



Financial Liberalization and Nigerian Economic Growth: 1990-2018

Omopintem, Jerome Idowu¹ and Chukwu, Kenechukwu Origin^{2*}

¹*Federal Inland Revenue Service, Lagos State, Nigeria.*

²*Department of Banking and Finance, Nnamdi Azikiwe University, Awka, Anambra State, Nigeria.
5025, Awka, Nigeria.*

Authors' contributions

This work was carried out in collaboration between both authors. Author OJI designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Author CKO managed the analyses of the study and managed the literature searches. Both authors read and approved the final manuscript.

Article Information

DOI: 10.9734/AJARR/2019/v6i230148

Editor(s):

- (1) Alfredo Jimenez Palmero, Assistant Professor, University of Burgos, Spain.
- (2) Dr. Folk Jee Yoong, Lecturer, SEGi University, Malaysia.

Reviewers:

- (1) Emmanuel Dodzi. Kutor Havi, Methodist University College, Ghana.
- (2) Tihana Škrinjarić, University of Zagreb, Croatia.
- (3) Natalya Ketenci, Yeditepe University, Turkey.
- (4) Ivan Milojevic, University of Defence, Belgrade.

Complete Peer review History: <http://www.sdiarticle4.com/review-history/51329>

Review Article

Received 12 July 2019
Accepted 16 September 2019
Published 27 September 2019

ABSTRACT

This study examined the Effect of Financial Liberalization on Nigerian Economic Growth (1990-2018) using secondary data from Statistical bulletin of Central Bank of Nigeria. The research work selected Nigeria as its sample and used the ECM to test the effect of the independent variables (Foreign direct investment, Interest rate, Trade openness, Foreign portfolio investment, Currency exchange rate Aggregate savings) on the dependent variable, economic growth (proxy by Gross Domestic Product). The study found that financial liberalization had negative and insignificant effect on economic growth of Nigeria. The study therefore recommends among others that Government should aim at creating conditions which make private investment attractive, avoid drastic policy reversal and implement appropriate interest rate policies.

Keywords: *Financial liberalization; economic growth.*

*Corresponding author: E-mail: mojes2005@gmail.com;

1. INTRODUCTION

Financial liberalization is an important economic policy in both developed and developing countries just as the developing countries regard it as a way to open up their economy for investment and development.

Nigerian financial sector was greatly regulated leading to financial repression which hindered the growth of the economy. Prior to the introduction of Structural Adjustment Program (SAP) in Nigeria in 1986, the Nigerian financial sector was characterized by rigid and relatively low interest rate which led to financial disintermediation due to the low savings and demand deposits. Decline in financial intermediation leads to decline in the activities of the banking system since it is the most vital role of banks. In addition aggregate credit ceiling to the private sector, loans to rural borrowers and the compulsory sectoral allocation of bank credit leads to distortion in credit allocation.

With the globalization trend, Nigeria introduced the SAP in 1986 as a remedial measure to the deteriorating economic condition. The fundamental drive of the economic restructuring embodied in SAP is financial deregulation [1]. In other words the main objective of the adjustment programme is the liberalization of financial markets, which has been recommended as a policy to overcome the problems of financial resources and in general entails interest rate deregulation and abolition of the policy of directed credits. In 1991 financial sector liberalization was embarked upon in Nigeria. As a result, interest rates were liberalized by changing from an administered interest rate setting to a market-based interest rate determination; credit controls were also removed by eliminating directed and subsidized credit schemes. In fact, open market operation was used to replace credit ceiling; prudential regulations were also put in place; entry and exit from the financial sector were also liberalized just as government owned-banks were also privatized.

Despite the financial liberalization of interest rate in 1991 Nigerian economy has failed to experience remarkable performance such as attraction of foreign investment or halt capital flight. Evidence in Nigeria implied that neither the domestic savings nor investment have significantly increased since the introduction of SAP reform programme. Further so the banking

sector has remained largely oligopolistic and uncompetitive. Few large banks control the greater segment of the market in terms of total assets, total liabilities and total credits in the banking system. The debate over the effect of financial liberalization on developing economics remains a controversial issue. This work therefore aims at finding out the effect of financial liberalization on Nigeria economic growth. The following sections of this work include: conceptual framework; theoretical framework and empirical review of related works. Others are methodology and data presentation; discussions, conclusion and recommendations.

2. LITERATURE REVIEW

According to Kaminsky and Schmukler [2] financial liberalization consists of deregulation of the foreign sector capital account, domestic financial sector, and the stock market sector viewed separately from the domestic financial sector. From this definition, they put forward that full financial liberalization occurs when at least two of the three sectors are fully liberalized and the third one is partially liberalized.

Liberalization can simply be said to mean a shift from direct policy and regulatory controls to market driven behavior to set prices and to allocate resources [3]. Financial liberalization as used here refers to the planned and systematic removal of regulatory controls, structures, and operational guidelines that may be considered inhibitive of systematic growth, competition and efficient allocation of resources in the financial system [4]. From the above definitions, it is obvious that financial liberalization focuses on abolishing controls that restrict financial activities and allowing the market forces (forces of demand and supply to interplay) to serve as the price mechanism for financial services. Financial liberalization can be termed to mean the deregulation of the financial system.

Most arguments in support of liberalization claimed that increased competition in banking sector and the introduction of market principles increases interest rates on deposits thereby leading to higher saving rates. This, sequentially, increases the amount of funds available for investment. Financial liberalization helps in opening up the capital account, capital inflows (in terms of both credit and equity investment) the increase in this inflows will help provide the resources needed for investment and growth. With financial liberalization the increased

competition puts pressure on profit margins of banks, in particular on their lending rates. This in turn decreases the cost of debt for firms leading to a rise in investment and growth.

