

# ASSESSMENT OF THE IMPACT OF INTEREST RATE LIBERALIZATION ON ECONOMIC GROWTH IN NIGERIA: 1970 – 2013

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## Abstract:

Before the liberalization of interest rates in Nigeria, the financial sector was operating under financial regulations and interest rates were repressed. The repression discouraged savings mobilization and investment which consequently retard economic growth. This study examined the impact of interest rate liberalization on Nigeria’s economic growth from 1970 to 2013, using time series data. The Augmented Dicker Fuller unit root test was used to ascertain the stationary levels of the variables, while the Johansen co-integration test was used to test the long term relationship of the variables. The Ordinary Least Square method of estimation was used to analyse the variables. The result of the study revealed that the adoption of interest rate liberalization policy by the Central Bank of Nigeria is significant and do lead to economic growth in the long run. Based on the findings, it was recommended that the Central Bank of Nigeria should bring reforms that would reduce the spread between the lending and the deposit rate and also avoid policy reversal and concentrate her efforts in fine-tuning the existing policy measures.

*Keywords — Interest rate, Liberalization, Economic Growth, Financial Repression, Gross Domestic Product..*

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## I. INTRODUCTION

Interest rate liberalization is a situation whereby the forces of demand and supply were allowed to determine the value of interest rates rather than being determined by the monetary authorities. Before the liberalization of interest rates in Nigeria, our financial sector was operating under financial regulations and interest rates were repressed. McKinnon (1973) and Shaw (1973) were the first to propound theoretical arguments against the policies of financial repression. They argued that financial

repression arises when a country imposes ceiling on deposit and lending nominal interest rates at a low level relative to inflation. The low or negative real interest rates discourages savings mobilization, hence reduces the availability of loanable funds which will discourage investment and consequently leads to a retard economic growth (Ikhida and Alawode, 2001). Both McKinnon (1973) and Shaw (1973) advocated that financial liberalization was needed to remedy the problems caused by the financial repressive policies. Their argument was that government should abolish interest rate ceiling

and allow real interest rates to be determined by the market forces. These they said will lead to increase in savings, investment and ultimately leading to economic growth as well as bring inflation down (Gibson and Tsakaloyos, 1994). Based on this hypothesis, many governments in the developing countries including Nigeria liberated their interest rates with some achieving significant acceleration in economic growth rates, while some did not achieve same result (Soyibo and Olayiwola, 2000).

Following the adoption of the Structural Adjustment Programme (SAP), Nigeria liberalized the sector in August 1987. This policy initiative commenced with the liberalization of interest rate, with the aim of enhancing the ability of banks to charge interest on loans based on the market forces in order to guarantee the efficient allocation of scarce resources (Anthony et al, 2015). With effect from 1<sup>st</sup> August 1987, interest rates became market driven determined by the forces of demand and supply and all controls on interest rates were removed, while the Central Bank of Nigeria (CBN) adopted the policy of fixing only its Minimum Rediscount Rate (Now Monetary Policy Rate) to indicate the desired direction of interest rate changes. This policy was modified in 1989 when the CBN issued further directives on the required spreads between deposit and lending rates (Akpan, 2004).

In 1991, the government prescribed a maximum margin between banks average cost of funds and its lending rate. Partial liberalization was however restored in 1992 when financial institutions were only required to maintain a specific spread between their average cost of funds and their maximum lending rates. The removal of maximum lending rate ceiling in 1993 saw interest rates rising to unprecedented levels in sympathy with rising inflation rate which rendered bank's high lending rates negative in real terms (Obute *et al.*, 2012). However, the Nigerian government in a dramatic policy reversal in January 1994 introduced some measures of regulating interest rate management due to the claim that there were wide variations and unnecessary high interest rates under the complete liberalization of interest rates (CBN, 2010).

Immediately, deposits were once again set at 12% - 15% per annum, while a ceiling of 21% per annum was fixed for lending. The cap on interest rate introduced in 1994 was retained in 1995 with a minor modification to allow for flexibility in which bank deposit and lending rate were largely determined by the forces of supply and demand for funds (Obute *et al.*, 2012).

Total liberalization of interest rate was again adopted in the last quarter of 1996, with banks given the freedom to determine the structure of the interest in consultation with their customers. The apex bank in Nigeria, the Central Bank of Nigeria (CBN) however, retained the discretionary power to intervene in the money market to ensure orderly development in interest rate (Udoka & Anyingang, 2012). Over the years, the Monetary Policy Rate (MPR) has been reduced and increased many times in accordance with the economic situation and what the government wants to achieve. The liberalization exercise has been met with mixed feelings in Nigeria. While some believe it will enhance economic growth, some believed it will mar the economy, and others are of the opinion that liberalization of interest rate is like a double-edged sword which will either stimulate or mar the economy. These contrary opinions about the effectiveness of the deregulation exercise in Nigeria raises issue of the efficacies of the liberalization exercise. It was against this backdrop that this research work sought to assess the impact of interest rate liberalization on economic growth in Nigeria. Based on the background of the study, the following research question emanated:

- i. To what extent has interest rate liberalization influenced economic growth in Nigeria during the pre and post reform period?
- ii. Has interest rate liberalization really spur domestic Savings in Nigeria?

