

Financial Liberalization Economic And Growth in Nigeria (1987-2013).

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Abstract: *The paper attempts to evaluate the relationship between financial liberalization and economic growth in Nigeria using data spanning (1987-2013). Secondary were collected from the Central Bank of Nigeria Statistical Bulletin and National Bureau of Statistics. Hypotheses were formulated and tested using time series econometrics model and the study reveals that the variables do not have unit roots. There is also long-run equilibrium relationship between financial liberalization and economic growth in Nigeria and the result confirms that about 73% short-run adjustment speed from long-run disequilibrium. The coefficient of determination indicates that about 63% of the variations in economic growth can be explained by changes in financial liberalization variables. There is no causality between financial liberalization and economic growth in Nigeria. The study therefore recommends that, strong macroeconomic policies such as (monetary and fiscal) should be pursued to maintain and stabilize the economy. Monetary authorities should lay down strict prudential rules and regulations to stabilize and strengthen the banking industry. The monetary authority (CBN) should implement policies that will increase the flow of investable funds and improves the capacity of banks to extend credit to the economy.*

Keywords: *Financial, Liberalization, Economic, Growth, Nigeria.*

I. Introduction

The search for ways of improving the standard of living of citizens has opened the corridors for alternative view points on paradigms of economic growth and development (Nzotta, 2014). Therefore, financial liberalization had been identified as one of those strategies whose implementation can quicken the pace of development and the effects of this strategy need to be determined and examined from time to time especially for developing economies like Nigeria. Consequently, financial liberalization had created an opportunity for increasing global financial services and also posed a serious challenge to the developing countries due to their fragile financial systems, which makes them vulnerable to external financial shocks (Sulaiman, Oke and Azeez, 2012). Financial liberalization is the removal of all restrictions, controls, regulations and distortions imposed by the government on financial assets and its prices. Okpara (2010) observed that, financial liberalization grants market forces a dominant role in setting financial asset prices and returns, allocating credit, and developing a wider array of financial instruments and intermediaries. He also noted that, the wave of liberalization in many developing countries in the 1980s was characterized by more attention given to market forces in allocating credit through freely determined interest rates.

Khazri and Djelassi (2011) asserted that financial liberalization policy would increase savings which consequently spurs investment and induce economic growth and development. They also argued that higher interest rates brought about liberalization that will lead to a more efficient allocation of resources, higher level of investment, economic growth and development. The focus of liberalization has been to replace the severely constrained command and control system with a relatively liberalized regime with prices reflecting economic costs (Ogwumike and Ikenna 2012). Financial liberalization has become an important economic policy package in both advanced and advancing countries, for more than a decade now (Nzotta and Okereke, 2009). Financial liberalization in developing countries has been cited as a necessary and significant part of an economic policy package and promoted by what used to be called the Washington consensus (Bakare, 2011). The developing countries, in order to revamp their economy, decided to implement the economy recovery programme famously called Structural Adjustment Programme introduced by the Bretton Woods institutions (World Bank and International Monetary Fund) aimed at liberalizing prices in distress and melt-down economies (Okpara, 2010). The adoption of this programme signals the phasing out of financial repressive policy in the economy (Akingunola et al, 2013).

Financial liberalization serves as a panacea to financial constraints in a financial repressed economy and under the financial repression regime. The monetary authorities imposed high reserve requirements, bank-specific credit ceilings, selective credit allocation, mandatory holding of treasury bills, bonds issued by the government, and finally, a non-competitive and segmented financial system (Omoke, 2010). Theories of financial repression associated especially with McKinnon and Shaw postulated that administrative control of financial markets by the government distorts interest rate and the resultant effect of this is that savings is discouraged, consumption is encouraged and the quantity of investment is crippled (Al-Sowaidi and Darrat, 2010). Okpara (2010) stressed that following the globalization trend, Nigeria embraced the Structural Adjustment Programme (SAP) in 1986 as a corrective measure to the deteriorating economic situation. The real Gross Domestic Product (GDP) growth rate averaged was only 1.5% per annum before that period SAP thereby registering negative growth rate during that period (Obamuyi, 2009). The SAP was proposed as an economic package to rapidly and effectively transform the Nigerian economy and the basic thrust of the economic reforms embodied in SAP is deregulation, particularly financial deregulation (Ogwunike and Ikena, 2012).