Risk diversification is made possible with financial liberalization as financial institutions such as banks as well as (international) equity investor's finds way to spread their investments. The subsequent reduction in equity costs and lending rates leads to a rise in investment and growth. Financial liberalization helps in financial intermediation between savers and investors. The high real interest rates and development increase the incentive to save and invest, stimulates investments due to an increased supply of credit and raises the average efficiency of investment.

Finally, if banking sector is liberalized, banks are encouraged to become more efficient by improving on overall bank management, reducing overhead costs, improving risk management, and offering modern financial instruments and services to the market to keep up with competitors. All these effects will assist in improving the efficiency of financial intermediation in a country, contributing to higher returns on investment and, thus, to higher rates of economic growth and development.

With the above mentioned arguments in favour of financial liberalization more negative voices have supported the fact that financial liberalization has led in many cases to disappointing results, even to financial and economic crises. Stiglitz [5] points out that financial liberalization as such does not solve the problem of asymmetric information. As such it may prevent financial intermediation from becoming more efficient in a liberalized market.

Another problem of financial liberalization is that it may actually worsen information problems. When financial markets become liberalized and competition is increased, the increased competition may decrease relationship lending, since borrowers may have more opportunities and they will look for less expensive way of financing their investment. However, a reduction of relationship lending also destroys information capital and thus increases asymmetric information [6]. The increased competition in financial markets that comes as a result of liberalization may also entail a decline in profit margins and an increased financial fragility of financial intermediaries such as banks. Hellmann

et al. [7] argue that liberalization reduces the franchise value of banks, which makes them more prone to financial trouble and encourage risk taking in order to try to increase profits under the pressure of falling interest rate margins. Reduced margins may motivate banks to spend less on screening and monitoring efforts, and they may be more willing to opt for a gambling strategy when allocating loans, i.e., putting more emphasis on profit and less on risk. Accordingly, financial liberalization may trigger crises if it leads to too much risk taking under the pressure of increased competition [8]. Finally, increased risk taking in financial markets and the resulting increase in the number of bank failures and other institutions may be independent sources of bank runs [9]. Bank runs are another source of financial instability, even in a situation where some banks may be economically viable.

The gross domestic product (GDP) which is proxy for economic growth is one of the primary indicators used to determine the health of a country's economy. It represents the total money value of all goods and services produced over a specific period, you can think of it as the size of the economy. Uwakaeme [10] states that GDP is a type of economic tool utilized by governments and economists as a means of measuring or attributing a value to the final goods and related services within a defined economy in a stated period.

There are three ways in which GDP can be determined, all of which should, in principle, give the same result. They are income approach, production (output or value added) or the expenditure approach.

2.1 Theoretical Framework

Theoretical review shows the theories guiding the study which are Mckinnon and Shaw Hypothesis, International capital assets pricing model and Dual Gap theory.

Mckinnon and Shawn Hypothesis: Mckinnon's thesis is based on the complementarity hypothesis which argued that there is a complementarity between money and physical capital, which is reflected in money demand.

Their analyses concluded that alleviating financial restrictions in such countries (mainly by allowing market forces to determine real interest rates) can exert a positive effect on growth rates as interest rates rise toward their competitive

market equilibrium. The early hypotheses of McKinnon and Shaw assumed that liberalization, which would be associated with higher real interest rates - as controls on these are lifted— would stimulate saving. The underlying assumption is, of course, that saving is responsive to interest rates. The higher saving rates would finance a higher level of investment, leading to higher economic growth. Therefore, according to this view, we should expect to see higher saving rates (as well as higher levels of investment and growth) following financial liberalization.

Hence, Mckinnon-Shaw [11] viewed financial liberalization as: Market-determined interest rates; Greater ease of entry into the banking sector to encourage competition; The elimination of directed credit programmes; Reduced fiscal dependence of the state on credit from the banking system (to allow for greater expansion of credit to the private sector); The integration of formal and informal markets; A movement towards equilibrium exchange rates and, eventually, flexible exchange rate regimes with open capital accounts [12].

McKinnon [11] and Shaw [13] argued that policies leading to the repression of financial markets reduce the incentive to save. They described the key elements of financial repression as: High reserve requirements on deposits, Legal ceilings on bank lending and deposit rates, Directed credit, Restriction on foreign currency capital transactions, Restriction on entry into banking activities.

International Capital Asset Pricing Model:

This Model suggest in line with De Santis [14] “that international investors should hold assets of each country in proportion to the country’s share in the world market portfolio”, which signifies that in a world without transaction and information costs, would hold the same portfolio and would diversify their investment in other countries in proportion to the size of their financial markets. In this respect, global indices such as the popular Morgan Stanley Capital International (MCSI) All Country World Index (ACWI), Data stream Global index, Standard and Poor’s (S&Ps) Global index which is usually reported by the IMF Coordinated Portfolio Investment Survey (CPIS), are widely used by investors as their performance benchmarks for the global asset portion of their equity portfolio. Lintner [15] and Sharpe [16] added a key assumption to Markowitz model on this which states that “there is borrowing and

lending at a risk-free rate” which is the same for all investors and does not depend on the amount borrowed or lent. This goes a long way in promoting trade liberalization through financial integration [17].

The Dual Gap theory: This theory proposed that, to achieve a reasonable level of development in an economy, investment is a key player. However, such investment cannot be successively achieved without huge domestic savings meaning that for a country to achieve a sustainable level of development, investment and huge domestic savings in required. However, in attaining comprehensive growth, this domestic savings and investment is not sufficient enough hence there is need to borrow fund from abroad. This implies that the combination of domestic savings, investment and foreign borrowed fund is a function of economic growth as opted in this theory [18].