The hypotheses of the study are:

H<sub>0</sub>: Interest rate liberalization has no significant impact on economic growth in Nigeria during the pre and post reform period.

$H_0$ : Interest rate liberalization has no significant impact on domestic savings in Nigeria.

## 2. Literature Review

McKinnon (1973) and Shaw (1973) were the first to seriously challenge the conventional wisdom of financial repression. In their separate works, they argued that the pursuance of policies such as low and administered interest rates, selective credit control, and concessional credit practices, among other practices, leads to widespread financial repression in developing countries. According to these authors, a repressed financial market discourages savings, retards the efficient allocation of resources, increases the segmentation of financial markets, and creates financial disintermediation of the banking system. The McKinnon and Shaw thesis on financial repression and their proposal for financial liberalisation became the new orthodoxy in the 1970s and 1980s. This orthodoxy has brought a shift of emphasis in policy priorities to an extent that it influenced even the thinking of the World Bank and International Monetary Fund (IMF). Financial liberalisation involves six main dimensions: the elimination of credit controls, the deregulation of interest rates, free entry into the banking sector, bank autonomy, private ownership of banks, and the liberalisation of international capital flows. Of these six dimensions, interest rate liberalisation has been the main focus of interest and forms the focus of this study.

### 2.1 Theoretical Review

The main theoretical analysis which provided a rationale for interest rate liberalization as a means of promoting savings and investment and hence economic growth, was postulated by McKinnon (1973) and Shaw (1973). The models they postulated rely mainly on financial repression in the form of ceilings on interest rates on deposits and loans. They argue that real interest rates influence growth in the economy through their effects on savings and investment. That investment demands ( $I$ ) is a negative function of the real interest rate ( $r$ ):

$$I = I(r); I_r < 0$$

and saving(s) is influence not only by the rate of interest but also by the rate of growth of the national income ( $g$ ):

$$S = S(r, g); S_r > 0, S_g > 0.$$

Another perspective of the role of finance in economic growth is the Keynesian perspective. Contrary to the McKinnon- Shaw model, this view argues that investment decisions are primarily determined by the level of confidence, expected demand and the “animal spirit” of the private investor. Underlying this view is the fundamental assumption that it is investment that determines savings and not the other way round. Although, the rate of interest matters in principles, it is regarded as being insignificant as compared with expected demand or demand factors. It further argues that high real interest rate may lead to decrease in investments and hence economic growth.

### 2.2 Interest rate liberalization in Nigeria

Interest rate policy in Nigeria can be discussed under two broad headings, the pre-reform (1970-1985) and post reform (1986-2017), but this study shall focus on the post reform period from 1986 to 2017. The pre-reform period saw different interest rates for different sectors through to mid 1980s. The preferential interest rates were based on the assumption that the market rate, if universally applied, would exclude some of the priority sectors. Interest rates were, therefore, adjusted periodically to promote increase in the level of investment in the different sectors of the economy (Obamuyi, 2009). The Nigerian economy witnessed financial repression in the early 1980s. There were exchange and interest rate control resulting in low direct investments. Funds were inadequate as there was a general lull in the economy. Monetary and credit aggregates moved rather sluggishly. Consequently there was a persistent pressure on the financial system. In response to these developments, the government liberalized the financial sector as part of the Structural Adjustment Program policy package.

### **2.3 Empirical Evidences supporting interest rate liberalization policy**

In a study by Odhiambo (2009), using co-integration, error correction models and data from Kenya, he finds strong support that interest rate liberalization leads to economic growth. He puts a caveat, however, that the strength and clarity of its efficacy are sensitive to the level of the dependency ratio. He concludes that interest rate liberalization leads to economic growth via its influence on financial depth. This he argues applies irrespective of whether the model is static or dynamic. In a similar study on Zambia, Odhiambo (2009), using co-integration based error correction model, finds a strong relationship interest rate liberalization and economic growth. Obamuyi and Olorunfemi (2011) investigated the implications of financial reforms and interest rate behavior on economic growth in Nigeria. Making use of co-integration and ECM data from 1970 to 2006, they found out that financial reform and interest rates have significant impact on economic growth in Nigeria which implies that the behaviour of interest rate is important for economic growth.

Oman Khanlen (2012), examined the financial sector reforms and its effect on the Nigerian Economy. Employing the OLS method and covering the period 1980-2008, it showed a positive impact on the economy of Nigeria even though the lending rate is still so far unstable. Also, Owusu and Odhiambo (2013) employed the autoregressive distributive lag-bounds testing approach to study the impact of financial liberalization on economic growth in Nigeria, between 1969 and 2008. They found long-run relationship between economic growth and financial liberalization represented by an index calculated using principal component analysis.