In Nigeria, after the introduction of financial liberalization policy (relaxation of bank rules), the number of banks increased from 41 in 1986 to about 120 in 1992 but eventually was hit by arising systematic risk that pruned down the number banks to 26 and they were liquidated in 1996. By 1998, about 60 banks were also liquidated, and non-performing loans in that period stood at N44.5 billion which latter rose to N49.6 billion in 2004 and these severe problems led to the bank re-capitalization to N25 billion by the Nigerian monetary authorities (Ogwunike and Ofoegbu, 2012). However in Nigeria, after the introduction of financial liberalization policy, the domestic economy has failed to experience impressive performance such as attraction of foreign investment or halt capital flight (Okpara, 2010). Financial liberalization generates tremendous financial booms and busts in the short-but these booms and busts have not intensified in the long-run and the debate over the macro-economic effect of financial liberalization on developing economies remains a controversial issue (Bakare, 2011).

Various studies conducted in Nigeria by Okpara (2010); Bakare (2011); Ogwunike and Ikenna (2012); Obamuyi (2012) and Akingunola et al (2013) reveal that, there is a positive significant relationship between financial liberalization and economic growth in Nigeria. While some other studies witnessed in South Africa by Kabango and Paloni (2011); Tswamuno et al (2013) and Bashar and Khan (2013) of Bangladesh and Khazri and Djelassi (2011) of Pakistan posit that there is a negative significant relationship between financial liberalization and economic growth in their various countries with similar time series data. However, Onwioduokit and Adamu (2005); Babajide (2010) in their study concluded that financial liberalization and economic growth have no consistent relationship in Nigeria. While Nzotta and Okereke (2009) also stated that the financial system had not sustained an effective intermediation, especially credit allocation and a high level of monetization. However, one of the notable achievements of financial liberalization policy under the structural adjustment programme in 1986 was the removal of restriction on domestic and international monetary transactions that enhance savings and allocation efficiency by financial intermediaries which leads to economic growth and development (Nzotta, 2014).

Consequently, financial liberalization also promotes international competition for funds, fosters specialization, attraction of foreign investment, availability of credit facilities to the investors and thereby allocates capital towards the most productive projects and it also facilitates financial development which in turn could positively affect productivity in the economy. Unfortunately, despite these prescribed remarkable achievements of the policy, the Nigerian economy had failed to experience impressive performance and the economy has continued on the brink of collapse with volatility in virtually all major macroeconomic aggregates as a result of infrastructure inadequacy, widespread corruption, political instability, inefficiency in the public sector and low degree of private sector participation in economic activities and reduction of savings accompanied by liquidity trap, capacity under-utilization, low rate of capital formation, etc. With these challenges, the hope of achieving economic growth through financial liberalization continued to diminish and therefore, these conflicting results and problems create a knowledge gap in this subject area and it is against this background that the study attempts to assess the relationship between financial liberalization and economic growth in Nigeria.

II. Theoretical Framework

The theoretical framework underlining this study is the financial liberalization theory by McKinnon (1973) and Shaw (1973) and the theory advocated that financial liberalization is necessary to address the problems caused by the repressive financial policies of developing economies. McKinnon (1973) emphasized a fundamental way on the financial savings that guarantees growth and its further emphasize that governments must remove all barriers faced by financial intermediaries. According to Shaw (1973), financial liberalization is characterized by easing the functioning of the financial market by removing all obstacles as described by McKinnon (1973). And this goal is achieved primarily through a policy of financial liberalization in the context

of perfect financial markets, which replaces the policy of financial repression as adopted by several developing economies. According to Qazi and Shahida (2013), during the years that followed the publication of the work of the pioneers of the school of financial repression by McKinnon (1973) and Shaw (1973), financial liberalization has been exploited as a step through to end the regime of financial repression and a starting point for the development and sustained growth of the economy. In addition, the liberalization of financial markets also contributes to the development of financial markets by financing sound investments.

They also contended that controlled lending and deposit rates would lead to non-price rationing of credit, which could result into repressed financial system and slow growth of the economy. However, financial liberalization would not only propel financial allocation efficiency of credit from the productive sectors to the unproductive sectors, but would also deepen the financial sector savings (deposits liabilities) role through a positive real interest rate (Nzotta, 2014). This is a complementary hypothesis between real money balance and investment and under this hypothesis, liberalization reforms will cause interest rate to be positive, which in turn increases savings liabilities, and credit allocation efficiency that eventually transform to real investments and increase output and economic growth. Financial liberalization in so many parts of the globe (especially the emerging economies) had led banking sectors to a remarkable number of problems some of which erupted in full-fledged systemic crises as documented in the extensive studies of Kammoun and Mamoghli (2011).

