International Journal of Innovative Finance and Economics Research 10(1):104-116, Jan.-Mar., 2022
© SEAHI PUBLICATIONS, 2022 www.seahipaj.org ISSN: 2360-896X

Exploring the Relationship Between Financial Institutions Development and Nigerian Economic Growth

Olufowobi, T.S, Oyedepo, A.O, Adesina, K.O, Akinbami, O.O , Oyeleke, R.O. & Adepoju, A.T

Department of Statistics,
Igbajo Polytechnic, Igbajo, Osun State, Nigeria

ABSTRACT
The study empirically investigated the relationship between financial institutions development and Nigeria economic growth for a period of 1996-2018. The regression model has a very good statistical fitness judged by high adjusted R-squared values while the t-values indicate the significance of the individual variables at 5% level of significance. The interpretations of the results are made with respect to GDP only. The Vector autoregressive (VAR) is used for estimating systems of interrelated time series and for analyzing the dynamic impact of random disturbances on the system of variables. SPSS version 25 was used for the analysis. Results showed that in Nigeria some of the indicators of financial deepening; money supply, private sector credit, inflation, favoured the supply leading hypothesis, meaning that financial deepening influenced economic growth. The financial sector has an important role to play in the growth of the Nigerian economy. We also observed some traces of demand following hypothesis with financial deepening variables like private sector credit and deposit money banks responding positively to gross domestic product. Savings must be encouraged and any country that does not encourage savings should forget about making any investment, whether private or public.
Keywords*:* Financial deepening, Financial Institutions, Economic Growth, Gross Domestic Product, Nigeria

INTRODUCTION

Financial deepening implies the ability of financial institutions to effectively mobilize savings for investment purposes. The growth of domestic savings provides the real structure for the creation of diversified financial claims. Financial deepening generally entails an increased ratio of money supply to Gross Domestic Product (Nnanna & Dogo, 1999; Nzott, 2004). The sum of all the measures of financial assets gives us the approximate size of financial deepening. That means that the widest range of such assets as broad money, liabilities of non-bank financial intermediaries, treasury bills, value of shares in the stock market, money market funds, etc, will have to be included in the measure of financial deepening.

The financial system has been acknowledged globally to play a catalytic role in the economic development of nations (Sanusi, 2009). It plays a key role in the mobilization and allocations of savings for productive use, provides structures for monetary management, the basis for managing liquidity in the system. It also assists in the reduction of risks faced by firms and businesses in their productive processes, improvement of portfolio diversification and the insulation of the economy from the vicissitudes of international economic changes.

The increasing deepening and expansion of the financial system is expected to lead to increased variety of financial instruments not only in the banking subsector but also in the capital market. Greater availability of varieties of financial institutions and instruments is expected to deepen the financial system. Financial deepening can be measured using several kinds of indices, a few of these are: the ratio of the growth rate of broad money (M_2) to that of the gross domestic product; ratio of Total banking assets to GDP, Gross Savings in the economy to GDP as well as Gross Domestic Investment to GDP as well as the Interest Rate Spread (i.e the difference between lending rate and deposit rate). The more deepened the financial system the more expanded the level of output and the

rate of growth of output are supposed to be.

Goldsmith (1969) motivated his path breaking study of finance and growth as follows: "One of the most important problems in the field of finance, if not the single most important one … is the effect that financial structure and development have on economic growth." Economic growth cannot be possible without the combined role of investment, labour and financial deepening (Ndebbio, 2004). Though Economists have accepted effects of financial deepening on economic growth, they have not had the same idea about the direction of causality, which means whether financial development causes economic growth or economic growth causes financial development. For instance, Shaw (1973) support that financial development causes economic growth, that is, financial deepening is a necessary pre-condition for economic growth. This hypothesis is usually labeled "supply leading" since it postulates that the presence of efficient financial markets increases the supply of financial services in advance of the demand for them in the real sector of the economy. In contrast to this opinion Patrick (1966) discusses that in the existence of same type of financial regulations, economic growth creates a demand, and financial system gives an automatic response to this demand which causes financial system development. They argue that financial deepening is merely a by-product or an outcome of growth in the real side of the economy. This is called the "demand-following" hypothesis since financial markets develop and progress following the increased demand for their services from the growing real economy.

