# EFFECTS OF LENDING AND DEPOSIT INTEREST RATE FLUCTUATION ON THE NIGERIAN ECONOMIC DEVELOPMENT

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### Abstract

According to Keynes, interest rate is the reward for not hoarding but for parting with liquidity for a specific period of time. Keyne's definition of interest rate focuses more on the lending rate of interest and this is the area where most researchers are focusing. This write up therefore intends to examine both the Lending Interest Rate and Deposit Interest Rate and the effects of its fluctuation on the Nigerian Economic Development. The study made use of Secondary Data sourced from the Central Bank of Nigeria Statistical Bulletin and between 1981 and 2015. The researcher used Ex-post facto research design which was influenced by the nature of the data used. Data collected were analyzed and tested using Graph, Unit Root Test, Co-Integration Test, Error Correction Model (ECM) test and Granger Causality test. The study concludes that (1) there is no significant relationship between the Lending Interest Rate and Nigerian Economic Development (2) there is no significant relationship between the Deposit Interest Rate and Nigerian Economic Development. The researcher therefore recommends (1) That the government policy in Nigeria should aim at reducing inflation rate since it is the major factor that influences the value of money in an economy. (2)The government and monetary regulatory bodies should reasonably ensure the stability of interest rate policy that will reduce the fluctuation of the lending and deposit interest rate. (3)The financial system should encourage an interest rate that will be favorable to both the depositor and borrowers. (4)Enough awareness should be created by financial institution and policy makers to educate the depositors and borrowers on the merits and demerits of interest rate.

**Keywords:** lending Interest Rate, Deposit Interest Rate. Gross Domestic Product And Economic Development.

### Introduction

The time value of money makes its value to be dynamic and this is always caused by some factors like inflation and deflation, the dynamic nature of the value of money makes it to have cost (interest) when borrowed and to have income(interest) when lent (Okuma, 2004). This study therefore considered the both sides of interest, that is interest as cost to the bank when paid on customer deposit and as income, when it is received by the bank from the customer for the credit borrowed. Though, most often, interest is always viewed as cost of credit in an economy. More specifically, it is the yearly price charged by a lender to a borrower in order to obtain a loan. This is usually expressed as a percent of the total amount loaned (Fisher, 1930). According to kurak (2000) it is the price that relates to present claims

on resources relative to future claims on resources. The price a borrower pays in order to be able to consume resources now (mutinds ,2014). The rate of interest in an economy is one of the major determinant factor that ignite the interest of the investors to borrow or not to borrow and high rate of deposit interest rate always attracts the depositors interest and vice versa.

The bank customers therefore prior to investment decision, consider most of the financial polices mostly as they relates to the interest rate policy. The Monetary Policy, as a major tool that the Monetary Authority uses to influence changes in the interest rate has been operated with a variety of objectives in mind over the years. Perhaps it is also the reason why the policy objective of the Central Bank of Nigeria (CBN) and its Monetary Policy thrusts is essentially the attainment of price stability and sustainable economic growth. Associated objectives are those of full employment, stable long-term interest rate and real exchange rates. Although the focus of Monetary Policy has shifted largely in favours of price stability, especially with the adoption of "inflation targeting" in 2008, the monetary authority acknowledges the need to create a balance with the other microeconomic objectives of the Government.

# **Interest rate fluctuation**

The Nigeria economy has at different times witnessed enormous interest rate swings in different sectors of the economy since the 1970s and mid 1980s under the regulated regime. The preferential interest rate was based on the premise that the market, if freely applied would exclude some priority sectors (Anyingang, 2012).