Asamoah (2008) examined financial liberalization and its impact on savings, investment and the growth of GDP in Ghana. The study made use of monthly data on savings and interest rates, as well as seasonal and yearly dummy variables. Using the ordinary least square (OLS) regression analysis, the results showed that the increase in interest rate over

the post-liberalization years of the financial sector had led to a corresponding increase in savings which in turn had a positive impact on the growth of GDP. It showed that financial liberalization has increased the rate of capital accumulation and improved efficiency in capital utilization which is both essential for economic growth.

Okpara (2010) also investigating the effect of financial liberalization on some macroeconomic variables in Nigeria; RGDP, financial deepening, gross national savings, foreign direct investment and inflation rate were selected and given pre/post liberalization comparative analysis using the discriminant analysis technique. The pre-liberalization period covers 1965-1986 while the post-liberalization period continued from 1987 to 2008. The findings show that the variable that impacts most on the economy owing to financial liberalization is the RGDP which recorded the highest contribution. Thus, confirming previous studies that financial liberalization has a positive effect on the growth of the economy of Nigeria.

Fowowe (2008), conducted an empirical evaluation of the impact of financial liberalization on Nigeria's economic growth and found out that liberalization has exerted a significant positive effect on growth in the long run, thus lending credence to the views that even though financial liberalization might result in financial fragility in the short run, it is growth-enhancing in the long run. Ezeanyesi (2014) assessed the impact of interest rate deregulation in enhancing agricultural productivity in Nigeria from 1986-2010, using OLS method. The findings showed that interest rate deregulation has significant and positive effect on agricultural productivity in Nigeria. He recommends that monetary authorities should ensure appropriate determination of the level of interest rate that will break the double edge effect of interest rate on savings and local investors.

### **2.3 Empirical Evidences against interest rate liberalization policy**

Paul and Dutt (1991) investigated the relationship between interest rate liberalization, effective

demand and economic growth in the Chilean economy find that in Chile, interest rate liberalization failed to promote stable investments and hence economic growth. They conclude that even though interest rates may lower investment and economic growth by exerting downward pressure on effective demand even if interest rate liberalization leads to decrease in borrowing cost.

Anthony *et al.* (2015) also examined the impact of interest and exchange rate on the Nigerian economy for the period of 1975-2008 using Ordinary Least Square techniques of analysis. He found that both interest and exchange rate exerted negative input on the Nigeria economy. Onwumere, Okore and Ibe (2012) studied the impact of interest rate liberalization on savings and investment in Nigeria from 1976-1999 using simple regression model. The study revealed that interest rate liberalization had negative non significant impact on saving, and negative but significant impact on investment in Nigeria. Thus, they concluded that interest rate liberalization though a good policy was counterproductive in Nigeria.

Onaolapo (2008), using data from Nigeria for the period of 1990 to 2006 to evaluate the relationship between financial health variable including interest rate among others and economic growth, found no relationship between the two. However, he found that economic growth leads to improved financial health. Another study, Ogunmuyiwa and Ekone (2010) investigated the impact of money supply and interest rates on economic growth using data from Nigeria for the period 1980 to 2006, which concludes that although money supply and interest rates have positive relationship with economic growth, the relationship is insignificant in the case of gross domestic product growth rates on the choice between contractionary and expansionary money supply.

Anyingba (2012) investigated the effect of interest rate fluctuation on the economic growth of Nigeria from 1970-2010 using time series data and ordinary least square regression analytical technique. He found that there exist an inverse relationship

between interest rate and economic growth in Nigeria. This implies that increase in interest rate will decrease GDP of the country; thus retarding growth of the real sector. Akpan (2004) conducted a study to theoretically and empirically explore the effect of financial liberalization in the form of an increase in real interest rates and financial deepening (M2/GDP ratio) on the rate of economic growth in Nigeria using the endogenous growth model. The finding showed that although interest rate liberalization has a positive impact, it is unlikely to expedite economic growth alone.

## 2.4. Evidences with Mixed Feelings on Interest Rate Liberalization policy

There are some who have mixed feelings towards the hypothesis of McKinnon and Shaw. For instance, Abiodun (1988) believed that the deregulation of interest rate is like a double edged sword which will either stimulate or mar the economy. To him, deregulation of interest rate will increase interest rate, which will induce people to save and funds will be available for investment. However, he stated that high interest rate might bring about cost-push inflation because borrowers will pass the high cost of borrowing to the customers by reflecting it in the price of their goods. He further stated that high cost of borrowing/lending will slow down investment because borrowing will be greatly reduced. Hence he concluded by opining that some measure of control of interest rate will be beneficial if only to deliberately channel investment into some preferred sectors while market forces should serve as checks and balance.

### 2.5.1 Interest Rates Trends and Domestic Savings in Nigeria before and After Liberalization

Interest rate liberalisation in Nigeria started in 1987 when controls on interest rates were completely abolished and licensing of banks were fully liberalised. However, it was not until 1989 that money deposit banks were allowed to pay interest on demand deposit accounts. As observed from Figure 1, the gross domestic savings as a percentage

of GDP increased steadily from 7.8% in 1970 to a high of 18.4% in 1984, then dropping to 17.7 % in 1987 (the years of the policy). This trend continued after the implementation of the policy, dropping to a low of 5.0% in 1996. In 1997, the domestic savings started to increase up to 2001 when it reached 10.3% before falling to 7.0% in 2004.

