Financial Sector Liberalization and Nigeria Economic Growth: A Time-variant Study

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DOI: 10.56201/ijefm.v9.no6.2024.pg1.21

Abstract
This study examined the relationship between financial sector liberalization and Nigeria economic growth. Time series data were sourced from Central Bank of Nigeria statistical bulletin from 1990-2023. Financial sector liberalization were proxy by savings rate liberalization, lending rate liberalization, exchange rate liberalization, capital market liberalization and current account liberalization while Nigeria economic growth was proxied by real gross domestic product. Multiple regressions with econometrics view statistical package were used as data analysis techniques. Co-integration, Granger Causality Test and Augmented Unit Root Test were used to determine the long and the short run relationship that exist among the variables. Findings of the study revealed that current account liberalization, capital market liberalization and lending rate liberalization have negative relationship with Nigeria economic growth while exchange rate liberalization, and savings rate liberalization have positive relationship with Nigeria economic growth. From the regression summary, the study conclude that financial sector liberalization have significant relationship with economic growth in Nigeria. We recommend that exchange rate deregulation should be deepened and the policies revisited to stimulate economic growth. Nigerian Interest rate liberalization such as lending, monetary policy rate and prime lending rate should be harmonized with the objective of economic growth. There should be policies to further deepen the operational effectiveness and effectiveness of the financial system for increase financial sector development. Implementable polices should be made to enhance Nigeria economic growth.

Keywords: *Financial Sector Liberalization, Nigeria Economic Growth, Interest Rate Liberalization, Exchange Rate Liberalization*

INTRODUCTION

The aspiration and attendant growth of every nation (developed & developing) is to achieve stable price level, favourable balance of payment, employment and inflation. It is imperative to note that these macroeconomic objectives are largely reliant on a liberalized financial system or sector other-wise called financial liberalisation. Therefore, financial liberalisation refers to policy measures geared towards a deregulated and transformed financial system with the aim of achieving a liberalized financial market. This situation will lead to an efficient financial system (market) that will be free from government control which will lead to massive growth of an economy through increase mobilization of savings that will spur investment. The multiplier impact of increase investment is reduced unemployment rate, stable price of goods and services and favourable balance of payment. In this scenario, lending rate as a determinant will be driven by market forces of demand and supply.

The argument for financial liberalization was brought to the brim light by the seminal work of McKinnon (1973) and Shaw (1973). These two scholars separately did a work on financial liberalization in relation to economic growth. They expressed that when financial market is liberalized by eliminating series of impediments or restrictions economic growth would be enhanced. In their studies, they both found that, financial liberalization, through removal of government intervention in regulating interest rate and direction of credit positively and significantly impact economic growth. This implies that, financial liberalization policies increase savings, leads to a more efficient allocation of resources, higher level of investment and economic growth (Khazri&Djelassi 2011). Ever since then, there have been numerous replicas of studies either on country specific or cross countries on financial liberalization. However, there have been no consensus and the research are still on going.

The objective of the financial sector liberalization in 1986 was to reposition the Nigerian financial sector for effective and efficient intermediation that will enhance the realization of macroeconomic goals. The essence of the liberalization was to abolished interest rate ceiling, high reserve requirements and qualitative restrictions in the credit allocation mechanism. In Nigeria, the scope of the financial sector liberalization include, the establishment of two foreign exchange market in 1986, interest rate deregulation in 1987, bank portfolio deregulation, deregulation of interest rate on demand deposit account, introduction of indirect monetary policy, liberation of capital flows and the capital market. Before the financial sector reform which started in 1986, the Nigeria financial sector was highly repressed. Evidence of this results in interest rate controls, selective credit guidelines, ceilings on credit expansion and use of reserve requirements and other direct monetary control instruments. New entry to the banking sector was restricted while government owned banks dominated the industry.

There are different views on the effect of financial sector liberalization. Financial liberalization has been criticized on the ground that, it increases the risk of speculative attacks and country's exposure to international shocks and capital flight. Tswamuno, Parde and Wunnava (2007) opined that "Developing countries in the 1980s and early 1990s had been led to believe that foreign investment in the form of equities and bonds traded on the local markets were more long term in nature than foreign bank lending they attracted in the 1970s. However, huge flight of capital from the emerging markets at times in recent years has exploded that myth. There was also argument