Theoretically, financial development creates enabling conditions for growth through either a supply leading (financial development spurs growth) or a demand following (growth generates demand for financial products) channel, (Smith, 2007). A large body of empirical research supports the view that development of the financial system contributes to economic growth. Nigeria has experienced growth in the financial sector and consequently increases in financial deepening over time. Growth in financial outlet, development in the money and capital market increases in stocks, and activities in the capital market, increases bank branches, rapid use of credit and debit cards, increasing use of payment technologies like ATM machines(Automatic Teller Machine Technology) and electronic transfer of deposits, expanding Internet banking services, e-banking, and increase in total deposits, (Luis, 2009). Growth in financial sector should translate into the growth of the economy, because growth in the financial sector will make available funds for investment. In the capital market, market capitalization is the most widely used indicator in assessing the size of a capital market to an economy. Before 1988, the total market capitalization was less than N10 billion from 1988 to 1994, it hovered between N10 billion to N57 billion. In 2003, it was N1,3593 trillion, N2.1125 trillion in 2004 and N5.12 trillion in 2006.The market capitalization recorded the highest value of N13.2294 trillion in 2007. But this fell to N9.562 trillion in 2008 due to the global financial meltdown. The percentage market capitalization compared to the economy's Gross Domestic Product (GDP) helps to assess the size of the stock market. In 1981, this was 10.5%, but fell to 7.4% in 1994. It rose again to 9.3% in 1995, 10.6% in 1996; 18.9% in 2003, 25.6% in 2004 and 27.4% in 2005.

The question is whether the development in the financial sector, which has led to financial deepening, has been able to bring about anticipated growth, considering the fact that Nigeria still experiences high level of unemployment, inflation rates are still high, lack of credit for investment, the deposit and lending rates are still very wide apart, there is wide disparity between the lending and deposit rates. Therefore, this study examines the extent to which financial deepening has impacted on economic growth in Nigeria.

The relevance of the financial system to economic growth is not clear-cut. The direction of causality between financial deepening and growth has always been a controversial issue. There are two main opposing hypotheses which are testable: the 'supply- leading' hypothesis versus the 'demand-following' hypothesis. Supply-leading emphasizes financial deepening as an important prerequisite for growth. The supply-leading hypothesis suggests that financial deepening fuels growth. The existence and development of the financial markets brings about a higher level of saving and investment and enhance the efficiency of capital accumulation, (Levine, 1993). Demand-following posits that financial deepening follows growth; development of the financial markets is merely a lagged response to economic growth. This implies that any early efforts to develop financial markets might lead to a waste of resources which could be allocated to more useful purposes in the early stages of growth. As the economy advances, this triggers an increased demand for more financial services and thus leads to greater financial development (Lucas 1988, Favara 2003).

Since 1986, the monetary authorities in Nigeria have adopted various measures aimed at deepening the financial system and reducing the level of financial repression in the system. The reform of the financial structure led to changes in Nigeria's financial sector in an effort to foster competition, strengthen the supervisory role of the regulatory authority and streamline the relationship between the public and financial sectors of the economy. Many new financial instruments/assets and techniques have been developed and existing ones have been modified, the financial markets have been adapted to meet new demands and new circumstances. All these have been aimed at deepening the financial system. But how has all these impacted on economic growth in Nigeria. This study, therefore, examine the causal relationship that exists between finance and growth within the Nigerian economy

The main objective of the study is to explore the relationship between financial institutions development and Nigeria economic growth since the onset of financial reforms in 1996 up to 2018

Literature Review

Financial deepening implies the ability of financial institutions to effectively mobilize savings for investment purposes. The growth of domestic savings provides the real structure for the creation of diversified financial claims. Financial deepening generally entails an increased ratio of money supply to Gross Domestic Product (, Nnanna and Dogo, 1999, and Nzotta, 2004).

Financial deepening can be defined as the effort aimed at developing the financial system that is evident in increased financial instrument/assets in the financial markets – money and capital markets, leading to the expansion of the real sector of the economy (Njiforti et'al, 2007). It is the effort of developing countries to achieve growth through financial intermediation.

The definition of financial deepening in literature reflects the share of money supply in GDP. The most classic and practical indicator related to financial deepening is the ratio of *M2/GDP* which means the share of M1 + all time-related deposits and noninstutional money market funds to GDP in a certain year (Öçal and Çolak, 1999). Financial deepening is thus measured by relating monetary and financial aggregates such as M1, M2 and M3 to the Gross Domestic Product (GDP). M1: Technically defined, is the sum of: the tender that is held outside banks, travelers checks, checking accounts (but not demand deposits), minus the amount of money in the Federal Reserve float.

M2: The sum of: M1, savings deposits (this would include money market accounts from which no checks can be written), and small denomination time deposits M3: M2 plus the large time deposits.