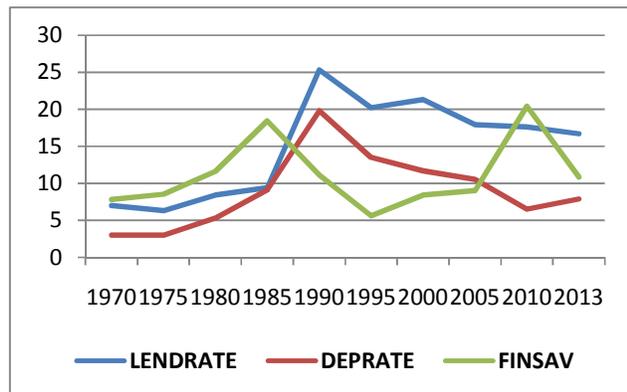


Figure 1. Interest Rates and Financial Savings in Nigeria: 1970 – 2013

From 2005 domestic savings have increased to a record high of 23.2 % in 2009 before falling to 10.8 % in 2013. On average, the domestic savings in Nigeria have decreased by 0.93 % points post liberalization period compared to the pre liberalization period. One can see from figure 2.1 also that deposit rate started from 3.0% in 1970 but ended up at 13.1% in 1987 with a yearly average of 5.4%. By 1990, the deposit rate has risen to 19.8%. The government then intervened in 1991 and pegged the deposit rate at 14.9%. The rate rose to a high of 23.2% in 1993 then dropped to as low as 7.2% in 1996. It later increased to 12.0% in 2008 and then fall to 7.9 % in 2013. The average for the pre-liberalization period is 5.4%. On the other hand, the average for the post-liberalization period is therefore 12.2%. This is about 6.8% points over the pre-liberalization average. Furthermore, the lending and monetary policy rates follow the same trend as the deposit rate. For instance, the lending rate started at 7.0% in 1970 and dropped to 6.0% in 1977, but stood at 14.0 % in 1987 with a pre-liberalization average of 8.3%. In 1990, the lending rate rose to 25.3, but government intervened in 1991 and pegged the lending rate to 20.0%. It

continues to increase reaching 31.7% in 1993 but dropped to 15.5% in 2008. In 2009, it increased to 18.4% and continues decreasing to 16.7 % in 2013 with an average of 19.7% showing an increase of about 11.4% points.

### 2.5.2 Credit to Private Sector, Financial Deepening and Foreign Direct Investment Before and After and Interest Rate Liberalization

The McKinnon-Shaw hypothesis postulates that financial liberalisation will lead to an increase in savings, an increase in investment and hence economic growth. Before the Liberalization period, the credit to the private sector (which is proxy for investment) as shown in figure 2, started from 4.9 % and continued rising up to the year 20.0 % in 1986 before the liberalization period. In 1987 (liberalization year), it fell to 14.4 %. Since then, Credit to the private sector continued falling until in 2007 that it rises to 25.2 % and continued rising till it reached 38.4 % which is the highest. Likewise, the financial deepening started from 10.9 % in 1970. It continued to increase up to 33% in 1984 shortly before the Liberalization. It then fell to 31.5 %. The average financial deepening pre-liberalization is 22.2 %.

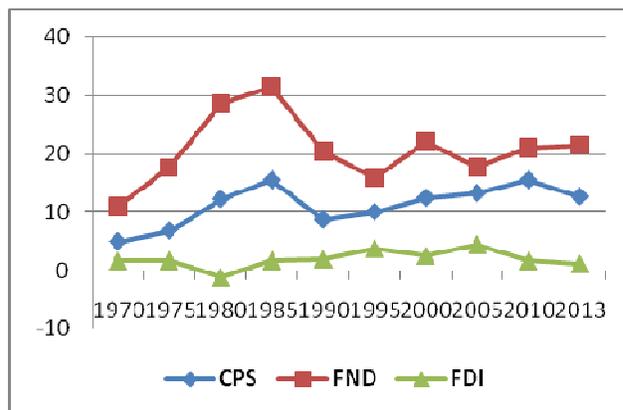


Figure 2. Credit to the Private sector, Financial Deepening and FDI: 1970-2013

In 1987 (liberalization period), financial deepening fell to 25.8 % and continued falling until it began rising to a record of 43.3 % in 2009. Since

then Financial deepening has been falling. By 2013, it stood at 21.5 %. The average for post-liberalization is 22.9%. The shows an increase of 0.7 %. At the same time foreign direct investments (FDI) flow into the country increased from an average of 1.2% of GDP pre the policy to an average of 3.6% of GDP after the policy. The increase in FDI could be attributed to several factors. One factor relates to the increase of investment in the oil industry, and especially the communication sectors of the economy and the flexible exchange rate regime following the implementation of the SAP.