2.2 Empirical Review

Akpan [19] did a study on the effect of financial liberalization on the rate of economic growth in Nigeria using the endogenous growth model. Time series data covering the period from 1970 – 2002 was used for the study. The Error Correction Model (ECM) was used as the method of data analysis in other to capture the long run and short run effect. The finding of the study revealed a low coefficient of the real deposit rate which implies that interest rate liberalization alone is unlikely to accelerate economic growth. Generally, the results show a positive impact on the economy of Nigeria.

Okpara [1] explored the effect of financial liberalization on some macroeconomic variables in Nigeria. Real GDP, foreign direct investment, gross national savings, financial deepening and inflation rate were the variables selected for study. Pre/post liberalization comparative analysis was done using the discriminant analysis technique. The pre-liberalization period covers 1965 – 1986 while 1987 to 2008 was the post-liberalization period. The findings show that the variable that impacts most on the economy owing to financial liberalization is the real GDP which has a positive coefficient. This implies that financial liberalization has positive effect on the economy.

Kaita [20] investigated financial liberalization and economic growth: An empirical analysis (1981-2012). The study shows that there is long run

and short relationship between financial liberalization and economic growth. ARDL framework was used as method of data analysis. The study uses three measures as proxies to indicate the degree of financial liberalization: KAOPEN-a financial openness index; money supply as a ratio of GDP, M2; and credit to the private sector as a ratio of GDP, CPS. The results obtained shows that there is a positive and significant relationship between financial liberalization and economic growth.

Sulaiman et al. [21] examined the effect of financial liberalization on the economic growth in Nigeria using financial deepening (M2/GDP) and degree of openness as financial liberalization indices, the findings showed the existence of a long-run equilibrium relationship among the variables.

Omankhanlen [22] investigated the effect of financial sector reforms and on the Nigerian Economy. OLS was used as the method of analysis 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. Hence, the author concluded that the financial sector reforms in the financial sector are not solely responsible for the sector being better off.

Owusu and Odhiambo [23] studied the impact of financial liberalization on economic growth of Nigeria 1969 to 2008. Autoregressive distributive lag-Bounds test was used as method of data analysis. The study revealed a long-run relationship between economic growth and financial liberalization represented by an index calculated using principal component analysis. They substantiated the results from Omankhanlen [22], that financial liberalization policies have a positive and significant effect on economic growth in Nigeria – both in the short run and in the long-run.

Orji et al. [24] studied financial liberation and economic growth in Nigeria: An empirical evidence. The study employed index of financial liberalization from 1981 to 2012 to investigate its impact on economic growth in Nigeria using the McKinnon–Shaw framework. Co-integration and ordinary least squares methodology were used as method of data analysis. The result reveals that financial liberalization (FINDEX) and private investment (PINV) have positive and significant impact on economic growth in Nigeria. However, real lending rate (LDR) proved to be negatively

related to economic growth in Nigeria within the period under review.

Madubuko [25] examined the effect of financial sector liberalization on the economic growth of Nigeria from 1980 to 2013. The Vector Error Correction Model was employed, which was conducted after checking the stationarity using Augmented Dickey-Fuller (ADF) test and ensuring the existence of cointegration of the variables by Johansen co-integration test. The study showed that financial sector liberalization has positive effect on Nigeria economic growth.

Odili and Ariwa [26] investigated the impact of financial system liberalization, Savings and Investment on the economy of Nigeria. The selected indicators of financial liberalization used are ratio of liquid liabilities to GDP (M2GDP) and real interest rate (INT). Explanatory variables are savings (SAV) and investment (INV). Time series data from 1970 to 2014 was employed in the estimation of variables after ensuring that the data series was stationary using the Augmented Dickey Fuller unit root test (ADF). The results of the study revealed that the explanatory variables were able to influence the growth process positively and significantly in Nigerian economy except interest rate which had negative impact and the dummy variable that was not significant.

Nwadiubu et al. [27] examined the impact of financial liberalization and economic growth –The Nigerian experience. The study employed an empirical examination using the Johansen Co-integration test and the Error Correction Mechanism (ECM). Data for the analysis was obtained from Central Bank of Nigeria Statistical Bulletin from 1987 to 2012 on the variables used for the study. The results from the study shows the existence of a long-run equilibrium relationship among the variables and co-integration equation at 5% significance level. The Error Correction Mechanism shows that financial liberalization has negative and insignificant relationship with Nigerian economic growth.

Akingunola et al. [28] examined the effect of the financial liberalization on economic growth (1976-2006). The Vector Error Correction Model was employed, which was carried out after ensuring the stationarity and existence of cointegration of the variables. The financial liberalization development was proxied by ratio of liquidity that is liabilities to GDP, real interest rate, and total deposit while the economic growth was measured by the real GDP. The study

shows the existence of long run relationship and co-integration among the variables. The result of VECM revealed that financial liberalization has insignificant effect on GDP.

Fowowe [29] investigated financial liberalization and financial fragility in Nigeria (1975-2005). Using an index which measures the gradual progression and institutional changes involved in financial liberalisation, this paper conducts an empirical evaluation of the impact of financial liberalisation on financial fragility in Nigeria. The results show that liberalisation has exerted a significant negative effect on financial fragility in both the short run and long run.

Kasekende and Atingi-Ego [30] examined the impact of financial liberalization on the conduct of banking business and its effect on the real sector in Uganda. Quarterly data from 1987Q1 to 1995Q3 for the following variables: Gross Domestic Product, Deposit Money Bank Credit to the Industrial Sector, Premium on Official Exchange Rate, Lending Rate, and Inflation Rate were analyzed using the Vector Autoregressive (VAR) methodology. The study revealed a positive impact and therefore supports the McKinnon-Shaw Hypothesis.