After the interest rate regulated period comes the interest rate liberalization and financial deregulation policy in 1986. The policy was put in place to achieve efficiency in the financial sector thus, engendering financial deepening. This measures includes the removal of interest rate ceilings, and loosing of deposit and credit controls. Prior to the introduction of Structural Adjustment Program (SAP) in 1986, the Nigerian financial sectors was characterized by rigid exchange and interest rate controls, mandatory sector allocation of bank credit and quantitative ceiling in bank credits to the private sectors, all of which engender distortions and inefficiency that result to low direct investment, funds were inadequate, the Nigeria currency was overvalued and the monetary and the credit aggregate moved rather sluggishly,

There was however, a policy reversal in 1994 the federal government introduced some measures of regulation into interest management in the country owing to wide variations and unnecessarily high rates under complete deregulation of interest rate (Omole and Falokund, 1999). The authors also noted that deposits were once again set at 12%-15% per annum while ceiling of 21% per annum was fixed for lending. The cap on interest rates introduced in 1994 was retained in 1995 with a little modification for flexibility but was lifted in October 1996 to pursue a flexible interest rate regime.

# **Empirical Literature Review**

Many researchers have studied the Effects of Interest Rate on the Nigeria Economic Growth, and their methodologies, conclusions and recommendations are deemed necessary to be considered in the conclusion of this paper.

Udoka and Anyingang (2012) examined the Effect of Interest Rate Fluctuation on the Economic Growth of Nigeria (1970-2010). The authors used Ex-Post Facto research design. Data for their studies were obtained from the Central Bank of Nigeria Statistical Bulletin. Data collected were analyzed and tested using the Ordinary Least Square Multiple Regression Analytical\_Technique. The result of their findings revealed that there existed an inverse relationship between interest rate and economic growth in Nigeria. Meaning that increase in interest rate will decrease GDP of the country, thus retarding growth of the real sector. It was recommended that a strong Monetary Policy for Nigeria should be evolved that would enhance lending to the real sector economy for productive economic activities.

OJeaga and Omosefe (2014) studied the Impact of Interest Rate on Bank Deposit. Evidence from the Nigeria Banking Sector, After identifying a lot of factors that are likely to influence customer confidence in commercial banks such as average income, commercial lending, legal right strength, Central Bank Monetary Policy and total annual commercial bank losses, using Quantile Regression Estimation Method, a non parametric estimation process that is based on the premise that the sample median will tend to that of the distribution and addresses issues of heteroscedastic errors and data stringency associated with the data used in the study under question. They found out that interest rates were probably increasing bank deposits while income was also found to affect bank deposits in general.

Mutinds (2014) researched on the Effect of lending Interest Rate on Economic growth in Kenya. The researcher collected data from the KBNS and from Central Bank of Kanya for a 10years period starting 2003 to 2012 and the same was regressed quarterly to help answer the research question. The study established that there is a negative relationship between Interest Rate and the Economic Growth. Interest rate was not studied in isolation but there were other variable which were also studied i.e. budget deficit, inflation rate, exchange rate and gross investment whose effects to the economic growth was also established. Since lending interest has a strong bearing on economic growth, it's imperative rate is the same thing for the other variables which were also studied namely, budget deficit, inflation rate, exchange rate, exchange rate and gross investment.

Hassan (2016) in his paper titled Effect of Interest Rate on Commercial Bank Deposits in Nigeria (2000-2013) where he made use of Secondary Data sourced from the Central Bank of Nigeria Statistical Bulletin and the National Bureau of Statistics between 2000 and 2003. The model for the study has as its dependant variable as the Commercial Bank Deposit (CBD) which its explanatory variable was the Interest Rate 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 rate and Commercial Bank Deposits suggesting that interest rate has not been responsible for customers' deposits in Commercial Banks in Nigeria.

Jelilor and koumbs (2014) studied the Impact of Interest Rate on Economic Growth Example of Nigeria (1990-2013) in their study; they used Secondary Data that cover the period of 1990 to 2013 which is obtained from the Central Bank of Nigeria Statistical Bulletin and Journals. The technique used in this is the Ordinary Least Square Regression Method and the result found that the interest rate has a slight impact on growth of the Nigerian Economy

# **Purpose of the Study**

The purpose of this study is to ascertain the effect of lending and Interest Rate Fluctuation on the Nigerian Economic Development.

## Null Hypothesis

H1: There is no significant relationship between the Lending Interest Rate and Nigerian Economic Development.

