recommended that the government through Central Bank should implement stringent fiscal and monetary policies aimed at reducing inflation.

Eke, Eke, and Odim (2015) on interest rate deregulation effect on the lending operations of Nigerian commercial banks. They divided the research into two policy regime periods; the regulated interest rate era and the deregulated period. The empirical result obtained for the interest rate regulation era showed that interest rate spread and statutory liquidity ratio had a negative and significant effect on the volume of commercial banks' loans, while fixed exchange rate had a negative and insignificant impact on banks' loans and advances. It was found that Monetary Policy Rate (MPR) and inflation rate exert a positive and significant impact on banks' loans for the period. For the deregulation era, the result showed that MPR and the exchange rate had a significant impact on banks' loans and advances. While the former exerted a negative impact, the latter had a positive influence on loans and advances. Interest rate spread, statutory liquidity ratio, and inflation rate were found not to have significantly impacted commercial banks' loans and advances for the period. The chow test result confirms the impact of deregulation on the volume of commercial banks loans and advances due to the deregulation of interest rates. The research recommended that there is a need to improve financial infrastructure which will enhance commercial bank operations resulting in a more competitive financial market and an improved investment climate in the country.

Makinde (2016) on Effect of Interest Rate on Commercial Bank Deposits in Nigeria Using the Ordinary Least Square (OLS) multiple regression techniques. The data for the research are Commercial Bank Deposits, interest rates, and the Gross Domestic Product. The study revealed that there is a negative relationship between the interest rates and commercial bank deposits suggesting that interest rates have not been responsible for customers deposits in commercial banks in Nigeria. It recommended that adequate awareness be made by commercial banks to attract more customers' deposits by educating them on the measure of interest that will accrue to them when they deposit their funds with the commercial banks.

Afza, Raja, Imran & Saima (2018) 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 rates are negatively affecting the profitability of banks, while advances and loans, and investments are having a positive influence over the profitability of banks. The research recommended that Government should make monetary policies that will increase the profitability of banks.

Odeke and Odongo (2014) on Interest Rate Risk Exposure and Financial Performance of Commercial Banks in Uganda, utilized a cross-sectional survey and descriptive research design with a sample size of 9 commercial banks analyzed and interpreted using financial ratios of DuPont analysis of commercial banks. The research findings show that a combined variation of maturity gaps, basis risk, and assets and liabilities margins for all the commercial banks

accounted for up to 14.9% variation in their banks' performance. The variation explained 20.19% of the performance of the commercial banks. The overall analysis of interest rate risk exposure and bank performance showed generally a positive relationship except for basis risk. It recommended that Commercial Banks need to develop policies and resources tended to manage asset and liability duration mismatches effectively.

Alhassan, Anokye, and Gakpetor (2018) on the effect of interest rate spread on the profitability of commercial banks in Ghana. The research is based on a sample of 24 banks over ten years using panel data, interest rate spread, net interest margin Return on Assets, and Return on Equity was the data for the study. The study shows that there is a positive and statistically significant association between interest rate spread and bank profitability in Ghana. The research recommended that policies aimed at reducing interest rate spread in Ghana should focus on making credit facilities available at a cheaper rate to compel commercial banks to reduce the interest rate.

Udoka and Anyingang (2012) investigated the effect of interest rate fluctuation on the economic growth of Nigeria. Two research hypotheses were formulated to investigate the relationship between interest rate and economic growth and the difference in economic growth before and after the interest rate deregulation regime in Nigeria. An ex-post facto research design was adopted for the study. Data collected were analyzed and tested using the ordinary least square multiple regression analytical technique. The result of the findings revealed that: there existed an inverse relationship between interest rate and economic growth in Nigeria, meaning that an increase in interest rate will decrease the GDP of the country, thus retarding the growth of the real sector. It recommended that a strong monetary policy for Nigeria should be evolved that would enhance lending to the real sector economy for productive economic activities.

3. Methodology

Model Specification

The study follows the model of Owusu and Odhiambo (2013) 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:

$$\text{TradeOpenness} = f(\text{EconomicGrowth})$$

With the reverse causation stated thus:

$$\text{EconomicGrowth} = f(\text{TradeOpenness})$$

As a modification to the above, the 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:

$$\text{LNTADM}B_t = \beta_0 + \beta_1 \text{LNINTRS}_t + \beta_2 \text{LNINTRD}_t + \beta_3 \text{LNINTRL}_t + \dots + E_t$$

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

$$\text{LNTADM}B_t = \beta_0 + \sum_{i=1}^m \beta_1 \Delta \text{LNINTRS}_{t-1} + \sum_{i=1}^n \beta_2 \text{LNINTRD}_{t-1} + \sum_{i=1}^m \beta_3 \Delta \text{LNINTRL} + \dots + \mu_t$$

LNTADM = 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. β_0 = coefficient/Equilibrium point.