According to the financial liberalization theory, financial repression through interest rate ceilings keeps interest rates low and this discourages savings with the consequence that the quantity of investment is stifled. The quality of investment is also low because the projects that will be undertaken under a regime of repression will have a low rate of return. With financial liberalization, the interest rate will rise, thereby increasing savings and also investment. The increased investment results in the rationing out of low-yielding projects and subsequently undertaking high-yielding projects. Consequently, the quality of investment rises and this will ultimately increase economic growth and development in the economy. McKinnon and Shaw (1973) therefore advocated the liberalization of such repressed financial systems so as to promote economic growth and development. Nzotta and Okereke (2009) earmarked that, financial systems have long been recognised to play an important role in economic growth and development and the benefit derivable from a healthy and developed financial system relates to savings mobilisation and efficient financial intermediation roles in the economy.

Financial institutions create liquidity in the economy by borrowing and lending activities and also reduce information cost, provide risk management services and reduce risk involved in financial transactions. Based on these expectations, developed and developing countries, Nigeria inclusive had implemented financial liberalisation under different financial structures and macroeconomic conditions. Bakare (2011) stated that, prior to the introduction of Structural Adjustment Programme (SAP) in Nigeria in 1986, the Nigerian financial sector was characterised by rigid exchange and interest rate controls, mandatory sectoral allocation of bank credit and quantitative ceiling in bank credits to the private sector, all of which engendered distortions and inefficiencies that resulted in low direct investment. Funds were inadequate, the Nigerian currency was overvalued and the monetary and credit aggregates moved rather sluggishly and the economy was found engulfed in a general lull Ogwumike and Ikenna (2012). Financial liberalization is a deliberate attempt to move away from financial repression as a policy to fund government fiscal imbalances and subsidize priority sectors and more strongly advocated by the influential work of McKinnon (1973) and Shaw (1973). According to them, financial repression is the process of forcing financial institutions to pay low and often negative real interest rates, reduces private financial savings, thereby decreasing the resources available to financial capital accumulation. Both of them agreed that, economic development is severely hindered in a repressed financial system by the low level of savings and investment opportunities.

III. Empirical Review

Okpara (2010) conducted a study both theoretically and empirically explore the effect of financial liberalization in the form of an increase in real interest rates and financial deepening (M_2/GDP ratio) on the rate of economic growth in Nigeria using the endogenous growth model and the study use time series annual data covering the period from 1970-2002. The Error Correction Model (ECM) was used to capture both the short and long-run impact of the variables in the model. The finding shows a low coefficient of the real deposit rate which implies that interest rate liberalization alone is unlikely to expedite economic growth. Overall, the results show a positive impact on the economy of Nigeria. Sulaiman, Oke and Azeez, (2012) examined the impact of financial liberalization on the conduct of banking business and its effect on the real sector. Quarterly data from 1987q₁ to 2011q₃ for the following variables: gross domestic product, commercial bank credit to the industrial sector, premium on official exchange rate, lending rate, and inflation rate were analyzed using the vector autoregressive (VAR) methodology. Their finding shows that financial liberalization has promoted efficiency gains in the banking industry and consequently, the increased growth of credit to the private sector following financial liberalization leads to economic growth of credit of a positive impact and supports the McKinnon- Shaw Hypothesis.

Akingunola et al (2013) also investigated the effect of financial liberalization on some macroeconomic variables in Nigeria. Real GDP, financial deepening, gross nation saving, foreign direct investment and inflation rate were selected and given pre/post liberalization comparative analysis using the discriminants analysis technique. The pre-liberalization period covers (1965-1986) while the post-liberalization period continued from (1987-2008). The findings show that the variable that impacts most on the economy owing to financial liberalization real GDP which recorded positively the highest contribution. This implies that financial liberalization positively increases the growth of the economy and the study of Omoke (2010) analyzed the impact of financial liberalization on economic growth in Nigeria through Johansen co-integration test using time series data from (1965-2005) while also investigating the determinants of economic growth. The financial liberalization index was represented by the financial restraints index which includes interest rate controls, reserve requirements and directed credit multiplied by one. The results suggest that financial liberalization has positive and statistically significant impact on economic growth measured by the gross domestic product in Iran. The findings provide support Mckinnon (1973) and Shaw (1973), who argued that financial liberalization can promote economic growth by increasing investment and productivity.