Banam [31] explored the impact of financial liberalization on economic growth in Iran. Johansen Co-integration test using time series data from 1965 to 2005 was used for the analysis while also examining the determinants of economic growth. The result shows that financial liberalization has positive and statistically significant impact on economic growth measured by the gross domestic product in Iran. The findings provide support to McKinnon [11] and Shaw [11], who argued that financial liberalization can promote economic growth by increasing investment and productivity.

Bashar and Khan [32] examined the impact of liberalization on Bangladesh economic growth by analyzing quarterly data from 1974Q1 – 2002Q2 using Co-integration and Error Correction Method. The variables used was per capital GDP, gross investment as a share of GDP, labour force as a share of population, secondary enrolment ratio, trade openness indicator, real rate of interest and net capital inflows. The results of the analysis show that the coefficient of real interest rate is negative and significant, implying that financial liberalization has had negative effect on Bangladesh's economic growth. The study rejects the fact that financial

liberalization foster economic growth as stated by McKinnon and Shaw.

3. METHODOLOGY

The study obtained data from statistical bulletin of the Central Bank of Nigeria from 1990 to 2018. The study employed descriptive statistics in order to describe the variables used in the study. Since the study involves time series data, unit root test was carried out using Phillips-Perron (PP) and the Augmented Dickey-Fuller (ADF) in order to determine the stationarity of variables. Error correction mechanism (ECM) was used as method of data analysis since it helps to indicate the speed of adjustment which restores equilibrium in the model. Structural analysis was also carried out to find out which variable of financial liberalization has much impact on the economy.

The study following the thought of McKinnon and Shaw is modeled as follows:

$$GDP = f(FDI, INTR, CEXR, TROP, AGRS, FPI) \tag{1}$$

Where:

- GDP = Gross Domestic Product
- FDI = Foreign Direct Investment
- INTR = Interest Rate
- CEXR = Currency Exchange Rate
- TROP = Trade Openness
- AGRS = Aggregate Savings
- FPI = Foreign Portfolio Investment

Converting Equ.1 to the mathematical/econometric form by the introduction of the (α_0) and error term (μ) thus:

$$GDP = \alpha_0 + \alpha_1 FDI + \alpha_2 INTR + \alpha_3 CEXR + \alpha_4 TROP + \alpha_5 AGRS + \mu \tag{2}$$

- α_0 = Constant Term
- $\alpha_1 - \alpha_5$ = Coefficients of Predictors

4. DATA PRESENTATION AND ANALYSIS

The characteristics of the data series used in the analysis are presented in table 1. The table shows the summary of descriptive statistics used in the analysis. The mean value was shown to be 33289.12 for GDP, 4823.492 for FDI, 0.424860 for TROP, 115.3980 for CEXR, 3889.354 for AGRS, 18.85752 for INTR and 1761.632 for FPI. The median value was shown to be 11411.07 for

GDP, 654.2000 for FDI, 0.417800 for TROP, 125.8331 for CEXR, 797.5200 for AGRS, 17.9800 for INTR and 92.50000 for FPI.

The variables for the analysis were subjected to two types of unit roots test to determine whether there are unit roots or stationary series. In

conducting this test, the Phillips-Perron (PP) and the Augmented Dickey-Fuller (ADF) unit root test with intercept would be employed to determine the stationarity of data. The unit root text from Tables 2 to 5 shows that the variables are stationary at first difference which allow for ascertaining the cointegration relationship.

Table 1. Descriptive statistics

	Mean	Median	Maximum	Minimum	Std.Dev	Obs
GDP	33289.12	11411.07	127762.5	472.6500	40254.54	29
FDI	4823.492	654.2000	71273.80	22.20000	14110.41	29
TROP	0.424860	0.417800	0.687700	0.180472	0.136270	29
CEXR	115.3980	125.8331	305.5827	8.037800	83.04930	29
AGRS	3889.354	797.5200	15067.12	29.65000	4876.906	29
INTR	18.85752	17.98000	29.80000	13.54000	3.305432	29
FPI	1761.632	92.50000	36851.80	-594.9000	6825.350	29

Source: Author's Computation

Table 2. Result of ADF unit root test at level

Variables	ADF Test Statistic	Test Critical Value at 1%	Test Critical Value at 5%	Remark
GDP	3.442951 (1.0000)**	-3.689194	-2.971853	Not Stationary
FDI	-5.060690 (0.0003)**	-3.689194	-2.971853	Stationary
TROP	-1.775196 (0.3844)**	-3.689194	-2.971853	Not Stationary
CEXR	0.927978 (0.9944)**	-3.689194	-2.971853	Not Stationary
AGRS	2.815025 (1.0000)**	-3.689194	-2.971853	Not Stationary
INTR	-4.440120 (0.0016)**	-3.689194	-2.971853	Stationary
FPI	-5.509963 (0.0001)**	-3.689194	-2.971853	Stationary

Source: Author's Computation

Table 3. Result of ADF unit root test at 1ST difference

Variables	ADF Test Statistic	Test Critical Value at 1%	Test Critical Value at 5%	Remark
GDP	3.367983 (0.0214)**	-3.699871	-2.976263	Stationary
FDI	-8.412363 (0.0000)**	-3.699871	-2.976263	Stationary
TROP	-6.962587 (0.0000)**	-3.699871	-2.976263	Stationary
CEXR	-3.786389 (0.0082)**	-3.699871	-2.976263	Stationary
AGRS	-4.373630 (0.0020)**	-3.699871	-2.976263	Stationary
INTR	-10.16439 (0.0000)**	-3.699871	-2.976263	Stationary
FPI	-8.707840 (0.0000)**	-3.699871	-2.976263	Stationary