M1, M2, M3 are all measures of money supply, that is the amount of money in circulation at a given time. Generally, the types of commercial bank money that tend to be valued at lower amounts are classified in the narrow category of M1 while the types of commercial bank money that tend to exist in larger amounts are categorized in M2 and M3, with M3 having the largest. The terms M1, M2, M3 refer to the monetary aggregates. For quite some time it was thought that there was a perfect one to one relationship between these numbers and the rates of inflation. Recently this relationship seems to have broken down, and the money supply numbers have lost some of their appeal to market participants.

Shaw (1973) explains the changes in system of finance with a term *financial deepening*. According to this idea, when financial system has achieved a specific depth, credits and deposits maturity would become equal.

Jhingan (2003) defines economic growth as a process whereby the real per capital income of a country increases over a long period of time. According to him, economic growth is measured by the increase in the amount of goods and services produced in a country. Economic growth occurs when an economy's productive capacity increases which, in turn, is used to produce more goods and services.

Economic growth is the increase of per capita gross domestic product (GDP) or other measure of aggregate income. It is often measured as the rate of change in GDP. Economic growth refers only to the quantity of goods and services produced. The term economic growth refers to the increase (or growth) of a specific measure such as real national income, gross domestic product, or per capita income. National income or product is commonly expressed in terms of a measure of the aggregate value added output of the domestic economy called gross domestic product, GDP. In other words, GDP is a measure of the value of all of the goods and services produced in a country in a year. GDP can be calculated as the value of the output produced either in a country or equivalently as the total income, in the form of wages, rents, interests, and profits, earned in a country. Thus, GDP is

also known as output or national income.

Impact of Financial Deepening On Economic Growth

According to Dancheng (2008), financial deepening plays an important role in economic growth and development:

i. Financial deepening can improve and enhance the allocation of resources. Finance has the significant function of adjusting economic structure. First, it is to create favorable conditions for readjustment of the industrial structure. In capital market, under the premise of ownership, corporate assets can shift the enterprises resources from industries or enterprises to the higher margin industries and the businesses through securitization form, and change the resource allocation structure, which realize the optimization and readjustment of the industrial structure. Secondly, it is to adjust the industrial structure and expand sources of funds. Readjustment of the industrial structure requires a large amount of incremental capital investment. Thirdly, it is to widen the space of the industrial structure adjustment. Incremental investment is often bounded by the sources of funds. Therefore, changes in the existing resources among different industries and distribution can quickly realize the stock restructuring.
ii. Financial deepening can promote the capital formation. If a country has not sufficient and sustained capital supply, it cannot form a new economic growth point and promote sustained and stable economic development. However, the capital formation in a region is constrained by the level of savings in the region, but using the direct and indirect means of financing, it can translate directly surplus funds of the inner region, outside enterprises and residents into the investment capital by changing savings into the investment indirectly or directly, this is the basic function of finance.
iii. Financial deepening can promote the reform of the corporate governance structure. A country's financial development, especially in the development of capital markets, not only provides a convenient channel of financing for enterprises, and financing mechanisms of capital markets can effectively promote the governance structure change of the state-owned enterprises.
iv. Finance is the core of the modern economy, in the economic operation; it plays an important role in guiding the flow of resources in the country and among countries through special funds flow, which gets scarce resources in the region.

Theoretical Review

Theoretically, financial development creates enabling conditions for growth through either a supply leading (financial development spurs growth) or a demand following (growth generates demand for financial products) channel. A large body of empirical research supports the view that development of the financial system contributes to economic growth (Rajan and Zingales, 2003). The most influential contributions on the relationship between finance and growth identify financial development as a crucial precondition of long-run growth, suggesting that financial liberalization is an important instrument of economic policy.

The Endogenous Growth Model

Bencivenga and Smith (1991) and Levine (1991) were among the first to propose endogenous growth models to identify the channels through which financial markets affect long-run economic growth. With the emergence of the endogenous growth theory, the direct and indirect influence of financial markets on economic growth has drawn considerable attention, particularly with regard to sound development strategies.

The endogenous growth models show that economic growth performance is related to financial development, technology and income distribution. The endogenous growth models focus on the relationship between financial development and long-run economic growth, emphasizing that productivity growth is most likely to be the channel of transmission from financial development to economic growth. It is concerned with financial markets, savings, investments, and growth. The argument is that financial markets will raise savings, investment and hence the growth rates.

The endogenous growth model of King and Levine (1993) focuses on the connections between finance, entrepreneurship and economic growth. Financial institutions in this model play an important role in both the monitoring and financing of potential entrepreneurs, in their initiation of innovative activities, and launching of new products.