that financial liberalization may increase the incidence of financial crises (Baldacci, De Mello &InchausteComboni, 2002; Ilugbusi, et al., 2020). Further argument was that, information asymmetries which are endemic to financial markets and transactions in developing countries can be detrimental to liberalization as and as such, it was contended that, emerging markets do not have the capability to assemble information relevant to financial transactions and thus cannot guarantee that capital will flow where its marginal productivity exceeds opportunity cost compared to their developed counterparts Although, scholars who advocated for financial liberalization argued that, financial liberalization would lead to a drop in the cost of debt and equity through integration of segmented markets. More importantly, they argued that, liberalization would result in an increase of stock liquidity. This implies that increased liquidity leads to further development of the underlying market as both local and foreign investors are assured of getting in and out of a position without much difficult. Furthermore, the advocates argued that through financial liberalization, foreign investors pressure local institutions to adhere to international standards, can improves local corporate governance and reduces the division between internal and external finance (Bekaert, Harvey &Lundblad, 2004; Henry, 2004; Levine &Zervos 1996). From the above, this study examined the effect financial sector liberalization on Nigeria economic growth.

LITERATURE REVIEW

Financial Sector Liberalization

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 (Lucky, 2018). Khazriand 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&Ikenna 2012; Lucky&Uzah, 2016).

Nigeria Interest Rate Liberalization

Interest rate also called monetary policy rate in Nigeria is one of the major instrument of monetary policy with regards to the role it plays in the determination of investment decisions by firms. Interest rate is the price paid for the use of money. It is the opportunity cost of borrowing money from a lender. It can also be seen as the return being paid to the provider of financial resources. It is an important economic price. This is because whether seen from the point of view of cost of capital or from the perspective of opportunity cost of funds, interest rate has fundamental implications for the economy either impacting on the cost of capital or influencing the availability of credit, by increasing savings (Acha&Acha 2011; Akani, Lucky, &Anyamaobi, 2016; Ngerebo-a& Lucky, 2016).

Capital Account Liberalization

Omoruyi (2006) opined that capital account liberalization is the process of removing restrictions from international transactions related to the movement of capital. It involves allowing not only foreign direct investment but also capital inflows to bond and equity markets and to the banking sector. Capital account liberalization can play an important role in attracting foreign investment to an economy and in helping to manage the macroeconomic implications of such capital flows (Oyejide, 2006; Akani, Lucky &Uzah, 2016).). Ojo (2006) put forward that, capital account liberalization engenders competition which induces more efficient financial sector and greater international productivity. Through capital movements, a nation's economy derives more income from the opportunities created by the diversification of portfolio investments and sharing of risks. Higher incomes will encourage more savings, investment and economic growth. Capital flows also facilitate the transfer of technology and commercial know-how through properly negotiated technical agreements thus creating further welfare gains.

Foreign Exchange Liberalization

Foreign exchange refers to the revenue earned by a country in convertible currencies from exports of goods and services. It should be noted that the Nigeria's principal source of foreign exchange earnings is from the export of crude oil. Other sources of foreign exchange flows include non-oil exports, capital importation, foreign investment flows, service income, other invisible items such as external borrowings and foreign aids. Writers like Olukole (2012) and many others have argued that the recent economic crises in Nigeria have been attributed to the misappropriation of money from the oil boom in the 70s. After the oil boom in the 1970s, Nigeria's official foreign exchange reserves also experience an unprecedented growth when its figure stood at about US$10 billion.

The efficient and effective regulation of a system always leads to the outstanding success of that system, and as it is popularly said that only those that comply with regulations become regulators, Nigeria in the past years has been involved in different regulation strategies. Also, failure of a policy usually leads to the implementation of a new policy which usually entails adjustment of previous policies (Gbosi, 2005). For example the economic stabilization measures involving stringent exchange and trade controls, introduced in April 1982, proved rather ineffective. More stringent measures introduced in 1983 and 1984 and retained in 1985 accomplished very little.

Capital Market Liberalization

Central to the capital market liberalization debates its impact on economic development. As Omoyele (2004) Observed the case for international financial liberalization is the same as the case for domestic financial liberalization. The question as put forth by him is that: if domestic financial markets can be counted on to deliver an efficient allocation of resources, why cannot international financial markets. The review of globalization, capital market and the current global meltdown may look myopic and insufficient if their evolution and how they are conceptualized by both local and foreign scholars are not given cursory outlook. Globalization and global meltdown which had its way into the economic literature of Nigeria as a result of the introduction of Structural Adjustment Programme in 1986 has generated controversies among various scholars. The ambiguity and vagueness of the concept make every attempt to define them a subject of intense controversy among the experts.