Bashar and Khan (2013) in their econometric study of Bangladesh evaluated the impact of liberalization on the country's economic growth by analyzing quarterly data from (1987Q₁-2013Q₂) using co-integration and error correction method. The variable used was per capita GDP gross investment as a share of GDP. Labour force as a share of population, secondary enrolment ration, trade openness indicator, real rate of interest and net capital inflows, the empirical results show that coefficient of the financial liberalization policy variable (real interest rate) is negative and significant, implying that financial liberalization has had negative effect on Bangladesh's economic growth. The study discards the fact that financial liberalization foster economic growth as asserted by Mckinnon and Shaw (1973). Khazri and Djelassi (2011), examined the relationship among capital account liberalization, economic performance and macroeconomic stability in Pakistan using the VAR methodology, two models were constructed with a de-jure index of financial liberalization which includes GDP nominal, exchange rate, country risk and interest rate and another with a de-facto index of financial integration including GDP nominal exchange rate, inflation rate and interest rate. The study data spans from 1994Q₂-2009Q₄. Their results offer no evidence that financial liberalization has generated positive effects on inflation and economic growth. Apart from raising the rate of inflation, it has an adverse effect on exchange rate.

Qazi and Shahida (2013), empirically investigated the impact of financial liberalization on economic growth in 10 new European Union countries and Turkey between 1995 and 2007. They constructed different financial openness indicators using panel data for different types of financial flows such as foreign direct investment, other investments, portfolio investments, trade openness index as well as other control variables, employing the ordinary Least Square (OLS) method their static robust and dynamic panel data estimates indicates clear evidence between the long-run growth and a number of financial liberalization indicators which confirms the anticipations of the new growth theory. Their findings take cognizance of financial liberalization as a policy tool because of its possibility to promote economic growth. Wizarat (2013) used panel data to assess the effects of financial liberalization policies in the growth of 19 countries in sub-Saharan Africa for period 1978-2000. Two indexes and a dummy variable for financial liberalization (assigning value of zero prior to liberalization and I after liberalization) were constructed. The control variables were initial income per capita, investment life expectancy degree of openness, and the debt service ratio, the study employed both the Fixed Effects and Dynamic panel Estimator and also Ordinary Least Square Method and Random Effects estimations to assess the sensitivity of the results. The estimate shows a negative significant relationship between economic growth and financial liberalization policies. The study provides evidence to validate the growth-stimulating effect of financial liberalization.

Asamoah (2008) assessed financial liberalization and its impact on savings investment and the growth of GDP in Ghana. The data used included monthly savings and interest rates and also yearly and seasonal dummy variables instead of post and pre-liberalization as the dummies. The empirical estimation of 42 observations, January 2000 to June 2003 was evaluated using the ordinary Least Square (OLS) regression analysis, the results show that the rise in interest rate over the years after liberalization of the financial sector has led to a corresponding savings which has a positive impact on the growth of GDP. The findings showed that financial liberalization has increased the rate of capital accumulation and improved efficiency in capital utilization which is both essential for economic growth. Adam (2011) investigated the impact of Ghana's financial openness induced growth on poverty using the Johansen Co-integration test and Granger-Causality test. The study was limited to the period from 1970 to 2007. Annual Standard of living Index (SLI) was proxy for poverty and the financial liberalization index was constructed using Principal Component Analysis (PCA). The results showed that there is a positive relationship between growth and standard of living, though it is disproportionate. Also it provides evidence that there exist a positive long-run relationship between growth and

financial liberalization. This means that Ghana's financial liberalization has contributed positively towards its economic growth.

Kabango and Paloni (2010) examined the impact of financial sector liberalization measures on household sector savings rate in South Africa by constructing a continuous time series financial liberalization index which includes total credit to household sector by bank and other financial institutions, foreign investment, market capitalization ratio and real effective exchange rate. The study covered the period 1970/1971-1999/2000. The financial liberalization index along with other determinants of household savings was estimated using the VAR methodology, it was deduced from the findings that the financial liberalization index has a negative impact on household saving rate due to the fact that the increased credit availability as a result of financial liberalization had led to increase in consumption rather than savings; evidence from this study provide argument to nullify the Mckinnon-Shaw complementary hypothesis which asserts that financial liberalization is capable of increasing savings and economic growth and financial repression will do otherwise.