Initially, in the entrepreneurial selection procedure, the financial intermediary monitors the whole set

of candidates in the market and picks up potential entrepreneurs with the ability to manage innovations in the intermediate goods production technology. Second, the financial intermediary finances the innovative activities. If entrepreneurs are successful, they will enjoy monopoly profits by producing the unique intermediate product at a lower cost than their rivals but charging the same price. However, to produce intermediate goods the successful entrepreneurs need external financing. The financial intermediary evaluates and finances those entrepreneurs while it can pay back the consumers (savers) the interest according to its evaluation of the profitability of those entrepreneurs. Requiring the input of intermediate goods and labor, the production of final goods is also affected by the innovative success − the productivity increases with the technological progress. Of course, the aggregate final goods' production influences the consumers, who also provide the labor in this model, by affecting their optimal choice of intertemporal substitution in consumption.

Harrod-Domar Growth Model

The economic growth models of Harrod and Domar are based on the experiences of the advanced capitalist economies. They both emphasize the role of investment in economic growth based on the dual characteristics of investment. Firstly, it creates income and secondly, it augments the productive capacity of the economy by increasing its capital stock. The former is regarded as the 'demand effect' while the later is the 'supply effect' of investment.

The Harrod - Domar model provides accurate short-term predictions of growth and has been used extensively in developing countries to determine the required investment rate or financing gap to be covered in order to achieve a target growth rate. It is based on the following assumptions. There is an initial full employment equilibrium level of income. There is the absence of government intervention. The models operate in a closed economy which has no foreign trade. The average propensity to save is equal to the marginal propensity to save. There are no lags in adjustments between investment and creation of productive capacity. Savings and investment relates to income of the same year. There is no depreciation of capital goods.

Based on the above assumptions, Domar's model was built on premise that to maintain full employment equilibrium level of income, aggregate demand should be equal to aggregate supply. Thus, we arrive at the fundamental equation of the model.

$\Delta I\alpha = I\delta$ 1

Where I= Investment,

ΔI = Changes in Investment,

α = Marginal propensity to save

δ = Net potentials social average productivity of investment ($=\Delta Y/I$)

Solving equation (1) by dividing both sides by I and multiplying by α we get:

$\Delta I/I = \alpha\ \delta$.....2

This equation shows that to maintain full employment the growth rate of net autonomous investment ($\Delta I/I$) must be equal to $\alpha\delta$ (the MPS times the productivity of capital). This is the rate at which investment most grow to ensure the use of potential capacity in order to maintain a steady growth rate of the economy at full employment. According to Domar, any divergence between the two will lead to cyclical fluctuations. When $\Delta I/I$ is greater than δ, the economy would experience boom and when $\Delta I/I$ is less than δ, it would suffer from depression.

Harrod model tries to show how steady growth may occur in the economy. Once the steady growth rate is interrupted, and the economy falls into disequilibrium, cumulative forces tend to perpetuate this divergence thereby leading to either secular deflation or secular inflation. Harrod's model is based upon three growth rates; the actual growth rate (G) which is determined by the savings ratio and the capital output ratio. The actual is given as $G=S/C$.

Where G is the rate of growth of output in a given period of time, C is the net addition to capital and is given as the ratio of investment to the increase in income ($I/\Delta Y$) and S is the average propensity to save APS.

The second is the warranted growth rate GW which is given as the $GW=S/Cr$ where S=APS and Cr= the capital requirement needed to maintain GW. This equation shows that if the economy is to grow at the steady rate of GW. That will fully utilize its capital; income must grow at the rate of S/Cr per year.

The third is the natural growth rate. This is the rate of increase in output at full employment as determined by a growing population and the rate of technological progress. Harrod's equation for the national growth rate is Gn. Cr = or ≠ S where Gn is the natural of full-employment rate of growth. For

full employment equilibrium growth, Gn=GW=G. Any divergence between the three rates of growth would cause condition of secular stagnation or inflation in the economy.

In summary the Harrod-Domar growth model summaries as follows: economic growth will proceed at the rate which society can mobilize domestic savings resources coupled with the productivity of the investment (Somoye, 2002).

Supply - Leading Hypothesis

The supply-leading hypothesis suggests that financial deepening fuels growth. The existence and development of the financial markets brings about a higher level of saving and investment and enhance the efficiency of capital accumulation. This hypothesis contends that well-functioning financial institutions can promote overall economic efficiency, create and expand liquidity, mobilize savings, enhance capital accumulation, transfer resources from traditional (non-growth) sectors to the more modern growth inducing sectors, and also promote a competent entrepreneur response in these modern sectors of the economy.