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ = Proxies. t = time series data $n_{t-1, t-2, t-3, t-4}$ = Lag values of the variables

Then, the model for this study adopted the above model but was re-modified so that TA will be endogenized and interest rate deregulation aggregates will be exogenized thus:

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

4. Presentation and Analysis of Data

Table 4.1 Raw Data Of the Variables from Statistical Bulletin 2018

<i>YEAR</i>	<i>ASDMB</i>	<i>SAVR</i>	<i>DEPR</i>	<i>LENDR</i>
1981	19.48	6.00	7.75	10.00
1982	22.66	7.50	10.25	11.75
1983	26.7	7.50	10.00	11.50
1984	30.07	9.50	12.50	13.00
1985	32	9.50	9.25	11.75
1986	39.68	9.50	10.50	12.00
1987	49.83	14.00	17.50	19.20
1988	58.03	14.50	16.50	17.60
1989	64.87	16.40	26.80	24.60
1990	82.96	18.80	25.50	27.70
1991	117.51	14.29	20.01	20.80
1992	159.19	16.10	29.80	31.20
1993	226.16	16.66	18.32	36.09
1994	295.03	13.50	21.00	21.00
1995	385.14	12.61	20.18	20.79
1996	458.78	11.69	19.74	20.86
1997	584.34	4.80	13.54	23.32
1998	694.62	5.49	18.29	21.34
1999	1070.02	5.33	21.32	27.19
2000	1568.89	5.29	17.98	21.55
2001	2247.04	5.49	18.29	21.34
2002	2766.88	4.15	24.85	30.19
2003	3047.86	4.11	20.71	22.88
2004	3753.28	4.19	19.18	20.82
2005	4515.12	3.83	17.95	19.49
2006	7172.93	3.14	17.26	18.70
2007	10981.69	3.55	16.94	18.36
2008	15919.56	2.84	15.14	18.70
2009	17522.86	2.68	18.99	22.62
2010	17331.56	2.21	17.59	22.51
2011	17396.63	1.41	16.02	22.42
2012	21288.14	1.70	16.79	23.79
2013	24301.21	2.17	16.72	24.69
2014	27526.42	3.38	16.55	25.74
2015	28173.26	3.58	16.85	26.71

2016	31682.15	3.75	16.87	27.29
2017	34593.89	4.13	17.58	30.68
2018	37206.99	4.07	16.91	31.09

Source: CBN Statistical Bulletin 2018, Bh8i

Compiled From Returns Of Assets Of (1) Commercial Banks 1981-2001 (2) Universal Banking 2002-2013 (3) Deposit Money Banks 2014-2018.

ASDMB=Return on assets of deposit money banks.BH8I, SAVR= Saving rate, DEPR= Deposit rate, LENDR=Lending rate

Table 4.2 Log- Transformation of Raw Data of Variables under Study

YEAR	LNASDMB	LNSAVR	LNDEPR	LNLENDR
1981	2.9693	1.7917	2.0476	2.3025
1982	3.1206	2.0149	2.3272	2.4638
1983	3.2846	2.0149	2.3025	2.4423
1984	3.4035	2.2512	2.5257	2.5649
1985	3.4657	2.2512	2.2246	2.4638
1986	3.6808	2.2512	2.3513	2.4849
1987	3.9086	2.6390	2.8622	2.9549
1988	4.0609	2.6741	2.8033	2.8678
1989	4.1723	2.7972	3.2884	3.2027
1990	4.4183	2.9338	3.2386	3.3214
1991	4.7665	2.6595	2.9967	3.0349
1992	5.0706	2.7788	3.3945	3.4404
1993	5.4212	2.8130	2.9079	3.5860
1994	5.6870	2.6026	3.0445	3.0445
1995	5.9536	2.5344	3.0046	3.0344
1996	6.1285	2.4587	2.9823	3.0377
1997	6.3704	1.5675	2.6058	3.1490
1998	6.5433	1.7029	2.9064	3.0604
1999	6.9754	1.6733	3.0596	3.3028
2000	7.3581	1.6658	2.8892	3.0703
2001	7.7173	1.7029	2.9064	3.0604
2002	7.9254	1.4231	3.2128	3.4075
2003	8.0221	1.4134	3.0306	3.1302
2004	8.2303	1.4327	2.9538	3.0359
2005	8.4151	1.3428	2.8875	2.9699
2006	8.8780	1.1444	2.8483	2.9285
2007	9.3039	1.2655	2.8295	2.9103
2008	9.6753	1.0420	2.7170	2.9283
2009	9.7712	0.9842	2.9439	3.1189
2010	9.7602	0.7909	2.8670	3.1139
2011	9.7640	0.3439	2.7739	3.1097
2012	9.9659	0.5298	2.8208	3.1691
2013	10.0989	0.7740	2.8167	3.2064
2014	10.2229	1.2180	2.8062	3.2481
2015	10.2461	1.2759	2.8242	3.2849
2016	10.3635	1.3210	2.8254	3.3065
2017	10.4514	1.4182	2.8667	3.4236
2018	10.5242	1.4043	2.8277	3.4370