H2: There is no significant relationship between the Deposit Interest Rate and Nigeria Economic Development

## **Alternative Hypothesis**

H1: There is significant relationship between the Lending Interest Rate and Nigeria Economic Development

H2: There is significant relationship between the Deposit Interest Rate and Nigeria Economic Development

## Scope of the study

This study covers the reaction of RGDP on fluctuation of Lending and Deposit Interest Rate on Nigeria Economic Development between the periods of 1981 to 2015.

## Methodology

Ex-Post Facto research design is adopted in this study and this is considered do to the nature of the date used which is in time series form. The data were collected from CBN Statistical Bulletin and were analyzed and tested using Graphs, Unit Root, Co- integration and Error Correction Method (ECM) tests and Granger Causality test.

### **Model Specification**

The relationship between Lending and Deposit Interest Rate fluctuation and Nigerian Economic Development of Nigeria is modeled as below RGDP=b0+b1LIR+b2DIR

### **Table 1: Data presentation and Analysis**

Nigeria's Micro Economic variable on Real Gross Domestic Product (RGDP) Lending Interest Rate (LIR), Deposit Interest Rate (DIR) and Total Deposit Money Bank Loans and Advances (TDMBLA)

	RGDP	DIR	LIR	TDMBLA
1981	15,258.00	6	10	8.6

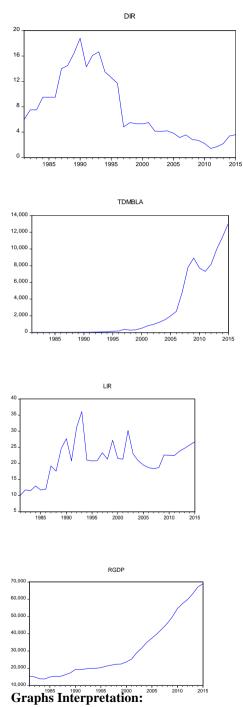
1982	14,985.08	7.5	11.75	10.3
1983	13,849.73	7.5	11.5	11.1
1984	13,779.26	9.5	13	11.5
1985	14,953.91	9.5	11.75	12.2
1986	15,237.99	9.5	12	15.7
1987	15,263.93	14	19.2	17.5
1988	16,215.37	14.5	17.6	19.6
1989	17,294.68	16.4	24.6	22
1990	19,305.63	18.8	27.7	26
1991	19,199.06	14.29	20.8	31.3
1992	19,620.19	16.1	31.2	42.7
1993	19,927.99	16.66	36.09	65.7
1994	19,979.12	13.5	21	94.2
1995	20,353.20	12.61	20.79	144.6
1996	21,177.92	11.69	20.86	169.4
1997	21,789.10	4.8	23.32	385.6
1998	22,332.87	5.49	21.34	272.9
1999	22,449.41	5.33	27.19	322.8
2000	23,688.28	5.29	21.55	508.3
2001	25,267.54	5.49	21.34	796.2
2002	28,957.71	4.15	30.19	954.6
2003	31,709.45	4.11	22.88	1,210.00
2004	35,020.55	4.19	20.82	1,519.20
2005	37,474.95	3.83	19.49	1,976.70
2006	39,995.50	3.14	18.7	2,524.30
2007	42,922.41	3.55	18.36	4,813.50
2008	46,012.52	2.84	18.7	7,799.40
2009	49,856.10	2.68	22.62	8,912.10
2010	54,612.26	2.21	22.51	7,706.40
2011	57,511.04	1.41	22.42	7,312.70
2012	59,929.89	1.7	23.79	8,150.00
2013	63,218.72	2.17	24.69	10,005.60
2014	67,152.79	3.38	25.74	11,475.18
2015	69,023.93	3.58	26.71	13,086.20

Source: Central Bank of Nigeria (CBN) Statistical Bulletin (2015)

# **Descriptive Analysis**

Graphs

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In the periods before the deregulation era, the RGDP increased from 15,258billion naira to 14,953.91billion naira from the year 1981 to 1985 while the deposit interest rate had a

slight increase from 6 percent to 9.5percent and the lending interest rate equally reacted in the same manner within the percentage of 10 and 11.75 percent and the total Deposit money Bank loan and Advancers from 8.6 billion naira to 12.2billion naira. Considering the rigidness of the era, the government decided to liberalized the economy through the introduction of Structural Adjustment Program.