Source: Author's Computation

Table 4. Result of PP unit root test at level

Variables	ADF Test Statistic	Test Critical Value at 1%	Test Critical Value at 5%	Remark
GDP	3.486393 (1.0000)**	-3.689194	-2.971853	Not Stationary
FDI	-5.057990 (0.0003)**	-3.689194	-2.971853	Stationary
TROP	-1.704974 (0.4179)**	-3.689194	-2.971853	Not Stationary
CEXR	0.698240 (0.9899)**	-3.689194	-2.971853	Not Stationary
AGRS	3.321102 (1.0000)**	-3.689194	-2.971853	Stationary
INTR	-4.430546 (0.0016)**	-3.689194	-2.971853	Stationary
FPI	-5.511286 (0.0001)**	-3.689194	-2.971853	Stationary

Source: Author's Computation

Table 5. Result of PP unit root test at 1ST difference

Variables	ADF Test Statistic	Test Critical Value at 1%	Test Critical Value at 5%	Remark
GDP	-3.356447 (0.0220)**	-3.699871	-2.976263	Stationary
FDI	-25.46540 (0.0001)**	-3.699871	-2.976263	Stationary
TROP	-6.975793 (0.0000)**	-3.699871	-2.976263	Stationary
CEXR	-3.786389 (0.0082)**	-3.699871	-2.976263	Stationary
AGRS	-4.557526 (0.0012)**	-3.699871	-2.976263	Stationary
INTR	-25.18727 (0.0001)**	-3.699871	-2.976263	Stationary
FPI	-25.99078 (0.0001)**	-3.699871	-2.976263	Stationary

Source: Author's Computation

4.1 Co-Integration Test

The co-integration test is used in the determination of the long-run relationship that exists between variables. Table 6 shows that long-run relationship (co-integration) exists among the variables. There is 6 cointegrating equation which is GDP, FDI, TROP, CEXR, AGRS and INTR. This is reflected in the trace statistic of Table 8 which shows a value greater than that of the 5% critical value respectively.

As the data series are non-stationary and the vector of variables in the equations appears to be cointegrated, execution of the second phase of the Engle-Granger technique leads to the estimation of error-correction forms of the stochastic equation. The equation represents the short run behavior and the adjustment to the long-run model. The residual from the cointegrating regression lagged one period was used as error correction mechanism in the dynamic equation.

The Ordinary Least Squares (OLS) estimation method is used as it is an essential component of most other estimation techniques. In addition, the OLS remains one of the most commonly used methods in econometric investigations involving large models. Estimates of the preferred

specification obtained using general-to-specific method are presented in Table 7 and shows that Constant, FDI, TROP, INTR and INTR has a negative effect on GDP while CEXR and AGRS has a positive effect. The result also shows that all the variables have insignificant effect on GDP. This shows that financial liberalization as presented in Table 7 has negative and insignificant effect on the Nigerian economic growth for the period under study which is consistent with the study of [29].

The disequilibrium error term, ECM_{t-1} , is negative and statistically significant (as expected) in the equation. The significance of the error terms confirms the existence of long-run relationship between the variables in the error correction model. Of particular interest is the coefficient on the lagged ECM in the GDP equation. The ECM induces about 76% adjustment per period in this equation. In addition, the equation is statistically significant and the overall statistical fit is good. The marginal significance level of the F-statistics is zero. Hence, the null hypothesis of the F-statistics is rejected at all specified significance levels. Therefore, the conclusion is that, as groups, the regression coefficients are significantly different from zero.

The high value of the Durbin-Watson (DW) indicates absence of autocorrelation.

Table 6. Presentation of Johansen co-integration result-growth model

Eigen value	Trace statistic	5% Critical Value	Prob. **	Hypothesized no. of CE(s)
0.982398	268.0550	125.6154	0.0000	None*
0.904126	158.9823	95.75366	0.0000	At most 1*
0.764069	95.67474	69.81889	0.0001	At most 2*
0.572083	56.68086	47.85613	0.0060	At most 3*
0.472708	33.76257	29.79707	0.0166	At most 4*
0.379619	16.48255	15.49471	0.0354	At most 5*
0.124573	3.592170	3.841466	0.0580	At most 6*

(**) denotes rejection of hypothesis @ 5% and (1%) Significant level
L.R. test indicates 6 co-integrating equation @ 5% significant level