Economic Growth

Gains in aggregate productivity, as shown by an expanding Gross Domestic Product, are the hallmark of a thriving economy (RGDP). Productivity refers to a nation's propensity to generate its own outputs (both material and immaterial) from its own resources. An increase in production leads to a flourishing economy. The expansion of the economy may be evaluated in two ways: the real expansion and the inflated expansion known as nominal growth. According to Haller (2012), economic growth is the process of expanding national economies, as shown by rising macroeconomic indicators like the GDP per capita, which have beneficial consequences on the economic and social sectors. To put it simply, economic growth is a rise in per capita income. It includes a rise in per capita gross domestic product (GDP), gross national product (GNP), and net national income (NI), all measures of national wealth. It also encompasses structural changes to the economy (Akpotor, 2021). According to Mladen (2015), GDP growth is the primary indicator of economic growth since it measures the expansion of a country's total output over time. Changes in material production are part of economic development, and they occur over a very short time frame, often a year.

Theoretical Review
Financial Repression Theory

Governments and particularly developing country governments have intervened extensively in order to divert large amount of funds to the priority sectors such as state owned enterprises, small and medium scale firms and to a lesser extent housing, exports and underdeveloped regions. One way that government's finance expenditures in excess of tax revenues would be address is to force the private sector, insurance companies, pension funds, commercial banks and other public financial institutions to buy government securities at below market yields as generally returns on government securities is much below the market rates of interest. A typical set of restrictions includes the prohibition on domestic residents from holding financial assets abroad, coupled with compulsory quotas of government bonds in financial intermediaries The rationale for financial repression has been the response to the simplistic interpretations of Keynesian theories: It was thought that, by controlling interest rates at reasonably low levels and by expanding the scope of government direct intervention, investment would greatly increase. According to Prebisch,(1974), government intervention aimed at controlling interest rates accelerates growth. The author contends that lower interest rates encourage investment and that the government should lower interest rates to a level where full employment is achieved.

Empirical Review

ThankGod and Abraham (2022) investigated the impact of financial liberalisation on economic growth in Nigeria spanning from 1981 to 2021. Data for the study were obtained from Central Bank of Nigeria (CBN) Statistical bulletin. 2021. The formulated model was subjected to unit root test using the Augmented Dickey Fuller and Philip-perron unit root approach. The ADF and PP findings indicated that the variables had heterogeneous order of integration. Some of the variables were stationary at levels 1(0) while others were stationary after first difference 1(1). (1). Based on this, the research utilised the Auto-regressive distributive lag (ARDL) Model to determine the long-run connection as well as the behaviour of the variables. Hence, the study demonstrated that financial liberalisation has long and short-run link with economic growth. Additionally, research

revealed that credit to private sector (CPS) has considerable favourable influence on economic growth. On the other hand, prime lending rate (PLR) and financial deepening (FD) had a large negative influence on economic growth in the short-run while deposit savings rate (DSR) had positive but negligible association economic growth in the short-run. The research found that, financial liberalisation has considerable influence on economic growth in Nigeria. It was therefore recommended amongst others that the central bank of Nigeria should look into activities of deposit money bank (DMBs) regarding the continuous rise in lending rate and adopt policy measures that would reduce and make the lending rate attractive to enable the surplus sector of the economy save more funds that would enhance investment and grow the Nigerian economy rather than slow it down

Kudaisi, , Ojeyinka and Osinubi, (2022) was motivated by the recent increase in remittance flows in Nigeria as the highest recipient in West Africa, and the fact that the growth impact of remittances is weak within the country. The financial liberalization index developed by Chinn and Ito (2006) is employed in this study to examine the role of financial liberalization in the remittances-growth nexus in Nigeria over the period 1990–2018.To address the possibility of endogeneity among the variables in the model, the study employs the generalized method of moments (GMM) as a technique of analysis.Remittances and financial liberalization are found to have negative significant impacts on economic growth. However, the effect of the interaction term of financial liberalization and remittances on economic growth is positive and significant. This suggests that the two variables act as complements in the enhancement of economic growth in Nigeria. The study thus concludes that financial liberalization is a strong transmission channel through which remittance inflows positively affect economic growth in Nigeria. The study also advocates for a well-developed financial sector in order to attract more growth-enhancing remittances into the country.