During the SAP era of 1986 when the arguments against policies of financial repression were raised. The emphasis of role of the financial sector was made to be increase the volume of savings by creating appropriate incentives to bank customers. Some regulations were cited such as deposit interest and lending interest rate ceiling, minimum/maximum lending rates, and quantitative restrictive on lending, high reserve requirement as causes of negative and unstable real interest rates especially in the presence of high inflation in an economy. Therefore, the Nigeria financial policy adopted SAP in 1986 as a remedy. This led to a serious increase in the deposit interest rate from 9.5 percent to 16.66 in 1993 and lending interest rate increased from 12 percent in 1986 to 39.09 percent in 1993 while the Total Deposit Money Bank Loan and Advances increased from 15.7 Billion to 65.7 Billion in 1993. During this period there was a positive effect on the intermediation roles of the money market, level of savings and investment profiles in the economy. With the deregulation of the economy, interest rate was no longer determined by fiat but the market forces. Onoh(2007) also opined that since 1976, demand deposit has continued to out pace currency as the main component of M1 as currency ratio for M1 began a declining run, reaching its lowest point of 32.3 by the end of 1987, a year after the Nigeria economy was deregulated. In the same period demand deposit ratio for M1 rose relatively and inversely to currency ration and reaching its highest peak 63.0 in 1985 before the decline set in. from 1993, there was actually existence of undefined movement that has no intercept among the deposit and lending interest rate. There was an unsystematic fluctuation of the deposit and lending interest rate, between 16.66 percent in 1993 and 3.58 in 2015, and lending interest rate fluctuated between 36.09 percent in 1993 and 26.71 percent in 2015, while between 1993, and 2015, the changes in total deposit money bank loan and advance was between 65.7 Billion and 13,080.20 Billion. Considering the ill effects of SAP and deregulation era in 1994, there was a policy reverse which introduced some measures of regulation into the financial system. Indirect monetary instruments (Open Market Operations) were initiated in 1993, some other measures of control such as sectorial credit allocation guidelines were applied, Open Market Operation in Treasury Bills was launched in order to regulate the flow of money and credit through market based auction mechanism of government security. In order to facilitate the activities of OMO, Discount House were also licensed as from 1993. The redefinition of quasi money, by the CBN, to include all deposits held with the Merchant Bank obviously helped in the growth of quasi money. Although quasi money grew in the absolute terms with period, it declined slightly between 1992 and 1998 relative to M2, while currency and demand deposit rose in the same period. The distress in the banking system contributed to the heavy withdrawal of deposit and consequent decline in the volume of quasi money. The eventually collapsed of many banks in the 1990's accelerated to exercise dominance over currency and demand deposit, and to constitute a good proportion of M2 (Onoh,2013).

## STATIONARITY TEST

**Table 2:** Augmented Dickey fuller (ADF)SOURCE: E-View Econometric 9.5

VARIABLES	ADF AT	CRITICAL	ADF AT 1st	CRITICAL	ADF AT 2st	CRITICAL
	LEVEL	VALUE	DIFF	VALUE	DIFF	VALUE
		AT 5%		AT 5%		AT 5%
RGDP					-6.903570	-2.957110
DIR			-5.922681	-2.95401		
LIR			-6.491505	-2.957110		
TDMBLA	2.960679	2.957110				

## **Interpretation of Table 2:**

Unit Root Test of deposit interest rate is stationary at  $1^{st}$  difference with ADF of - 5.922681>-2.954021 (critical values at 5% significant level) at absolute value.

Unit Root Test of lending interest rate is stationary at 1<sup>st</sup> difference with ADF of - 6.491505>-2.957110(critical values at 5% significant level) at absolute value.

Unit Root test of Total Deposit Money Bank Loan and advances (TDMBLA) is stationary at a level with ADF of 2.960679>-2.957110(critical value at 5% significant level) at absolute value.

With unit root test of RGDP is stationary at level with ADF of -6.903570>-2.957110 (critical value of 5% significant level) at absolute value.

The above indicates that the variables are not having short-run relationship and in other to avoid spurious results, the researcher then decides to check whether the variables will have a long-run relationship by testing if they are Co-integrated using Erger Greager Method.