Source: CBN Statistical Bulletin 2018 Log Form

Table 4.2 shows the logged data for selected deposit money bank indicators and interest rate deregulation model proxies. Data were logged-transformed in order to reduce the information to a meaningful and manageable size for the statistical presentation of results. Logged transformed data are used for easy interpretation of results, introduce Linearity and Elasticity and also address diagnostic problems.

Table 4.3 Summary Of Unit Roots Test Results

Variable	PP Stat	C V @ 5%	Prob. Value	INFERENCE	REMARK
LNASDMB	-11.6949	-3.5429	0.0000	I(2)	STATIONARY
LNSAVR	-5.6084	-3.5403	0.0003	I(1)	STATIONARY
LNDEPR	-3.5261	-2.9484	0.0127	I(0)	STATIONARY
LNLENDR	-8.0181	-7.5403	0.0000	1(1)	STATIONARY

Source: Author's e-view 10 output with data in Appendix One.

From the result of Philip and Peron unit root test contained in table 4.3 return on assets of deposit, money bank is integrated of order 1(2). On the other hand, Saving rate and lending rate are integrated at 1(1) meaning that is stationary at order 1. And finally, the deposit rate is integrated of order 1(0) meaning that it is integrated at levels. Given these different orders of integration, the Ordinary Least Square Regression Method was given up in preference for the Autoregressive Distributed Lag Model which tolerates such stationary property combination. In addition, the sample size is also good enough for the ARDL given that its estimates remain robust and consistent in the face of not too large a sample size and finally good for data characterized with structural breaks.

Basic Descriptive Statistics or Standard tests for Normality

The statistical properties of the data sets are seen as vital determinants of their behaviors when used in econometric analyses. Based on this, the researcher presented in this section, the basic descriptive statistics called the Normality test of the variables under study.

Table 4.4 Basic Descriptive Statistics or Standard tests for Normality

	LNASDMB	LNSAVR	LNDEPR	LNLENDR
Mean	7.002515	1.760645	2.829551	3.042639
Median	7.166778	1.669585	2.864481	3.065421
Maximum	10.52425	2.933857	3.394508	3.586016
Minimum	2.969388	0.343973	2.047693	2.302585
Std. Dev.	2.598046	0.704819	0.285629	0.308101
Skewness	-0.110631	0.038202	-0.789464	-0.768745
Kurtosis	1.546781	2.007194	3.824293	3.088292
Jarque-Bera	3.421272	2.569878	5.023084	3.755143
Probability	0.000751	0.006147	0.001143	0.002961
Sum	266.0956	66.90450	107.5229	115.6203
Sum Sq. Dev.	249.7441	18.38047	3.018605	3.512259
Observations	38	38	38	38

Source: Author's e-view 10 output with data in Appendix One.

Kurtosis of the distribution is less than 3 meaning that they are leptokurtic and are not peaked. Of particular interest is the Jacque-Bera (JB) statistics which is a test for normality. It is a combined test of Skewness (S) of zero (0) and kurtosis (K) of three (3), which are signs of a Mesokurtic distribution. In this case, however, the JB statistics shows that the variables are tending to 3 which are signs of Mesokurtic. The assumption of normality is accepted by the JB statistics, as well as the (K) and (S) figures.