### 2.5.3 Inflation and Economic growth

According to McKinnon and Shaw, the ultimate goal of interest rate liberalization is to generate rapid economic growth. From figure 3, annual GDP growth pre-liberalization was 0.3%, but after the policy, the economy was growing at an average rate of 4.8%. One may notice that the growth rate before liberalization were not steady, with a number of years recording negative growth. In between 1975 and 1987, 8 negative rates were recorded, some as low as -13.1% (1981) while some years recorded as high as 8.3% (1985). However, the post policy period has seen constant positive growth rate from 1988 through to 2013 with the exception of 1991 and 1995 which recorded -0.6 and -0.3 respectively, while some recorded as high as 33.7% in 2004. From there, it dropped until it reached 5.4% in 2013.

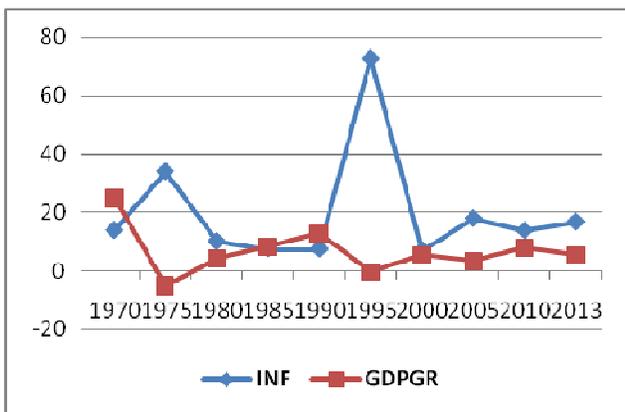


Figure 3. GDP Growth Rate and Inflation in Nigeria: 1970-2013.

This is in conformity with the hypothesis. However, it could also be argued that the growth is not due to financial liberalization but rather it is associated with the increase in government borrowing from international organisations, increase in exports, accumulation of human capital, technological transfer, and accumulation of production process. Also, figure 3 show that inflation rate has increase in the post liberalization period compared to pre liberalization period. It started as 34% in 1975 and declined to 11.3% in 1987. After the implementation of the interest rate liberalization, the rate of inflation increases to 54.5% in 1988 till it reached the highest of 72.8% in 1995 before declining to 11.6% in 2008 and ultimately declined to 8.5% in 2013. From the analysis above, one could see that the implementation of interest rate liberalization resulted to increase in Inflation.

## 3. RESEARCH METHODOLOGY

### 3.1 Method of Data Analysis

The Ordinary Least Square multiple regression estimation technique is used to estimate the parameters of the specified model, owing to its desirable properties (the BLUE properties). The OLS estimation is carried out using econometric views (E-views) software. The estimated model is evaluated using diagnostic statistics such as the t-statistics, coefficient of multiple determination ( $R^2$ ), F-statistics and the Durbin-Watson (d) statistics. These sets of statistics help to ascertain the robustness, reliability and healthiness of the estimated model.

### 3.1 Model Specification

The model used for this research is written thus:

$$GDPGR = \beta_0 + \beta_1RDR + \beta_2RLR + \beta_3INF + \beta_4FDN + \beta_5CPS + \beta_6FDI + \beta_7DSG + \beta_8DUMMY + \mu \dots\dots\dots(1)$$

Where:

GDPGR = Real Gross Domestic Product  
 RDR = Deposit rate  
 RLR = Lending Rate  
 FND = Financial Deepening (proxy by M2/GDP)  
 INF = Inflation  
 CPS = Credit to the Private Sector (% of GDP).  
 FDI = Foreign Direct Investment.  
 DSG = Gross Domestic Savings  
 DUMMY = Capture Policy shift of financial Reform.  
 $\beta_0$  = Intercept  
 $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7, \beta_8$  = Partial Slope Coefficients  
 $\mu$  = Error term or residual

**3.2 A priori Expectations**

In line with economic theory, it is expected that the explanatory variables RDR, FND, CPS, FDI and GDS will have positive relationship with the dependent variable GDPGR, while RLR and INF are expected to have negative relationship with the GDPGR. The a priori expectations are expressed mathematically as follows:

$$\beta_0 < 0 \text{ or } \beta_0 > 0$$

$$\beta_1, \beta_4, \beta_5, \beta_6, \beta_7, \beta_8 > 0$$

$$\beta_2, \beta_3 < 0$$

**3.3 Unit Root Test**

The Augmented Dicker-Fuller (ADF) unit root test is used to conduct a pre diagnostic test to ascertain the underling properties of the time series variables. This test is important because estimating a model in the presence of non Stationary time series variable usually leads to spurious (meaningless) regression output with biased and inconsistence estimates of the standard errors of the coefficients, which could lead to misleading inference. Table 1 shows the summary of the computed Augmented Dicker Fuller Unit Root test for each of the variables.