## **Table 3: Co-Integration Test**

N<u>ull</u> Hypothesis: RESID01 has a unit root Exogenous: Constant Lag Length: 1 (Automatic - based on SIC, maxlag=8)

		t-Statistic	Prob.*
<u>Augmented Dickey-Fu</u> Test critical values:	ller test statistic 1% level 5% level 10% level	-4.064109 -3.646342 -2.954021 -2.615817	0.0035

\*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation Dependent Variable: D(RESID01) Method: Least Squares Date: 02/24/17 Time: 06:22 Sample (adjusted): 1983 2015 Included observations: 33 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RESID01(-1) D(RESID01(-1)) C	-0.641290 0.433624 46.40416	0.157793 0.167843 485.1582	-4.064109 2.583508 0.095647	0.0003 0.0149 0.9244
R-squared Adjusted R-squared S.E. of regression Sum squared resid Log likelihood F-statistic Prob(F-statistic)	0.363844 0.321433 2783.066 2.32E+08 -306.9855 8.579116 0.001131	Mean depend S.D. depende Akaike info cr Schwarz crite Hannan-Quin Durbin-Watso	ent var iterion rion n criter.	-33.61243 3378.526 18.78700 18.92305 18.83278 2.119641

Source: E-view Econometric 9.5

Using Erger Greager method of testing Co-integration, one will conclude that since Argument Dickey Fuller (ADF) at absolute value is -4.064109 > -2.954021 (critical value at 5% significant level), therefore there is existence of a long-run equilibrium relationship among the four(4) co-integrating variables at 5% significance level and the Nigeria Economic Development is positively affected by the most of the economic variables.

# **Error Correction Model (ECM)**

The Co-integration test result shows that the four (4) variables which do not have short-run relationship Co-integrated or converged at the long-run. This indicates that there is an error

at the short-run and we need to know the speed at which the error could be adjusted and this can only be done with Error Correction Model(ECM)

TABLE 4	
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Dependent Variable: D(D(RGDP)) Method: Least Squares Date: 02/24/17 Time: 06:12 Sample (adjusted): 1983 2015 Included observations: 33 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C D(DIR) D(LIR) TDMBLA	137.5617 66.33393 48.22468 -0.027844	202.4874 95.93327 38.63586 0.042425	0.679360 0.691459 1.248184 -0.656313	0.5025 0.4950 0.2223 0.5170
ECM(-1)	-0.055808	0.049359	-1.130647	0.2678
R-squared Adjusted R-squared S.E. of regression Sum squared resid Log likelihood F-statistic Prob(F-statistic)	0.159063 0.038929 945.0130 25005388 -270.2035 1.324044 0.285413	Mean depend S.D. depende Akaike info cr Schwarz crite Hannan-Quin Durbin-Wats c	ent var iterion rion n criter.	64.97152 963.9621 16.67900 16.90575 16.75529 2.205360

Source: E-View Econometric 9.5

# Interpretation of Analysis and Conclusion

The estimated coefficient for Deposit Interest Rate (DIR) and Lending Interest Rate (LIR) are positively 66.33393 and 48.22468 respectively, indicating that they have positive contribution to the Nigeria Economic Development. This means that when the independent variables DIR and LIR increases, it leads to increase in the dependent variable RGDP and vice versa. While the estimated coefficient for Total Deposit Money Bank Loans and Advances (TDMBLA) has negative coefficient of -0.027884, indicating that there exist an inverse relationship between TDMBLA and Nigeria Economic Development. This means that when TDMBLA increases RGDP will also decreases vice versa.