Table 4.5 ARDL

Dependent Variable: LNASDMB				
Method: ARDL				
Date: 02/09/20 Time: 08:37				
Sample (adjusted): 1983 2018				
Included observations: 36 after adjustments				
Maximum dependent lags: 2 (Automatic selection)				
Model selection method: Akaike info criterion (AIC)				
Dynamic regressors (3 lags, automatic): LNSAVR				
Fixed regressors: C @TREND				
Number of models evaluated: 8				
Selected Model: ARDL(2, 0)				
<i>Note: final equation sample is larger than selection sample</i>				
Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LNASDMB(-1)	1.619838	0.139036	11.65050	0.0000
LNASDMB(-2)	-0.869297	0.190397	-4.565699	0.0001
LNSAVR	0.133638	0.073918	-1.807922	0.0803
C	1.025724	0.426550	2.404699	0.0223
@TREND	0.050455	0.023121	2.182223	0.0368
R-squared	0.998619	Mean dependent var		7.222377
Adjusted R-squared	0.988441	S.D. dependent var		2.488077
S.E. of regression	0.098232	Akaike info criterion		-1.674731
Sum squared resid	0.299133	Schwarz criterion		-1.454798
Log likelihood	35.14516	Hannan-Quinn criteria.		-1.597969
F-statistic	5605.745	Durbin-Watson stat		2.085431
Prob(F-statistic)	0.000000			
<i>*Note: p-values and any subsequent tests do not account for model selection.</i>				

Source: Author's e-view 10 output with data.

Accept H_0 if the sign of the coefficient of the parameter estimates is negative, otherwise, reject H_0 and accept H_1 when the coefficient of the parameter estimates is positive, or Accept H_1 if the sign of the coefficient is positive, otherwise reject H_0 .

Given the coefficient of the parameter estimates of saving rate as 13% and the probability of t-statistics of $0.08 > 0.05$ which is non-significant, it shows that it is positively signed and statistically non-significant.

Table 4.6 ARDL

Dependent Variable: LNASDMB				
Method: ARDL				
Date: 02/10/20 Time: 11:06				
Sample (adjusted): 1984 2018				
Included observations: 35 after adjustments				
Maximum dependent lags: 1 (Automatic selection)				
Model selection method: Akaike info criterion (AIC)				
Dynamic regressors (3 lags, automatic): LNDEPR				
Fixed regressors: C				
Number of models evaluated: 4				
Selected Model: ARDL(1, 3)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LNASDMB(-1)	0.977128	0.008788	111.1916	0.0000
LNDEPR	0.429219	0.112177	-0.438762	0.0441

LNDEPR(-1)	0.023234	0.114902	0.202211	0.8412
LNDEPR(-2)	0.043849	0.112985	0.388091	0.7008
LNDEPR(-3)	0.200149	0.102004	1.962173	0.0594
C	-0.246061	0.275504	-0.893132	0.3791
R-squared	0.998084	Mean dependent var		7.334883
Adjusted R-squared	0.987753	S.D. dependent var		2.429717
S.E. of regression	0.115164	Akaike info criterion		-1.330123
Sum squared resid	0.384616	Schwarz criterion		-1.063491
Log likelihood	29.27715	Hannan-Quinn criter.		-1.238082
F-statistic	3021.048	Durbin-Watson stat		2.126438
Prob(F-statistic)	0.000000			

**Note: p-values and any subsequent tests do not account for model selection.*

Source: Author's e-view 10 output with data.

Accept H_0 if the sign of the coefficient of the parameter estimates is negative, otherwise, reject H_0 and accept H_1 when the coefficient of the parameter estimates is positive, or Accept H_1 if the sign of the coefficient is positive, otherwise reject H_0 .

Given the coefficient of the parameter estimates of deposit rate as 42% and the probability of t-statistics of $0.04 < 0.05$ which is significant, it shows that it is positively signed and statistically significant,