Financial liberalization in so many parts of the globe (especially the emerging economies) has led banking sectors to a remarkable number of problems, some of which, erupted in full-fledged systemic crises as documented in the extensive studies of Kammoun and Mamoghli (2011) and in a number of case; for example, in Chile in 1981, banking sector problems emerged shortly after the financial sector liberalization. In fact the issue of financial liberalization has remained controversial especially for the developing countries. Sulaiman, Oke and Azeez (2011) contended that, financial liberalization is not risk-free and should be carefully implemented to attain its benefits. Excessive rapid financial reforms often lead to unsustainable credit and activity booms which then lead to financial crisis. These risks increase significantly in the absence of prudential regulation and strong supervision of banks and other liberalized capital market segments. Okpara (2010) recommends that governments pursuing financial liberalization should set up an agency that will forestall bank failure.

IV. Methodology

The study adopted ex-post-facto research design. Secondary data were collected from national bureau of statistics and central bank of Nigeria statistical bulletin (1987-2013) and used; and the study also considered using annual data, because quarterly data may not be accessed for some of the variables. The GDP 1990 at current market price was employed as the dependent variable to measure the rate of economic growth, while credit to the private sector, aggregate bank deposits and foreign direct investment were also employed as independent variables to measure financial liberalization as indicated in **appendix 1**.

V. Model Specification

The study also adopted Juselius (1990) and Johansen's (1991) multivariate co-integration procedure and the co-integration tests are based on vector error correction model (VECM):

$$\Delta Y_t = \delta_0 + \sum \delta_i \Delta Y_{t-1} + \beta Y_t + \mu_t \dots \dots \dots (1)$$

Where, Δ is the first difference operator, Y_t represents (ABD_t, CPS_t, FDI_t) , δ_0 represents the intercept, and μ represents the vector of while noise process. The matrix β consists of r ($r \leq 1$) co-integrating vectors. Matrix \square contains the error parameters and the Johansen and Juselius co-integration procedure yields two statistics (i.e maximum eigenvalue and the trace statistics). The study estimates the following VECM to determine the long and short-run dynamics between financial liberalization and economic growth.

$$\Delta GDP_t = \alpha + \sum_{i=1}^b \square_i \Delta ABD_{t-1} + \sum \square_i \Delta CPS_{t-1} + \sum \square_i \Delta FDI_{t-1} + \square R_{t-1} \dots (2)$$

Where Δ stands for difference operator; GDP represents economic growth and financial liberalization represent (ABD_t, CPS_t, FDI_t) , the error correction term assesses the deviations of the variables from the long-run equilibrium relationship.

- Where: GDP = Gross Domestic Product
 ABD = Aggregate Bank Deposits
 CPS = Credit to the Private Sector
 FDI = Foreign Direct Investment

VI. Estimation Technique

Estimating the VECM proceeds in the following manner, Pre-test for stationary, lag-length, and test for co-integration and this is to ensure that the variables are stationary and that shocks are only temporary and will dissipate and revert to their long-run mean. The test for stationarity or unit roots employed for this study was the Augmented Dickey-Fuller (ADF) and Philips-Perron (PP) tests which was performed on the variables at levels

and first differences. Co-integration requires that all the variables be integrated of the same order and to test for unit roots, we used the ADF to test the null hypothesis of $H_0: \gamma = 0$ in

$$\Delta y_t = \beta_0 + \beta_1 y_{t-1} + \delta y_{t-1} + \sum_{t=1}^b \alpha_t \Delta y_{t-1} + \varepsilon_t \dots \dots \dots (3)$$

To examine whether a unit root exist, the ADF test assumes the asymptotic normality of the idiosyncratic error term, ε_t , in (3). The choice of lag-length may be decided using Sims likelihood ratio test and the appropriate lag length is important as too many lags reduce the power of the test due to the estimate of additional parameters and a loss of degrees of freedom. In contrast, too few lags may not capture the dynamics of the actual error correction process, resulting in poor estimates and its standard errors.

VII. Research Hypotheses:

- H₀₁:** There is no long-run relationship between financial liberalization and economic growth in Nigeria.
- H₀₂:** There is no causality between financial liberalization and economic growth in Nigeria.