TABLE 1: Augmented Dicker Fuller Test Unit Root Result

Variables	Level	1 <sup>st</sup> diff	2 <sup>nd</sup> diff	Order of Integration
GDPGR	-1.528530	-6.621063		I(1)
RDR	-2.109014	-6.680473		I(1)
RLR	-1.737766	-7.352501		I(1)

INF	-6.568804	-		I(0)
FDI	-3.737340	-		I(0)
FND	-2.631053	-5.846254		I(1)
CPS	-3.625214	-		I(0)
GDS	-2.071263	-5.381486		I(1)
Critical value @ 5%	-3.518090	-3.520787		

Table 1 show that INF, FDI and CPS attained Stationarity at level, while RLR, GDPGR, FND, DSG and RDR became stationary after first difference. The critical value which forms the bases of the decision making is 5%. The hypothesis of non Stationarity of the variables is therefore rejected because the variables GDPGR, CPS, DSG, RDR, RLR, FND, FDI, and INF all attained Stationarity.

**3.5: Co integration Test**

The Johansen co-integration Test was adopted in the study to check for any unique long-term relationship between the variables. The Johansen co-integration analysis was adopted because it helps to clarify the long run relationship between integrated variables. All the variables are used in this test and the results obtained from the Johansen multivariate co-integration method are represented in table 2.

TABLE 2: Co-integration Rank Test (Trace) for all the Variables

Hypothesized No. of Cointegrated Equation(s)	Eigenvalue	Trace Statistics	5 % Critical Value	Probability Value**
None *	0.903624	263.7448	187.4701	0.0000
At most 1 *	0.649649	165.4861	150.5585	0.0054
At most 2 *	0.588986	121.4357	117.7082	0.0284
At most 3	0.516809	84.09231	88.80380	0.1043
At most 4	0.431058	53.54391	63.87610	0.2710
At most 5	0.351577	29.85685	42.91525	0.5107
At most 6	0.151519	11.66194	25.87211	0.8347
At most 7	0.107168	4.761002	12.51798	0.6310

Note: Trace test indicates 3 co-integrating eqn(s) at 5% level

\* denotes rejection of the hypothesis at the 5% level

\* Mackinnon-Haug-Michelis (1999) p-values

Source: Author’s Computation using E-Views 7 Software

TABLE 3: Co-integration Rank Test (Maximum Eigenvalue) for all the Variables

Hypothesized No. of Cointegrated	Eigenvalue	Maximum Eigen Statistic	5 % Critical Value	Probability Value**
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Equation(s)				
None *	0.903624	98.25878	56.70519	0.0000
At most 1 *	0.649649	44.05038	50.59985	0.2039
At most 2	0.588986	37.34337	44.49720	0.2425
At most 3	0.516809	30.54840	38.33101	0.2956
At most 4	0.431058	23.68706	32.11832	0.3697
At most 5	0.351577	18.19491	25.82321	0.3625
At most 6	0.151519	6.900940	19.38704	0.9074
At most 7	0.107168	4.761002	12.51798	0.6310

Note: Max-eigenvalue test indicates 1 co-integrating eqn(s) at 0.05 level

\* denotes rejection of the hypothesis at the 0.05 level

\* Mackinnon-Haug-Michelis (1999) p-values

Source: Author’s Computation using E-Views 7 Software

From tables 2 and 3, the trace obtained 3 co-integration while the maximum eigenvalue obtain 2 co-integration at the 5% level of significance. Base on these evidences, we reject the null hypothesis of no co-integration vectors and conveniently accept the alternate hypothesis of the presence of co-integrating vectors among all the variables in our model of study. This implies that a long run relationship exist among the variables that have entered the specified model of the study.

### 3.6 Estimated Regression Results

Having ascertained that the variables are stationary and co-integrated, the next step is to estimate the regression results with appropriate differencing of the variables presented in table 4

TABLE 4: Estimated Regression Results  
Dependent Variable: GDPGR

Regressors	Coefficients	Standard Errors	t-Statistics	Probability
C	-157.6800	19079.31	-0.008264	0.9935
D(RDR)	20521.38	8684.267	2.363052	0.0242
D(RLR)	-10454.43	8964.241	-1.166237	0.2519
D(FND)	-9328.711	5127.764	-1.819255	0.0780
D(FDI)	4387.013	5938.008	0.738802	0.4652
D(CPS)	23954.12	5681.195	4.216388	0.0002
D(GDS)	0.110351	0.007401	14.91028	0.0000
D(INF)	-1891.276	1435.886	-1.317149	0.1969
D	808.1998	24002.99	0.033671	0.9733
ECM(-1)	-0.305440	0.146895	-2.079308	0.0454
$R^2 = 0.70$				Adjusted $R^2 = 0.62$
F-Statistics 8.636802 Prob(probability) (0.000000)		S.E. of Regression = 72193.67		D.W (d) = 1.93

Source: Author’s computation with the use of E-View 7 software.

Where D=Dummy variable; D=1 for period with the policy and 0 otherwise.