# Significance of Independent Variables

LIR and DIR with the probability of 0.02223 and 0.4950 respectively have no significant relationship with the RGDP which is not in accordance with the Economic apriori expectation. According to Onoh (2013) the interest rate instrument is more effective in the industrialized economies, where lenders and borrowers react in an elastic manner by any upwards or downwards variations in the rate of interest, even when the variation is as low as 0.25 bases point i.e <sup>1</sup>/<sub>4</sub> of 1% ,if the interest rate is raised, borrowers respond spontaneously by reducing demand for credit and vise versa. In the developing economies where the culture and habit of saving are still to be firmly enthroned and where borrowers are still to feel the pains or understand that they pay penalty cost for borrowed funds, the

interest rate is not a very effective monetary policy instrument of credit control. In the developing economics most borrowers behave indifferently to any rise or full of the rate of interest. In order words they react in an inelastic manner to any change in the rate of interest and are ready to borrow at any rate provided that the fund was available. This is also applicable on the customers deposit and the interest the customers receives on deposit, In developing nations, the interest pays on deposit by the bankers hardly influence the customers attitudes towards the act of depositing money in the bank.

The significant of ECM (-1) holds that a negative and statistically significant error correction model coefficient is a necessary condition for the variables to be Co-integrated. In this study, the ECM is -0.055808. The R-square with the value of 0.159063 is different from Zero satisfies the condition of statistical significance and satisfies the requirement for Goodness to fit. The Co-efficient reveals that the speed of adjustment between the short-run and long-run realities of co-integrating equation is 0.055808percent. The Adjusted R-Squad with the value of 0.038929 shows that 0.038929percent of the total variation in the Nigeria Economic Development (RGDP) is adequately explained by changes in the independent variables. However, this implies that 100percent minus 0.038929percent of these changes experienced by the dependent variable were caused by those variables not included in the model specified. The Probability (F. Statistics) of 0.285413 which is more than 5% level of significant indicates that all the independent variables put together has significant relationship with the Economic Development in Nigeria and finally the value of Durbin Watson(DW) 2.205360 also indicates the absent of positive first order serial correction which means, there is absent of Auto Correlation.

**Table 5: Granger Causality Test** 

Pairwise Granger Causality Tests Date: 02/24/17 Time: 11:04 Sample: 1981 2015 Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
DIR does not Granger Cause RGDP	33	1.35329	0.2748
RGDP does not Granger Cause DIR		1.25859	0.2996
LIR does not Granger Cause RGDP	33	0.12662	0.8816
RGDP does not Granger Cause LIR		0.44910	0.6427
TDMBLA does not Granger Cause RGDP	33	2.21169	0.1283
RGDP does not Granger Cause TDMBLA		14.1557	6.E-05
LIR does not Granger Cause DIR	33	2.25974	0.1231
DIR does not Granger Cause LIR		0.17558	0.8399
TDMBLA does not Granger Cause DIR	33	0.06046	0.9415
DIR does not Granger Cause TDMBLA		0.86104	0.4336
TDMBLA does not Granger Cause LIR	33	0.26245	0.7710
LIR does not Granger Cause TDMBLA		0.22383	0.8009

The result of Granger Causality test equally confirms the result of ECM. The Null hypothesis  $Ho_I$  IS accepted which indicates that Lending Interest Rate does not Granger Cause RGDP with F-start value at 0.12662 and probability value at 0.8816 and Null hypothesis  $HO_2$  is equally accepted which indicated that Deposit Interest Rate value does not Granger Cause RGDP with F-Statistics value at 1.35329 and probability value at 0.2748 and the results are not apriori to economic expectation and does not confirm with the work of Oresotu (2003) which opines that in economic circle, the lending rate creates the prosper which stimulate the banker to offer such services to the borrowers, at the same time the lending rate also serves as stimulus to borrowers regarding its percentage when it is high it discourage the borrowers vice versa. Lower lending rate exposes the borrower to high credit facility and it affects the capital of entrepreneur positively and at the long run improves the profit of such business ventures and at large the national income will improve.

# Recommendations

Based on the results of the analysis, the following recommendations were made;

- 1. The government policy in Nigeria should aim at reducing inflation rate since it is the major factor that influences the value of money in an economy.
- 2. The government and monetary regulatory bodies should reasonable ensure the stability of interest rate policy that will reduce the fluctuation of the lending and deposit interest rate.

- 3. The financial system should encourage interest rate that will be favorable to both the depositors and borrowers.
- 4. Enough awareness should be created by financial institution and policy makers to educate the depositors and borrowers on the merits and demerits of interest rate.

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