Mansour and Hassan (2021) focused on Egypt and Saudi Arabia especially, the influence of financial deregulation on economic growth in emerging nations is investigated. The study uses a model that takes GDP growth as the dependent variable and uses the following macroeconomic variables as financial liberalisation indices: Broad money as a percentage of GDP, Domestic bank credit to the private sector as a percentage of GDP, Monetary sector credit to the private sector as a percentage of GDP, and Net inflows of foreign direct investment as a percentage of GDP. The World Bank's open data website was utilised to acquire annual information for Egypt and the Kingdom of Saudi Arabia for the years 1970–2018. The Autoregressive Distributed Lag (ARDL) approach is employed in the empirical study. The findings reveal that both countries' financial and external liberalisation policies do not have a favourable influence on the growth rates of their economies after more than three decades of implementation. Our study has also led us to the conclusion that any financial liberalisation policies in both countries must be preceded by the improvement of their institutional and financial development frameworks as well as the attainment of macroeconomic stability.

Ilugbusi et al. (2020) looked at 33 years, from 1986 to 2018, to estimate the influence of financial liberalisation on economic growth in Nigeria. Using the McKinnon and Shaw hypothesis as the theoretical foundation, gross domestic product (GDP) was used to represent economic growth, while prime lending rates, savings deposit rates, exchange rates, credit to the private sector, and

the ratio of private investment to GDP were used to represent financial liberalisation. The CBN Statistical Bulletin was utilised as the source for the data, and auto regressive distributed lag was employed for estimation. The study showed a long- and short-term link between financial liberalisation and economic progress. Subsequent study found that credit to the private sector had highly beneficial advantages on economic growth while prime lending rates had no good effects. On the other hand, the rate of interest on savings deposits, the value of the dollar, and the percentage of private investment to GDP have limited unfavourable influence on economic progress. According to the study's results, financial deregulation considerably increases economic growth, with loans to the private sector having the largest influence. As a consequence, the study offered numerous suggestions, including that the government raise the saving deposit rate higher through the Central Bank of Nigeria in order to boost growth in domestic savings by the surplus sector of the economy.

Yakubu et al. (2020) used time series data from 1970-2016. In order to estimate models containing quadratic and interaction variables, the authors decided utilizing quantile regression. The unit root test was developed to explore the stationarity problem. Kenya's real economic growth was affected by political stability and was constrained by the country's lack of capital account openness and financial development. There is a nonlinear U-shaped link between financial development and real economic growth, with the former serving as a drag and the latter as an engine of long-term growth. The government should maintain liberalising the capital account in order to support economic development. The domestic financial market should also be liberalised to reduce the negative impacts of financial repression and maintain the political atmosphere stable.

Syed and Shahid (2019) set out to answer. Using the Panel Cointegration through Fully Modified Ordinary Least Square (FMOLS) technique, 58 nations' panel data were analysed for the period 1973–2012. The eight aspects of banking sector reforms that make up the FL index are the subject of this analysis. According to the estimates, the reaction to FL is more favourably significant in Least Developed Countries (LDCs) than in Developed Countries (DCs). The reason for this is that the market-based financial systems of the developed countries are much more prevalent than the banking sectors of the LDCs. In addition, excessive liberalisation has mixed effects in both categories of nations. Too much FL is shown to have a large negative influence on the DCs, suggesting that it undermines financial institutions and the economy as a whole via currency over-valuation, capital flight, liquidity issues, financial hardship, and even the rare financial catastrophe. While the results for the LDCs show a positive and significant effect of too much FL, this indicates that these countries still have the capacity to absorb the positive effects of additional financial reforms, which are good for the development of financial intermediaries and, in turn, foster the growth rate.

Foluso et al. (2017) used data from 30 nations in sub-Saharan Africa (SSA) to analyse how financial liberalisation has affected economic development. This research uses dynamic panel estimate to analyse how financial liberalisation and banking crises affect GDP growth in SSA. The Arellano and Bover technique is used to estimate the linear generalised method of moments. The results show that for SSA, the coefficient of the variable representing financial liberalisationis positive and statistically significant. While statistically small, the dummy sign for financial liberalisation became negative for low-income nations. The statistics also demonstrate that a

financial crisis is inversely connected with economic growth, indicating that a banking crisis's length may have a substantial influence on economic expansion throughout sub-Saharan Africa. These results have implications for a number of African nations, especially those whose economies are now undertaking financial reforms, given the important role that most financial intermediaries play in developing countries.

Orji et al. (2015) constructed a financial liberalisation index for Nigeria from 1981 to 2012 using the McKinnon-Shaw framework to analyse the impact of financial deregulation on GDP growth in the country. Cointegration analysis and the ordinary least squares method are used in the study. Private investment and financial liberalisation (abbreviated FINDEX and PINV respectively) are shown to have a major impact on GDP growth in Nigeria. A negative correlation between real loan rate (LDR) and GDP growth in Nigeria throughout the studied period was discovered. In order to strengthen the impact of liberalisation on the economy and to ensure that the benefits of the liberalisation exercise are maximised, we conclude that the monetary authorities and policy makers in Nigeria need to support the liberalisation process by developing complementary policies and financial sector reform measures.