VIII. Explanation of Variables

Aggregate Bank Deposit is the total flow of funds in form of demand deposit held by banks and banks mobilize deposits from the general public such as individuals, business, government, parastatals, non-profit making associations etc. as part of their intermediation functions. However, for the purpose of this study aggregate bank deposits was chosen to reflect the impact/extent of financial liberalization on economic growth in Nigeria. Aggregate bank deposit was also used to measure the level of financial deepening in the economy as a result of liberalization policy (M_2/GDP). Because an increase in bank deposit will lead to an increase in funds that will be available to investors in the form of loan, which in turn, enhance economic growth and development. Credit to the Private Sector (CPS) is used as an indicator of financial intermediation that has some advantages more importantly; it excludes credit to the public sector as well as credit issued by the central bank. This financial indicator (CPS) has been previously used in investigating the relationship between financial liberalization and economic growth in Nigeria. We interpret higher CPS/GDP as an indicator of more financial services and, therefore, greater financial intermediation. Investment (INV) is used as the expenditure on fixed assets (buildings, plant and machinery, vehicles, etc.) either for replacement or adding to the stock of existing fixed assets. It s measured as the ratio of gross capital formation to GDP. According to Gbosi (2008), “foreign direct investment involves the setting up new factories by foreign nationals in another country.” An increase in foreign direct investment leads to increase in GDP growth and as a consequence, economic growth. According to Gbosi (2008), foreign direct investment involves the setting up of new factories by foreign nationals in another country. Foreign direct investment is the inflow of capital from abroad and is effective in Nigeria because of financial liberalization policy. Foreign direct investment also used to measure the performance of Gross Domestic Product (GDP) in Nigeria became increase in FDI will result to increase in GDP and economic development.

IX. Data Analysis and Results

The test for stationary of the variables was done using the Augmented Dicker Fuller (ADF) Unit Root Tests. The results in **table 1** show that all the variables are integrated of order one i.e. 1(1) at the 5% level of significance. Notes: (1)*1% level of significance, **5% level of significance, ***10% level of significance.(2)The tests accepted at 5% level of significance. (3)Decision rule -The critical value should be larger than the test statistical value for unit root to exist.

Table 1: Unit Root Tests Analysis

The ADF Unit Root test for Stationarity						
Variables	(with constant, no trend)		With Constant and Trend		Order of Integration	Decision
	At Level	First Difference	At Level	First Difference		
GDP	** -3.30472	** -10.35238	** -4.17040	** -10.45640	1(1)	Stationary
ABD	-1.219722	** -4.506493	-2.402723	** -4.664460	1(1)	Stationary
CPS	-1.123973	** -4.074232	-1.388240	** -4.065040	1(1)	Stationary
FDI	-2.345833	** -4.208397	-1.553294	** -4.312462	1(1)	Stationary
Critical values	1%	-3.4289	-3.4353	-4.0412	-4.0505	
	5%	-2.2472	-2.7499	-3.8426	-3.2468	
	10%	-2.1118	-2.8133	-3.5032	-3.1056	

Source: Researcher’s Estimation using E-views 5.0

Note: * (**) denotes rejection of hypothesis at 5% (1%) significance level.

Test for Co-integration

Having found that all the variables are integrated and stationary, the next step is to perform Johansen co-integration procedure to ascertain whether GDP, credit to the private sector (CPS), aggregate bank deposit (ABD) and foreign direct investment are co-integrated. The results of the test are presented in **table 2** and the null hypothesis of no co-integration among the variables (that is, $r=0$) is tested against the alternative hypothesis of co-integration among the variables (that is $r=1$). The null hypothesis of no co-integration is rejected at the 5 percent significance level. However, the null hypothesis that $rd \geq 1$ could not be rejected against the alternative $r=2$, suggesting the presence of a unique co-integrating relationship among variables. Therefore a long run relationship exists among the variables as indicated by the likelihood ratio that is greater than the critical values both at 1 percent and 5 percent level of significance in **table 2**.

Table 2: Multivariate Johansen's Co-integration Test Result. Lags interval: 1 to 2

Null hypothesis	Alternative hypothesis	Eigen value	Likelihood ratio	Critical values 5%	Critical value 1%	Hypothesized No. of CE(s)
$r=0$	$r=1$	0.7147	68.5938	47.31	67.31	None **
$rd \leq 1$	$r=2$	0.5202	36.1206	38.42	40.62	At most 1
$rd \leq 2$	$r=3$	0.4082	22.03769	19.36	24.31	At most 2
$rd \leq 3$	$r=4$	0.2247	16.0468	10.62	13.43	At most 3

Source: E-views Econometrics 5.0

Note: * (**) denotes rejection of hypothesis at 5% (1%) significance level.