### 3.7 Discussion of Results

Results from table 4.5 shows that the estimated regression model satisfied the a priori expectations except the financial deepening (FND) which is negative; thus contrary to the a priori expectation. The Real deposit rate (RDR), credit to the private sector (CPS), gross domestic savings (DSG) and foreign direct investment (FDI) were all found to be positive, and at 5% level of significance impacted significantly on the GDP growth rate (GDPGR). The negative coefficients of real lending rate (RLR), Inflation (INF) and financial deepening (FND) imply that they retard growth during the periods under review. The coefficient of determination ( $R^2$ ) of 0.70 show that the independent variables of the estimated model are responsible for about 70% variations in the GDPGR while the remaining 38% variations are explained by the residual term. These show that all the data for the model are strongly fitted. The F-statistics value of 86% shows that RDR, RLR, FND, FDI, CPS, GDS and INF are jointly significant to influence the GDPGR. The results revealed that financial deepening (FND) has negative effect on economic growth in Nigeria during the period under review. This could be due to the weak financial system in Nigeria. As Taylor (2004) observed, if financial markets are weak, the effectiveness of transmitting policy through interest rates will be limited. Thus, there is the need for the financial system to be well developed so that it can efficiently and cheaply mobilise and allocate funds within the system to guarantee reasonable returns for savers and investment needs of the borrowers in order to contribute to economic growth. The negative coefficients of interest rate (RLR) and inflation rate (INF) imply that they retard growth during the period under consideration. The dummy variable which was use to capture the shift in policy before and after the implementation of the interest rate liberalization policy in Nigeria shows that the policy has a positive relationship with GDPGR after the introduction of the policy; thus adjudge to have an enhancing effect on GDPGR.

### **3.8 Policy Implications**

The policy implications drawn from this study are that, there were significant increases in the GDPGR in Nigeria as a result of interest rate liberalization policy. These are not unconnected to the fact that a flexible (liberalized) interest rate attracts more savings which invariably brings about a boost in investment that also catalyzes the GDPGR which is proxy for economic growth. In view of the findings of this study, it is therefore suggested that the policy of interest rate liberalization should be pursued as it is beneficiary to economic growth in Nigeria. Though, more needs to be done to realise its full potentials such as; increasing the country's financial deepening which is presently weak; improving the effectiveness of credit to the private sector, government should put in place adequate monetary measures to check inflationary trend in the economy, as well as innovating incentives that will encourage savings, also ensuring conducive macroeconomic climate as well as tackling security challenges for business confidants among investors in other to attracts inflows of foreign direct investment.

### **4. Conclusion**

The study focused on the impact of interest rate liberalization on economic growth in Nigeria. The empirical findings show that the impact of interest rate liberalization policies on economic growth in Nigeria is significant and positive. The results from Nigeria do support the McKinnon (1973) and Shaw (1973) hypothesis that in the long run, interest rate liberalization will ultimately lead to rapid economic growth. The study therefore concludes that the policy of interest rate liberalization policy has fare better than the repressive policy; hence interest rate policy should be pursued. However, the liberalization policy may not optimally achieve its goal if factors such as terrorism, political instability, political unrest and the degree of democracy, which may have impact on economic growth, especially in a developing country like Nigeria are not tackled.

### **4.1 Recommendations**

Based on our study, it is obvious that the McKinnon–Shaw hypothesis holds true for Nigeria but the magnitude of impact still leaves much to be desired. In view of the above findings, we therefore recommend that;

- i. Given the high spread between the real lending rate and the real deposit rate, the monetary authority should bring policy measures that would increase the deposit rate which will encourage saving; thereby making credit availability. Also, policies that could bring the lending rate down to encourage investment in the domestic environment. This is important because when the lending rate is too high, it scare and discourage genuine investors from accessing credits from banks and subsequently decrease productive activities in the economy.
- ii. Money deposit banks should be encouraged to extend more credits to the private sector, but the business community needs to be more enlightened on the need to invest such credits in productive ventures that will influence economic growth in the long run. This will require developing and empowering of the relevant institutions. As pointed out by Prasad and Rajan (2008) a successful implementation of financial policy depends on the level of institutional and economic development before the policy is implemented.
- iii. In order to consolidate the gains of the liberalization policy, government should avoid drastic policy reversal but rather, it should concentrate efforts in fine-tuning the existing policy measures which will not only compel prudence on the part of major operators in the financial market but also will stimulate saving behaviour of all economic agents. This will go a long way at enhancing fund's mobilization in the country. Government should evolve policies to maintain sound macroeconomic stability and create environment that will help business investments to thrive. A conducive environment is a sine qua non for private investments that will contribute meaningfully to economic growth.
- iv. The government should improve the country's security environment and its

infrastructural base. An environment that has little or no security treats will encourage investors into the country. Also, Power and access roads should be improved upon to create an enabling environment for investment to thrive. The monetary authorities should support the liberalization exercise by evolving complementary financial sector reforms. This is a way to ensure that the benefits of the liberalization exercise are maximized.

v. Given the fact that income plays an important role in the saving function, it is recommended that government should formulate policies that could increase employment in order to generate income to the people. Increase in income couple with high deposit rate would encourage savings; thereby making credit available for loan and investment.

vi. The central Bank of Nigeria should encourage the commercial banks to innovate incentives for the populace to encourage savings. This is very crucial because, even with high income and high deposit rate, the propensity to save is very low in Nigeria. This lack of saving culture has really affected the efficacy of the liberalization policy in Nigeria.

vii. Overall, interest rate liberalisation policies have been supportive but more needs to be done by the authorities in Nigeria to realise its full potential effects on economic growth. These can be done by increasing financial deepening and the removal of bottlenecks in the financial sectors of the economy as well as ensuring the macroeconomic climate is conducive to attract inflows of FDI into the country.