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 cointegration and error correction method. The variable used was per capital 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).

Qazi and Shahida (2013) 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.

Asamoah (2018) 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.

Muhammad and Malarvizhi (2014) examined the linkage among financial liberalization on economic growth and poverty reduction in six sub-Saharan African countries using panel unit root and panel vector error correction tests over the period of 1980-2010. The results showed that poverty reduction was positively related to economic growth and financial liberalization coefficients are positively related to economic growth. Thus, it implies that financial liberalization causes economic growth. The coefficients of financial liberalization was found to be insignificant to poverty reduction suggesting that financial liberalization does not have direct impact on poverty reduction in the six Sub-Saharan African countries, hence, implying that the financial liberalization effects of poverty are dependent on the distributional changes made possible by the growth and the existence of good governance and strong institutions.

Fowowe (2018) 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. Obamuyi (2019) examined the relationship between interest rates liberalization and economic growth in Nigeria. Using annual data from 1970 to 2006 while applying a co-integration and error-correction model, he showed that the real lending rates have a significant effect on economic growth and there exists a long-run relationship between economic growth and interest rate liberalization. He also confirmed a positive relationship between interest rates and investment and between investment and economic growth. Hence confirming the results of Fowowe (2009) that interest rate is growth enhancing in the long-run.

Literature Gap
Financial liberalization became a useful and important monetary policy in many countries following the directive from the Washington Consensus or Bretton Woods. Financial repression, as argued by McKinnon (1973) and Shaw (1973) is the existence of interest rates ceilings, high reserve ratios, regulated lending, restriction to entry and exit in the banking activities, restriction of foreign currency transactions and directed ceilings in an economy. Nigeria financial sector liberalization in the last quarter of 1986 was a macroeconomic reform aimed at repositioning Nigeria financial sector to be an active player in the global financial market rather than a spectator. However, the effect of the financial sector liberalization on economic growth remain controversial among scholars as some authors found positive while other found negative effect of the financial sector liberalization. Therefore this paper examined the effect of the liberalization on growth of Nigeria economy.

METHODOLOGY
The study adopted the quasi-experimental research design. This is because the variable under study cannot be manipulated or is not under the control of researcher. The study is designed after correlation or regression research methodology. Here we try to see how two or more variables can relate or influence each other.Data for this study were time series data ranging from 1990 – 2023.

The data consist of yearly data of two dependent variables of liquidity of commercial banks and five independent variables that measures financial sector liberalization.

Model Specification

RGDP= f (SRL, LRL, EXRL, CML CAL)   (1)

To have the estimable version of above models 3.1 can be rewritten to have

$$RGDP = \beta_0 + \beta 1 SRL + \beta_2 LRL + \beta_3 EXRL + \beta_4 CML + \beta_5 CAL + \mu \ (2)$$
Where
RGDP= Real gross domestic product

SRL   =   Savings Rate Liberalization

LRL   =   Lending Rate Liberalization

EXRL =   Exchange Rate Liberalization

CML   =   Capital market liberalization measured by increase or decrease on foreign portfolio investment

CAL=   Current account liberalization measured by net official finance

ϕ_0, α_0 =Constant

$\beta_1 - \beta_5 =$ Coefficients of independent variables

μ_{it} =   Error Term

A-Priori Expectation

Base on theories such as financial intermediation theory and empirical results examined in this study, the variables are expected to have a positive effect on the dependent variables. The mathematical implication is stated as follows: $\beta_1, \beta_1, \beta_1, \beta_1 > 0$

Data Analysis Techniques

Ordinary least squares (OLS) are a method for estimating the unknown parameters in a linear regression model. Hutcheson (2011) defined ordinary least square (OLS) regression as a generalized linear modeling technique that may be used to model a single response variable which has been recorded on at least an interval scale. This method minimizes the sum of squared vertical distances between the observed responses in the dataset and the responses predicted by the linear approximation.

OLS technique may be applied to single or multiple explanatory variables and also categorical explanatory variables that have been appropriately coded. In single explanatory variables, the

relationship between a continuous response variable (Y) and a continuous explanatory variable (X) may be represented using a line of best-fit, where Y is predicted, at least to some extent, by X. If this relationship is linear, it may be appropriately represented mathematically using the straight line equation 'Y = a + ßx

For the multiple explanatory variables additional variables are added to the equation. The form of the model is the same as in a single response variable (Y), but this time Y is predicted by multiple explanatory variables (X_1 to X_5).