Table 7. Result of error correction model

Dependent Variable: D(GDP)				
Method: Least Squares				
Variable	Coefficient	Std. error	t-Statistic	Prob.
D(GDP(-1))	1.733874	0.228045	7.603196	0.0169
D(GDP(-2))	0.390135	0.083634	4.664800	0.0430
D(GDP(-3))	0.163091	0.028659	5.690722	0.0295
D(FDI)	-0.057137	0.017266	-3.309191	0.0805
D(FDI(-1))	0.512383	0.048775	10.50509	0.0089
D(FDI(-2))	0.098034	0.031424	3.119724	0.0892
D(TROP)	-5427.464	2705.474	-2.006104	0.1827
D(TROP(-1))	17103.93	2306.010	7.417108	0.0177
D(TROP(-3))	4253.965	2372.093	1.793338	0.2148
D(CEXR)	33.58606	9.218315	3.643406	0.0678
D(CEXR(-1))	-6.216440	8.429964	-0.737422	0.5376
D(AGRS)	1.240811	0.304861	4.070084	0.0554
D(AGRS(-1))	-5.517799	0.972079	-5.676287	0.0297
D(CEXR(-2))	-28.70871	8.072663	-3.556287	0.0708
D(AGRS(-2))	-3.593207	0.697639	-5.150528	0.0357
D(INTR)	-423.2960	103.5339	-4.088477	0.0549
D(INTR(-1))	75.98640	67.64683	1.123281	0.3780
D(INTR(-2))	-386.1779	104.8040	-3.684765	0.0664
D(FPI)	-1.524608	0.839578	-1.815922	0.2110
D(FPI(-1))	-0.327519	0.063012	-5.197689	0.0351
D(FPI(-2))	-0.289955	0.025592	-11.32986	0.0077
ECM(-1)	-0.766862	0.160032	-4.791930	0.0409
C	-1056.381	369.8767	-2.856035	0.1038
R-squared	0.999659	Mean dependent var		5066.915
Adjusted R-squared	0.995909	S.D. dependent var		6552.027
Sum squared resid	351222.2	Schwarz criterion		15.34954
Log likelihood	-154.8522	Hannan-Quinn criter.		14.53919
F-statistic	266.5875	Durbin-Watson stat		1.678071
Prob(F-statistic)	0.003743			

Source: E-views 9 computations

Table 8. Variance decomposition of GDP

Period	S.E.	GDP	FDI	TROP	CEXR	AGRS	INTR	FPI
1	679.6273	100.0000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
2	5692.546	2.778344	86.11785	0.045887	3.244919	5.279180	1.788115	0.745702
3	7495.841	5.013387	79.72130	5.501715	1.980439	5.514155	1.829908	0.439097
4	9277.000	5.526586	70.79275	11.30877	1.388739	9.392717	1.249032	0.341407
5	10604.80	6.432285	61.08861	17.94653	1.184215	12.12329	0.955899	0.269172
6	11765.58	6.772450	55.91509	22.28307	1.068156	12.84088	0.900049	0.220310
7	12735.42	6.938550	53.30602	24.45149	1.660620	12.65133	0.773136	0.218857
8	13759.48	6.971673	50.55928	24.80411	3.181370	13.59927	0.695487	0.188806
9	14803.22	7.061559	46.54942	24.52017	4.881039	16.21266	0.601316	0.173831
10	15934.80	7.367102	41.14466	24.29855	6.299164	20.15049	0.572833	0.167204

Source: Extracted from e-views 9 output data on variables of study

4.2 Variance Decomposition

It helps to ascertain financial liberalization variables (FDI, TROP, CEXR, AGRS, INTR and FPI) which most influences the variable of economic growth in Nigeria. The results of the

variance decomposition estimates of GDP in Table 8 indicate that foreign direct investment shocks explain about 79% of the variation in GDP in the 3rd period. This is followed by trade openness which explains about 24.8% changes in GDP in the 8th period. However, about 20.1%,

Table 9. Pairwise granger causality test on input variables

Null Hypothesis:	Obs	F-Statistic	Prob.
FDI does not Granger Cause GDP	27	36.3764	1.E-07
GDP does not Granger Cause FDI		0.16588	0.8482
TROP does not Granger Cause GDP	27	2.08021	0.1488
GDP does not Granger Cause TROP		2.00877	0.1580
CEXR does not Granger Cause GDP	27	1.85530	0.1801
GDP does not Granger Cause CEXR		2.59515	0.0973
AGRS does not Granger Cause GDP	27	6.83399	0.0049
GDP does not Granger Cause AGRS		1.16064	0.3317
INTR does not Granger Cause GDP	27	0.82748	0.4503
GDP does not Granger Cause INTR		1.22979	0.3117
FPI does not Granger Cause GDP	27	0.10127	0.9041
GDP does not Granger Cause FPI		0.06727	0.9351