Vector Error Correction Model

The existence of long-run co-integrating equilibrium provides for short-run fluctuations and in order to straighten out or absolve these fluctuations, an attempt was made to apply the Error Correction model (ECM). The Error Correction coefficient contains information about whether the past values affect the current values of the variable under study. A significant coefficient implies that past equilibrium errors play a role in determining the current outcomes and the information obtained from the ECM is related to the speed of adjustment of the system towards long-run equilibrium and the short-run dynamics are captured through the individual coefficients of the difference terms.

Table 3: Vector Error Correction Estimates

Variables:	Coefficient	Std. Error	t-Statistic	Prob.
(ECM _t)	-0.731762	-0.423205	0.000771	-0.010008
D(GDP(-1))	-0.155939	-1.064438	-0.000384	0.002548
D(GDP(-2))	-0.490521	-3.865473	0.000163	0.008540
ABD(-1)	0.200110	-0.98673	0.319891	0.18297
CPS(-2)	1.013521	-0.611899	-2.72E-07	0.000245
FDI(-3)	1.246699	-0.641147	-5.58E-07	0.000335
C	0.482898	-2.20139	-1.48661	0.004808
R-squared	0.627145	Mean dependent var		0.014004
Adj. R-squared	0.581216	S.D. dependent var		0.336903
S.E. of regression	4.010042	Akaike Info. Criterion		5.855418
F-statistic	6.764345	Schwarz criterion		6.304378
Log likelihood	-147.5450	Durbin-Watson Stat.		1.991375
Prob.(F-statistics)	0.165618			

Source: E-views Econometrics 7.0

From table 3, the error-correction coefficient is statistically significant and has a negative sign, which confirms a necessary condition for the variables to be co-integrated. This also implies that the speed with which credit to the private sector, aggregate bank deposit and investment, adjust from short-run disequilibrium to changes in economic growth in order to attain long-run equilibrium is 73% within one year. The coefficient of determination ($R^2 = 0.627145$), while the adjusted $R^2 = 0.581216$ which indicates that about 58% of the variations in economic growth is explained by the combined effect of changes in financial liberalization variables (ABD, CPS, FDI) in Nigeria. This implies that a good portion of economic growth trends in Nigeria is explained by financial liberalization variables. The F-statistics of 6.764345 which is statistically significant (F-probability = 0.165618) at 5% confirms the impact of financial liberalization on economic growth in Nigeria: that is, the influence of the explanatory variables on the dependent variable is statistically significant, and finally, the value of Durbin-Watson (DW=1.99) indicates absence of autocorrelation.

Causality Test

Table 4:Result of Pair wise Granger-Causality Test (1987-2013) with 2-period Lag length

Null Hypothesis:	Obs	F-Statistic	Probability	Decision
ABD does not Granger Cause GDP	25	0.53341	0.59209	No causality

GDP does not Granger Cause ABD		0.26105	0.77100	No causality
CPS does not Granger Cause GDP	25	0.71194	0.49881	No causality
GDP does not Granger Cause CPS		0.70791	0.50074	No causality
FDI does not Granger Cause GDP	25	0.65778	0.52533	No causality
GDPR does not Granger Cause FDI		0.19534	0.82362	No causality
CPS does not Granger Cause ABD	25	8.10562	0.00154	Causality
ABD does not Granger Cause CPS		3.43103	0.04552	Causality
FDI does not Granger Cause ABD	25	0.12642	0.88174	No causality
ABD does not Granger Cause FDI		0.02083	0.97943	No causality
FDI does not Granger Cause CPS	25	0.22949	0.79634	No causality
CPS does not Granger Cause FDI		0.05048	0.95088	No causality

Note: The decision rule of a causality test states that if the probability value of the estimate is higher than the 5 percent (or 0.05) level of significance, we accept the null hypothesis, and vice versa

To determine the direction of causality between the variables, the Engle and Granger (1987) causality test was performed on the variables as indicated in **table 4**. The Granger causality investigated the predictive content of one variable beyond that inherent in the explanatory variables itself. The results of the Granger causality test indicate that economic growth (GDP) has no causality with ABD (aggregate bank deposits), FDI (foreign direct investment) and CPS (credit to the private sector). This implies that there is no causality between financial liberalization variables and economic growth of Nigeria. Moreover, the results also show that aggregate bank balances has bi-directional causality with credit to the private sector. This indicates that, the increase in aggregate bank deposits will have a positive impact on credit to the private sector that will lead to the growth and development of the economy and verse versa.