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 \qquad\qquad (3)$$

The interpretation of the parameters (a and ß) from the above model is basically the same as for the simple regression model, but the relationship cannot be graphed on a single scatter plot. A indicates the value of Y when all variables of the explanatory variables are zero. Each ß parameter indicates the average change in Y that is associated with a unit change in X, whilst controlling for the other explanatory variables in the model. Model-fit can be accessed through comparing deviance measures of nested models. For example, the effect of variable X_3 on Y in the model can be calculated by comparing the nested models

Unit Root Test

A unit root test is a statistical test for the proposition that in a autoregressive statistical model of a time series, the autoregressive parameter is one (Econtermsy(t), where t a whole number, modeled by:

$$y(t+1) = ay(t) + \text{other terms}$$

The Augmented Dickey Fuller (ADF) unit root test is used to test the stationarity property of a time series data in order to avoid the spurious regression problem. The ADF unit root test is specified as

$$\Delta Y_t = \lambda Y_{t-1} + \sum_{i=1}^{n} \lambda \Delta Y_{t-j} + \varepsilon_t \qquad\qquad (8)$$

$$\Delta Y_t = \alpha + \lambda Y_{t-1} + \sum_{i=1}^{n} \lambda \Delta Y_{t-j} + \varepsilon_t \qquad\qquad (9)$$

$$\Delta Y_t = \alpha + \lambda_t + \lambda Y_{t-1} + \sum_{i=1}^{n} \lambda \Delta Y_{t-j} + \varepsilon_t \qquad\qquad (10)$$

Note: The null hypothesis is rejected on the ground that the absolute value of the calculated ADF test statistic is larger than the absolute value of the Mackinnon critical value.

Cointegration Test

Cointegration is a statistical property of time series variables. In a situation where two or more series are individually integrated (in the time series sense) but some linear combination of them has a lower order of integration, then the series are said to be cointegrated. For estimation of the

cointegrating relationship to be undertaken, it requires that all the time series variables in the model be integrated of order one 1(1). The next step after recognizing the order of integration of the variables as I (1) or above is to test whether the variables in question can cointegrate or not. The cointegration test is based on the following equation.

$$ \tag{11}$$

Where n and n are 4 x 4 matrices and k is the lag length. The tests used here involved cointegration with linear deterministic trend in the vector auto regression (VAR).

RGDP= f (SRL, LRL, EXRL, CML CAL)   (1)

ANALYSIS AND DISCUSSION OF FINDINGS

Table 1: **Unit Root Test**

Variable	ADF	MacKinnon @1%	MacKinnon @ 5%	MacKinnon non @10%	Prob.	Order of int	Summary
RGDP	-5.473202	-3.752946	-2.998064	-2.638752	0.0002	1(1)	Stationary
SRL	-4.751898	-3.711457	-2.981038	-2.629906	0.0008	1(1)	Stationary
LRL	-7.561443	-3.724070	-2.986225	-2.632604	0.0000	1(1)	Stationary
EXRL	-6.605833	-3.699871	-2.976263	-2.627420	0.0000	1(1)	Stationary
CML	-8.673842	-3.711457	-2.981038	-2.629906	0.0000	1(1)	Stationary
CAL	-5.352522	-3.752946	-2.998064	-2.638752	0.0000	1(1)	Stationary

Source: E-view, 9.0, 2024

Following Granger and Newbold (1974) and Engel and Granger (1987) assertion that many of the variables that appear in time series econometric models are non-stationary (or are integrated variables, we therefore perform unit root test on the univarite time series to ascertain the stationarity or otherwise of the series. The null hypothesis in these tests is that the underlying process which generated the time-series is non-stationary. This will be tested against the alternative hypothesis that the time-series information of interest is stationary. If the null hypothesis is rejected, it means that the series is stationary i.e. it is integrated to order zero. If, on the other hand, the series is non-stationary, it is integrated to a higher order and must be differenced till it becomes stationary. As can be seen from the results given in table (1), all the variables are stationary in difference. the null hypothesis has been rejected for all the variables indicating that all variables become stationary at their first difference and are thus integrated of order zero I(1) as the variables do not require further differencing (Gujarati, 2003).