Source: Granger Causality test output data using e-views 9

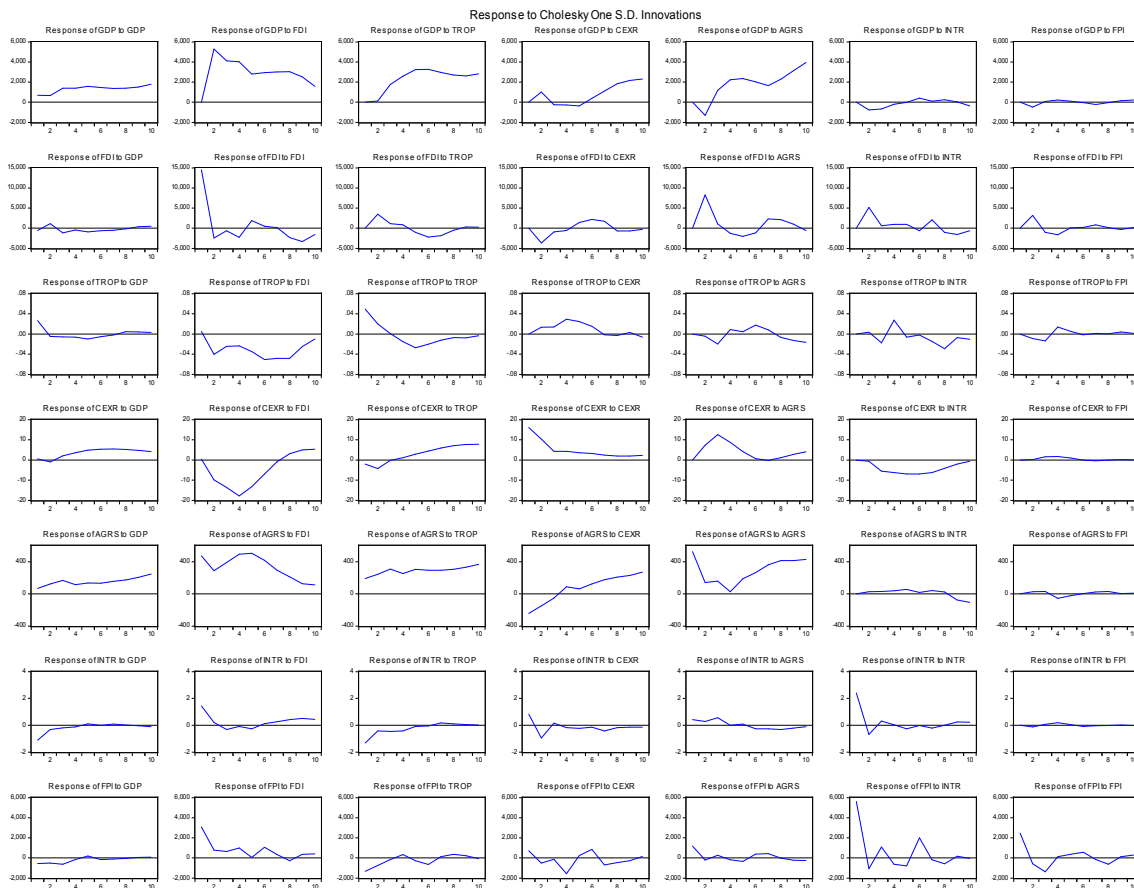


Fig. 1. Impulse response function of GDP to shocks in FDI, TROP, CEXR, AGRS, INTR and FPI

6.2%, 0.95% and 0.74% of the future changes in GDP were attributable to changes in AGRS, CEXR, INTR and FPI respectively, while about 7% of future changes in GDP are explained by present GDP.

4.3 Impulse Response Function

The impulse response will be used to trace the responses of the system to the innovations in financial liberalization using impulse analysis.

This analysis involves shocking the system's disturbances and tracing the sign and magnitude of the system's response to the shocks over time.

Fig. 1 shows that foreign direct investment and aggregate savings have the highest shock impact on gross domestic product among the variables. The effect of foreign direct investment impulses is positive on GDP from 1st to 10th period while making its full impact on the 2nd and 3rd period.

Accumulated impulse response functions shows that foreign direct investment and aggregate savings impact the highest shock on GDP among the other variables making its full impact from seventh period to the tenth period. FDI, TROP and CEXR has a positive effect on GDP from 1st to 10th period while AGRS has a negative effect from 2nd to 3rd period thereafter it generates a positive effect from 4th to 10th period. INTR and FPI have a negative effect on GDP from the 2nd to 10th period.

4.4 Granger Causality Test

The work tested the causality of the variables studied on the dependent variable GDP using granger causality test. The output data were shown in Table 9. Table 9 revealed that there exist a unilateral causality between Foreign Direct Investment (FDI) and Gross Domestic Product (GDP); Aggregate Savings (AGRS) and Gross Domestic Product (GDP) since the probability value of both is less than 5% and the F-statistic is greater than the F-tabulated, therefore, we reject the Null Hypothesis (H_0) and accept the Alternate Hypothesis (H_1) in both cases. This shows that the unidirectional relationship between FDI and GDP, AGRS and GDP will help increase the economic activity in the country. The increase in foreign direct investment coupled with increase in savings will help provide the much needed fund for investment in the country.

5. SUMMARY, CONCLUSION AND POLICY IMPLICATION

5.1 Summary and Conclusion

There has been a long held view that financial liberalization helps in economic growth following largely from the work as postulated by McKinnon and Shaw [11]. However, the empirical exploration on this topic in Nigeria remains a

contradictory issue and is based on that, the study tends to ascertain the effect of financial liberalization on Nigerian economic growth 1990 to 2018. Descriptive statistics was used to explain the characteristics of the data series, after that the unit root status of the variables was established in the structural equation. The study shows the existence of co-integration and Error Correction Mechanism was used in deriving the long run and short run estimates. The structural analysis was done using the Granger Causality, Impulse Response Analysis and Forecast Error Variance Decomposition to ascertain financial liberalization variables which most influences the variable of economic growth in Nigeria. The result of the analysis shows that financial liberalization has negative and insignificant effect on the Nigerian economic growth and is consistent with the findings of [29,26,27,28]. The study also disagrees with McKinnon and Shaw hypothesis (Complementarity Hypothesis) which states that alleviating financial restrictions or repression (mainly by allowing market forces to determine real interest rates) can exert a positive effect on growth rates as interest rates rise toward their competitive market equilibrium. The insignificant effect can be as a result of policy inconsistency, policy mortality, Infrastructural failure and insecurity. We then conclude that government should provide necessary infrastructures and policies that will help liberalized the financial system.

5.2 Policy Implication

It used to be a long held view in finance that liberalizing the financial system would help remove constraints on credit needed for investment. Despite the effect of government in liberalizing the financial system the much desired credit for investment in the country is not yet sufficient as such the study recommends that the Central bank of Nigeria should formulate and implement appropriate interest rate policies that will enable us use a single digit interest rate policy option that will attract foreign investors to borrow funds from our domestic financial market for further expansion in Nigeria economy. This is important because when lending rates are too high, it discourages investors from accessing credits from the banks, and subsequently decreases productive activities in the economy. Also some of those who take the loans at such outrageous rates simply abscond with the money and never invests it. That is why we have several cases of loan defaults in Nigeria today. Governments are encouraged to develop strong