Table 4.7 ARDL

Dependent Variable: LNASDMB				
Method: ARDL				
Date: 02/10/20 Time: 11:45				
Sample (adjusted): 1982 2018				
Included observations: 37 after adjustments				
Maximum dependent lags: 1 (Automatic selection)				
Model selection method: Akaike info criterion (AIC)				
Dynamic regressors (2 lags, automatic): LNLENDR				
Fixed regressors: C				
Number of models evaluated: 3				
Selected Model: ARDL(1, 0)				
<i>Note: final equation sample is larger than selection sample</i>				
Variable	Coefficient t	Std. Error	t-Statistic	Prob.*
LNASDMB(-1)	0.985399	0.009411	104.7042	0.0000
LNLENDR	0.086199	0.084359	1.021802	0.3141
C	0.041047	0.231734	0.177130	0.8605
R-squared	0.997786	Mean dependent var		7.111518
Adjusted R-squared	0.987656	S.D. dependent var		2.544266
S.E. of regression	0.123176	Akaike info criterion		-1.272796
Sum squared resid	0.515861	Schwarz criterion		-1.142181
Log likelihood	26.54672	Hannan-Quinn criter.		-1.226748
F-statistic	7662.683	Durbin-Watson stat		2.164001
Prob(F-statistic)	0.000000			

**Note: p-values and any subsequent tests do not account for model selection*

Source: Author's e-view 10 output with data.

Accept H_0 if the sign of the coefficient of the parameter estimates is negative, otherwise reject H_0 and accept H_1 when the coefficient of the parameter estimates is positive, or Accept H_1 if the sign of the coefficient is positive, otherwise reject H_0 .

Given the coefficient of the parameter estimates of lending rate as 9% and the probability of t-statistics of $0.31 > 0.05$ which is non significant, it shows that it is positively signed and non statistically significant.

Table 4.8 F- Bound test

T-statistics	val	sign	1(0)	1(1)
F- Statistics	23	5%	2.79	3.67

Source: Eview 10(see appendix 4)

Accept H_0 if the sign of the F-sta is $< I(0)$ and $I(1)$, otherwise reject H_0 and accept H_1 when F-sta is $> I(0)$ and $I(1)$,

Given the coefficient of the parameter estimates o of the F stat as 23 which is higher than $I(0)$ and $I(1)$, respectively, it shows that there is a long-run relationship of interest rate deregulation on the performance of deposit money banks in Nigeria. Based on this, error correction was estimated, thus, error correction in $cointeq(-1)$ shows a convergence.

Table 4.9 ARDL Error Correction Regression

Dependent Variable: D(LNASDMB)				
Selected Model: ARDL(1, 0, 1, 0)				
Case 2: Restricted Constant and No Trend				
Date: 02/10/20		Time: 12:20		
Sample: 1981 2018				
Included observations: 37				
ECM Regression				
Case 2: Restricted Constant and No Trend				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LNDEPR)	0.115727	0.086112	1.343921	0.1887
CointEq(-1)*	-0.016488	0.001445	-11.41030	0.0000
R-squared	0.198177	Mean dependent var		0.204186
Adjusted R-squared	0.175267	S.D. dependent var		0.123970
S.E. of regression	0.112583	Akaike info criterion		-1.477719
Sum squared resid	0.443620	Schwarz criterion		-1.390643
Log likelihood	29.33781	Hannan-Quinn criteria.		-1.447021
Durbin-Watson stat	1.108108			
* p-value incompatible with t-Bounds distribution.				
F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	23.06312	10%	2.37	3.2
K	3	5%	2.79	3.67
		2.5%	3.15	4.08
		1%	3.65	4.66

Source: Author's e-view 10 output with data.

Result reveals that from the error correction model it will take thirteen years, four months, and three days for error emanating from the convergence shock to return to equilibrium.

5. Conclusion

This study investigated the impact of interest rate deregulation on deposit money banks from 1981-2018 in Nigeria. The economic motivation of the study is anchored on the desire to find out the extent to interest rate deregulation on deposit money banks from 1981-2018 in Nigeria A review of Conceptual, empirical and theoretical basis for the work was done. The research methodology concentrated on the use of the baseline and bound test ARDL of the

variables under study. Saving rate positively and none significantly impacted on the return of assets of deposit money banks from 1981-2020 in Nigeria. Deposit rate positively and significantly impacted the return of assets of deposit money banks from 1981-2018 in Nigeria. Lending rate positively and non significantly impacted on the return of assets of deposit money banks from 1981-2018 in Nigeria. There is a long-run relationship existing between interest rate deregulation and return of assets of deposit money banks from 1981-2020 in Nigeria

Based on the above findings, the study concludes that interest rate plays a serious positive influence on the growth of the assets of money deposit banks in Nigeria. It was also to be noted that this study can be employed for the purposes of generalization and can be expanded to capture other spheres of the economy with distinctive peculiarities. When these generalizations are made, it is capable of positioning our banking institution to greater performance and height. The interest rate on saving should be dutifully managed as a driver of economic growth. Effective policies such as policies that will discourage

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