Table 2: Presentation of Cointegration

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.846376	124.9822	95.75366	0.0001
At most 1	0.534149	66.91153	69.81889	0.0834
At most 2	0.407364	43.23094	47.85613	0.1270
At most 3	0.399015	27.01253	29.79707	0.1013
At most 4	0.192846	11.22779	15.49471	0.1979
At most 5 *	0.137522	4.586310	3.841466	0.0322

Source: E-view, 9.0, 2024

The cointegration test presented in the above table test the presence of long run relationship among the variables. In the cointegration test, we adopt the maximum Eigen value coefficient and the trace statistics. The coefficient shows at least one cointegrating equation from the trace statistics and the maximum Eigen value. We therefore rejects the null hypothesis and concludes that the presence of long run relationship between the dependent and the independent variables.

Table 3: Presentation of Normalized Cointegration

RGDP	CAL	CML	EXR	LR	SR
1.000000	14.25417	1.757967	-15.93470	13.16651	0.809785
	(2.24122)	(0.26326)	(2.22975)	(1.86970)	(0.52322)

Source: E-view 9.0, 2024

Table 4 presents the direction of long run relationship that exists between the dependent and independent variables. The result found that all the variables in the model have positive long run relationship with Nigeria economic growth.

Table 5: Pairwise Granger Causality Tests

Null Hypothesis:	Obs	F-Statistic	Prob.
CAL does not Granger Cause RGDP	31	0.11428	0.8925
RGDP does not Granger Cause CAL		0.12519	0.8829
CML does not Granger Cause RGDP	31	1.09864	0.3483
RGDPdoes not Granger Cause CML		0.12465	0.8833
EXR does not Granger Cause RGDP	31	0.06432	0.9379
RGDPdoes not Granger Cause EXR		0.00176	0.9982
LR does not Granger Cause RGDP	31	1.69731	0.2028
RGDP does not Granger Cause LR		0.78518	0.4666
SR does not Granger Cause RGDP	31	1.20616	0.3156
RGDPdoes not Granger Cause SR		0.70540	0.5031

Source: E-view print 9.0, 2024

The results above show financial sector liberalization and Nigeria as well as their independent variables as used in this study. The null hypothesis in case of other independent variables is accepted. As stated in the methodology, null hypothesis is rejected if Fcal>Ftab; accept otherwise. At 5% level of significance, from result presented we say likewise, there is no causal relationship between the variables.

Table 6: Estimated vector error correction mode

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.077775	0.045580	1.706335	0.1188
D(RGDP(-1))	0.373051	0.259133	1.439616	0.1805
D(RGDP(-2))	0.109111	0.241584	0.451646	0.6612
D(RGDP(-3))	-0.069078	0.280019	-0.246689	0.8101
D(CAL(-1))	-0.032441	0.687348	-0.047198	0.9633
D(CAL(-2))	0.175310	0.623116	2.281344	0.0442
D(CAL(-3))	0.274826	0.693566	0.396250	0.7002
D(CML(-1))	0.129934	0.215425	0.603154	0.5598
D(CML(-2))	-0.512208	0.222667	-2.300332	0.0442
D(CML(-3))	-0.139069	0.233505	-0.595570	0.5647
D(EXR(-1))	-0.341702	0.588960	-0.580178	0.5746
D(EXR(-2))	-0.057660	0.657910	-0.087642	0.9319
D(EXR(-3))	-0.386859	0.767112	-0.504305	0.6250
D(LR(-1))	0.497749	0.570274	0.872824	0.4032
D(LR(-2))	0.561585	0.553739	1.014169	0.3344
D(LR(-3))	0.551854	0.514773	1.072034	0.3089
D(SR(-1))	-0.049425	0.310512	-0.159172	0.8767
D(SR(-2))	-0.144226	0.304200	-0.474116	0.6456
D(SR(-3))	-0.263238	0.344827	-0.763391	0.4629
R-squared	0.728632	Mean dependent var		0.015645
Adjusted R-squared	0.240171	S.D. dependent var		0.129852
S.E. of regression	0.113190	Akaike info criterion		-1.273869
Sum squared resid	0.128119	Schwarz criterion		-0.378054
Log likelihood	37.47110	Hannan-Quinn criter.		-0.993311
F-statistic	4.491688	Durbin-Watson stat		2.388686
Prob(F-statistic)	0.002657			

Source: Extracts from E-view print 9.0, 2021

Having identified the cointegrating vector using Johansen, we proceed to investigate the dynamics of the saving process. The table above reports the final parsimonious estimated equation. The results show that the coefficient of the error-term for the estimated model is both statistically significant and negative. Thus, it will rightly act to correct any deviations from long-run equilibrium. Specifically, if actual equilibrium value is too high, the error correction term will reduce it while if it is too low, the error correction term will raise it. In addition, it performs well going by the relevant coefficients, all of which fall within the acceptable region. The explanatory variables explain well over 72 percent of the variations in commercial banks liquidity. This is adjudged by the value of the coefficient of determination, Adjusted R-squared. There is no serial autocorrelation given that the Durbin Watson Statistics within the acceptable bound. In addition, the probability of the F-Statistic suggests that the model has a very good fit.