institutions for management of monetary policy and exchange rates before liberalization. This is because high capital mobility resulting from liberalization strongly affects the effectiveness of different instruments meant to achieve monetary policy objectives. Government should aim at creating conditions which make private investment attractive. The conditions ranges from general- establishing a stable macroeconomic environment, provision of adequate property right- to more specifics ones, such as adequate access to credit, imported inputs by investors, stable power supply, good road network, telecommunication and provision of adequate security. 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.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Okpara GC. The effect of financial liberalization on selected macroeconomic variables: Lesson from Nigeria. *The International Journal of Applied Economics and Finance*. 2010;4(2):53-61.
2. Kaminsky L, Schmukler L. Short-run pain, long-run gain: The effects of financial liberalization. IMF Working Paper. 2003;03/34.
3. Chandrasekhar CP. Financial liberalization and the macroeconomics of poverty reduction. Draft Thematic Summary on Financial Liberalization for the Asia-Pacific Programme on the Macroeconomics of Poverty Reduction; 2004.
4. Ojo MA. Review and appraisal of Nigeria's experience with financial sector reform. Central Bank of Nigeria, Research Development Occasional Paper, 8; 1991.
5. Stiglitz E. Capital market liberalization, economic growth, and instability. *World Development Review*. 2000;28(6):1075–1086.
6. Boot C. *Introductory econometrics for finance*. Cambridge: Cambridge University Press; 2000.
7. Hellmann T, Murdock K, Stiglitz JE. Liberalization, moral hazard in banking and prudential regulation: Are capital requirements enough? *American Economic Review*. 2000;90(1):147–65.
8. Demirguc- Kunt A, Detragiache E. Monitoring banking sector fragility: A multivariate logit approach. *World Bank Economic Review*. 1998;14(2):287-307.
9. Diamond DW, Dybvig PH. Bank runs, deposit insurance, and liquidity. *Journal of Political Economy*. 1983;91(3):410-19.
10. Uwakaeme OS. Economic growth in Nigeria: An empirical investigation of determinants and causal relationship. *American Journal of Economics*. 2015;5(1):9-20.
11. McKinnon RI. *Money, capital and banking in economic development*. Brooklyn Institution, Washington D.C; 1973.
12. Serieux J. Financial liberalization and domestic resource mobilization in Africa: An assessment. International Poverty Centre, Working Paper No. 45; 2008.
13. Shaw ES. *Financial deepening in economic development*. Oxford, U.S: University Press New York; 1973.
14. De Santis RA. The geography of international portfolio flows, international CAPM and the role of monetary policy frameworks. ECB Working Paper No 678; 2006.
15. Linter J. The valuation of risk assets on the selection of risky investment in stock portfolios and capital budgets. *Review of Economics and Statistics*. 1965;47(6):13-37.
16. Sharpe WF. Capital asset prices: A theory of market equilibrium under conditions of risk. *Journal of Finance*. 1964;19(9):425-442.
17. Fama EF, French KR. Value versus growth: The international evidence. *Journal of Finance*. 2004;3(53):75–99.
18. Nwainee JO. Monetary policy and exchange rate stability: A general overview. Proceedings of Nigeria Economic Society's One-day Seminar held Lagos; 1999.
19. Akpan DB. Financial liberalisation and endogenous growth: The case of Nigeria. African Institute for Economic Development and Planning (IDEP) Working Paper 10; 2004.
20. Kaita RA. Financial liberalisation and economic growth In Nigeria: An empirical

- analysis. *Journal of Economics and Finance*. 2015;6(3):15-24.
21. Sulaiman LA, Oke MO, Azeez BA. Effect of financial liberalization on economic growth in developing countries: The Nigerian experience. *International Journal of Economics and Management Sciences*. 2012;1(12):16-28.
22. Omankhanlen AE. The financial sector reforms and their effect on the Nigerian economy. *Economy Trans Disciplinarily Cognition*. 2012;15(2):45-57.
23. Owusu EL, Odhiambo NM. Financial liberalization and economic growth in Ivory Coast: An empirical investigation. *Investment Management and Financial Innovations*. 2013;3(5):10(4-1).
24. Orji A, Ogbuabor OA, Onyinye PN. Financial liberalization and output growth in Nigeria: Empirical evidence from credit channel. *International Journal of Economics and Financial Issues*. 2015;5(1):297-311.
25. Madubuko U. The effect of financial sector liberalization on economic growth in Nigeria. *International Journal of Finance and Accounting*. 2016;5(4):193-201.
26. Odili O, Ariwa FO. Financial system liberalization, savings, investment and economic growth in Nigeria. *International Journal of Economics and Business Management*. 2017;3(5):2489-0065.
27. Nwadiubu A, Sergius U, Onwuka I. Financial liberalization and economic growth—The Nigerian experience. *European Journal of Business and Management*. 2014;6(14):124-135.
28. Akingunola RO, Adekunle OA, Badejo O, Salami OG. The effect of the financial liberalisation on economic growth. *International Journal of Academic Research in Economics and Management Sciences*. 2013;2(1):2226-3624.
29. Fowowe B. Financial liberalisation policies and economic growth: Panel data evidence from Sub-Saharan Africa. *African Development Review*. 2010;20(3):49-74.
30. Kasekende LA, Atingi-Ego M. Financial liberalization and its implication for the domestic financial system: The case of Uganda. *African Economic Research Consortium, Nairobi Research Paper 128*; 2003.
31. Banam KC. Impact of financial liberalization on economic growth in Iran: An empirical investigation. *Middle Eastern Finance and Economics*. 2010;7(3):6-37.
32. Bashar RA, Khan MS. Islamic interest-free banking: A theoretical analysis. *IMF Staff Papers*, 33; 2007.

© 2019 *Idowu and Origin*; This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Peer-review history:

*The peer review history for this paper can be accessed here:
<http://www.sdiarticle4.com/review-history/51329>*