X. Summary of Findings

The ADF test for stationary proves that the variables used for the analysis are integrated in the order of one i.e., $I(1)$ which implies that the variables do not have unit roots and thus suitable for time series analysis. The purpose is to overcome the problem of spurious regression that often associated with non-stationary time series characteristics of the data. The co-integration analysis indicates that there is long-run equilibrium relationship between financial liberalization and economic growth in Nigeria. The error correction estimates gave evidence that the error-correction coefficient is statistically significant and the result confirms about 73% short-run adjustment speed from long-run disequilibrium. The value of R^2 indicates that about 63% of the variations in economic growth can be explained by changes in financial liberalization variables (ABD, CPS, FDI) in Nigeria. The Granger causality test reveals that there is no causality between financial liberalization and economic growth in Nigeria. However, aggregate bank deposits and credit to the private sector granger cause each other which, implies that there is interplay between the total bank deposits and intentions of investors to float or raise funds through the money market. Consequently, financial liberalization does not have causality with economic growth. Some factors may be responsible for this development in Nigeria, such as inconsistency of government policies, economic and political instability, inability to implement the formulated policies, absence of vibrant regulatory, etc.

XI. Conclusion and Recommendations

In any modern economy, a vibrant financial system is a catalyst for economic growth and development (Nzotta, 2014). From the findings above, this study, therefore, recommends that strong macro-economic policies (monetary and fiscal) should be pursued to maintain and stabilize the economy. The regulatory and supervisory framework for the financial sector should be strengthened. One way to achieve this is by laying down strict prudential rules and regulations to strengthen and stabilize the banking industry. The policy towards interest rate should be made such that savings would be stimulated thereby placing more funds in the hands of banks to intermediate to investors seeking funds. Also lending rate should be reasonable so as not to deter investors to borrow and embark on viable investment projects. Government should create conducive business environment to encourage both local and foreign participation in investment thereby engendering economic growth and development. Proper integration of the financial sector should be ensured by the government so that financial units can be strategically positioned and capable to intermediate funds. CBN should implement policies that will increase the flow of investable funds that will improve the capacity of banks to extend credit to the economy. CBN should also promote healthy competition in the banking industry so as to improve the efficiency of banks in rendering financial services to the public.

XII. Contribution to Knowledge

The study was able to re-modify the vector error correction model and expanded the existing literatures, empirical review and geographical spread. This updated data that will enable researchers and scholars to use it for further studies. Consequently, from the results, this study has also contributed to

knowledge by discovering that Nigerian economy has no direct causality with financial liberalization policy and the factors responsible for this can be traceable to economic and political instability and inability to implement the formulated policies by the regulatory authorities.

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Appendix 1: Financial Liberalization and Economic Growth (1987–2013)

YEAR	GDP at Current Market Rate (N' Billion)	Aggregate Bank Deposit (N' Billion)	Credit to Private Sector (N' Billion)	Foreign Direct Investment (N' Billion)
1987	193.13	15.09	21.08	4.6
1988	263.29	18.40	27.33	3.3
1989	382.26	17.81	30.40	13.4
1990	472.65	23.14	33.55	35.0
1991	545.67	30.36	41.35	44.2
1992	875.34	43.44	58.12	43.4
1993	1,089.68	60.90	127.12	32.2
1994	1,399.70	76.13	143.42	33.8
1995	2,907.36	93.33	180.00	42.3
1996	4,032.30	115.35	238.60	181.4
1997	4,189.25	154.06	316.21	179.2
1998	3,989.45	161.93	351.96	161.4
1999	4,679.21	241.60	431.17	510.6
2000	6,713.57	343.17	530.37	774.7
2001	6,895.20	451.96	764.96	1181.7
2002	7,795.76	566.01	930.49	1013.5
2003	9,913.52	655.74	1,096.54	1065.1
2004	11,411.07	797.52	1,421.66	2478.6
2005	14,610.88	1,316.96	1,838.39	3715.2
2006	18,564.59	1739.64	2,290.62	5617.3
2007	20,657.32	2,693.55	3,668.66	6570.3
2008	24,296.33	4,118.17	6,920.50	7341.5
2009	24,794.24	5,763.51	9,110.86	6547.8
2010	54,204.80	5,954.26	10,157.02	5411.3
2011	63,258.58	6,531.91	10,660.07	5829.8
2012	71,186.53	8,062.10	14,649.28	7395.3
2013	80,222.13	8,606.61	15,778.31	7034.4

SOURCES: (i) National Bureau of Statistics (various issues).
(ii) Central Bank of Nigeria Statistical Bulletin (various issues).