Discussion of Findings

The results support the previous one that the variables constitute a cointegrated set .The results in terms of savings rate liberalization shows a strong positive relationship between lending rate

liberalization and economic growth. This suggests that capital market liberalization reduces economic growth when faced with inconsistent policies. The coefficient for exchange rate liberalization is both positive and significant, thus rejecting any substitutability between financial market liberalization and economic growth. Current account liberalization also exhibits a positive but insignificant impact on the dependent variables.The positive relationship between savings liberalization and economic growth confirm the empirical findings of Owusu and Odhiambo (2013) whose study found long-run relationship between economic growth and financial liberalization but contrary to the findings of Bhattacharyya (2014) that the quality of information is a major determinant of volatility and deregulation has no association with volatility. Ben Rejeb and Boughara (2014) revealed that financial liberalization does not lead to excessive volatility and Omankhanlen (2012) suggest that the financial sector reforms in the financial sector are not solely responsible for the sector being better off. The negative relationship between lending rate liberalization and economic growth contradict the empirical findings of Owusu and Odhiambo (2013) whose study found long-run relationship between economic growth and financial liberalization but confirm the findings of Bhattacharyya (2014) that the quality of information is a major determinant of volatility and deregulation has no association with volatility. Ben Rejeb and Boughara (2014) found out that financial liberalization does not lead to excessive volatility and Omankhanlen (2012) that the financial sector reforms in the financial sector are not solely responsible for the sector being better off. Waliullah (2010) was of the view that financial liberalization caused Karachi Stock Exchange of Pakistan to be highly sensitive and volatile; Ndako (2012) that after considering structural breaks, volatility decreases following financial liberalization; Afef (2014) that stock market volatility reduced after financial liberalization compared to the financial repression era in the Latin American countries.

CONCLUSION AND RECOMMENDATIONS

Conclusion

This study examined the effect of financial sector liberalization on Nigeria economic growth. The regression model found that financial sector liberalization can explain 75.9 percent variation on Nigerian economic growth. Regression coefficient of the variables justifies that current account liberalization, capital market liberalization and lending rate liberalization have negative relationship with Nigerian economic growth. The researcher concludes that there is significant relationship between savings rate liberalization and Nigerian economic growth; there is no significant relationship between lending rate liberalization and Nigerian economic growth. There is no significant relationship between exchange rate liberalization and Nigerian economic growth. There is no significant relationship between capital market liberalization and Nigerian economic growthand there is no significant relationship between current account liberalization and Nigerian economic growth.

Recommendations

i. The central bank of Nigeria should look into activities of deposit money bank (DMBs) regarding the continuous rise in lending rate and adopt policy measures that would reduce and make the lending rate attractive to enable the surplus sector of the economy

save more funds that would enhance investment and grow the Nigerian economy rather than slow it down.

ii.   Also, the monetary policy authority (CBN) should critically review the monetary policy rate down-ward to enable the deposit money banks (DMBs) to reduce their lending rate down-ward, while savings rate should be increased to attract more savings from members of the public.

iii.   Finally, federal government in collaboration with the monetary authority (CBN) should completely liberalize the financial market which will effectively allow the interaction of demand and supply to determine financial rates that will spur investment. Through this means rapid growth development of the economy can be achieved which will equally help the government achieve its macroeconomic objectives.

iv.   There should be effective and implementable monetary policies to back the deregulated interest rate to enhance the financial sector development. There should be policies to deepen the operational efficiency of the financial institutions to   enhance financial deepening in Nigeria; this can affect growth of Nigeria economy.

v.   There should be policies to further deepen the operational effectiveness and effectiveness of the financial system for increase financial sector development. Implementable polices should be made to enhance Nigeria economic growth.

vi.   The exchange rate deregulation should be deepened and the policies revisited to meet the financial liquidity needs of the investors. Nigerian Interest rate liberalization such as lending, monetary policy rate and prime lending rate should be harmonized with the objective of enhancing the growth of Nigeria economy.

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