## REFERENCES

- [1] Akpan, D.B. (2004). "Financial Liberalization and Endogenous Growth: The Case of Nigeria" African Institute of Economic Development and Planning Dakar, 6(3), pp 1- 93.
- [2] Abiodun, M. (1988). Interest Rate Deregulation and Investment in Nigeria. *Journal of Economic and Management Studies*, 2(1).
- [3] Anthony, O., Jonathan, E.O., & Oyinye, I.A. (2015). "Financial Liberalization and Economic Growth in Nigeria: Empirical Evidence". *International Journals of Economic and Financial issues*, 5(3), pp 663-672.
- [4] Ayingang, R., & Udoka, C. (2012). "The Effect of Interest Rate Fluctuation on the Economic Growth of Nigeria". *International Journal of Business and Social Science*, 3(20).
- [5] Asamaoh, G.N. (2008). "The Impact of Financial Sector Reforms on Savings, Investment and Growth of Gross domestic Product in Ghana". *International Business and Economic Research Journal*, 7(10), pp 73-84.
- [6] Central Bank of Nigeria Statistical Bulletin and Annual Reports: Various Issues, 2010.
- [7] Ezeanyesi, C.I. (2014) "An Assessment of the Impact of Interest Rate Deregulation in Enhancing Agricultural Productivity in Nigeria". *Journal of Economics and Sustainable Development*, 5(8).
- [8] Fowowe, B. (2008). New Estimates of the Effect of Financial Liberalisation on Economic Growth in Nigeria. *Savings and Development*, 31(3), 2025-225.
- [9] Gibson, H.D., & Tsakalotos, E. (1994). "The Scope and Limits of Financial Liberalization in Developing Countries: A Critical Survey". *Journal of Development Studies*, 31(3), pp. 578-628.
- [10] Ikhide, S. I., & Alawode, A.A. (2001). "Financial Sector Reforms, Macroeconomics Instability and the Order of Economics Liberalisation: The Evidence from Nigeria". *African Economic. Research Paper 112: ISBN 9966-944- 53-2*.
- [11] Johansen, S., & Juselius, K. (1990). Maximum Likelihood Estimation and Inference on Cointegration with Application to the Demand for Money. *Oxford Bulletin of Economics and Statistics*, 52, pp.169-210.
- [12] McKinnon, R.I. (1973). "Money and Banking in Economics Development: An Empirical

- Examination”. Washington D.C. the Brookings Institute.
- [13] Obamuyi, T.M., & Olorunfemi, S. (2011). “Financial Reforms, Interest Rate Behaviour and Economic Growth in Nigeria”. *Journal of Applied Finance and Banking*, 1(4), pp. 39-55.
- [14] Odhiambo, N.M. (2009) “Interest Rate Reforms, Financial Deepening and Economic Growth in Kenya Experience”. *Journal of Development Areas*, 43(1), pp.295-313.
- [15] Ogunmuyiwa, M.S., & Ekone, A.F. (2010). “Money Supply-Economic Growth Nexus in Nigeria”. *Journal of Social Sciences*, 22(3), pp. 199-204.
- [16] Okpara, G.C. (2010). “The Effect of Financial Liberalisation on Selected Macroeconomic Variable: Lesson from Nigeria”. *International Journal of Applied Economic and Finance*, 2(3), pp.1-9, 2010.
- [17] Omankhanle, A.E. (2010). “The Financial Sector Reforms and their Effect on the Nigerian Economy”. *Economy Transdisciplinarity Cognition*, 15, pp.45-57.
- [18] Onaolapo, A.A. (2008). “Implications of Capital Regulation on Banking Financial Health and Economic Growth”. *Journal of Economic Theory*, 2(3), pp. 112-117.
- [19] Onwumere, J.U.J., Okore, O., & Ibe, G. (2012). “The Impact of Interest Rate Liberalization on Savings and Investment: Evidence from Nigeria”. *Research Journal of Finance and Accounting*, 3(10).
- [20] Obute, C., Adyorough, A., & Itodo, A.I. (2012). “An Assessment of the Impact of Interest Rate Deregulation on Economic Growth in Nigeria”. *Journal of Business and Organisational Development*, 2(2), pp.9-30.
- [21] Owusu, E.L., & Odhiambo, N.M. “Financial Liberalization and Economic Growth in Nigeria”. *Journal of Economic Policy Reform*, 17(2), pp.164-177,2013.
- [22] Paul, B. & Dutt, A. (1991). “Interest Rate Policy, Effective Demand and Growth in LDCs”. *International Review of Applied Economics*, 5, pp. 127-154.
- [23] Soyibo, A., & Olayiwola, K. (2000). “Interest Rate Policy and the Promotion of Savings, Investment and Resource Mobilisation in Nigeria”. Research Report 24, Development Policy Centre, Ibadan, 2000.