According to Mckinnon (1973), a farmer could provide his own savings to increase slightly the commercial fertilizer that he is now using and the return on the marginal new investment could be calculated. However, there is a virtual impossibility of a poor farmer's financing from his current savings, the total amount needed for investment in order to adopt the new technology. As such access to finance is likely to be necessary over the one or two years when the change takes place.

The recent work of Demirguc-Kunt & Levine (2008) in a theoretical review of the various analytical methods used in finance literature, found strong evidence that financial development is important for growth. To them, it is crucial to motivate policymakers to prioritize financial sector policies and devote attention to policy determinants of financial development as a mechanism for promoting growth.

Demand - Following Hypothesis

The demand-following hypothesis view is that the development of the financial markets is merely a lagged response to economic growth. This implies that any early efforts to develop financial markets might lead to a waste of resources which could be allocated to more useful purposes in the early stages of growth. As the economy advances, this triggers an increased demand for more financial services and thus leads to greater financial development.

Some research work postulate that economic growth is a causal factor for financial development. According to them, as the real sector grows, the increasing demand for financial services stimulates the financial sector (Gurley & Shaw, 1967). .

They argue that financial deepening is merely a by-product or an outcome of growth in the real side of the economy, a contention revived by Demetriades and Hussein (1996). According to this alternative view, any evolution in financial markets is simply a passive response to a growing economy.

Empirical Literature

Empirical evidence suggests that there are economies that have indeed benefited from well-developed financial systems in the past. For some of the very successful emerging market economies, finance appears to have been a crucial factor for economic success, e.g. in Taiwan (Chang & Caudill, 2005). However, it is not always possible to identify such a strong effect of finance on growth in mature OECD countries (Shan and Morris, 2012). For developing economies, the results are similarly diverse. Some studies find a strong impact of finance on growth while others find the finance-growth relationship to be more complex.

Ndebbio (2014) studied the financial deepening, economic growth and development: evidence from selected Sub- Saharan African countries, argued that the poor growth of output (economic growth) of any country is caused by shallow financial depth, the range of financial assets for that country is narrow. He tried to explain why most Sub – Saharan African countries have low or negative per capita growth rates. He identified a range of financial assets that could adequately approximate financial deepening. Using ordinary least squares (OLS) multiple regression procedure, three modelled equations, were estimated and analysed. A cross-country regression was used for 34 SSA countries. He concluded from his results that financial deepening as represented by the growth rate of per capita (real/nominal) money balances (*GPRMB/GPMB*) and degree of financial intermediation (*FDY*) positively affect per capita growth of output.

Coskun Koçukozmen (2009) in his study; financial development and economic growth: a cointegration approach, examined the direction of the relationship between financial development and economic

growth with Granger Causality test on a quarterly basis between 1991-2008. He used GDP as an indicator of economic growth, and the ratio of M2, M2Y, and M3 money supplies to GDP was used as indicators for measuring financial deepening. The results show that a long term relationship between financial development and economic growth does not exist. He argued that financial systems need developed financial markets, which completed its deepening to affect economic growth positively. The results of Granger Causality also showed that financial development has a positive effect on the economic growth rate in the short run.

Mbutor (2019) analyzed the channels of transmission of monetary policy in the Nigerian economy. Using variables such as GDP, domestic prices, broad monetary aggregates and real effective exchange, he discovered that, the lending rates had the highest impact on GDP, in terms of time of impact, broad money supply had the fastest impact on GDP. He argued that the role of the banking system in propagating monetary impulses to the real sector should be recognized as critical.

Nicholas et'al(2016), examines whether a long-run relationship between financial development and economic growth exists. In their study; Financial Deepening and Economic Growth Linkages: A Panel Data Analysis, the specification used to test for cointegration and causality between financial depth and growth was given as:

Yit = aoi + a1iFit + a2iXit + uit… 1

Where: Yit is GDP per capita; Fit is a measure of financial development; Xit is a set of control variables, and uit is the error term. Their results support a positive and statistically significant equilibrium relation between financial development and economic growth for all different financial indicators that was tested for and in all groups of countries.

Ayadi (2017) examine the structural adjustment, financial sector development and economic Prosperity in Nigeria. They evaluated the structural adjustment program in Nigeria, with a view to finding out if it resulted in an enhanced level of financial development. Using the Spearman rank correlation, they examined the relationship between financial development and economic growth during post-SAP period. They argued that the extent of financial development depends on the volume of bank credit as well as the stock market capitalization. They employed the use of some of the variables identified by Beck et'al (2000) to test whether or not economic growth and financial development co-move since the introduction of structural adjustment in Nigeria. Their results reveal a lack of consistent relationship between financial system development and economic growth in post-SAP Nigerian economy.

Christopoulos and Tsionas (2004), use panel cointegration analysis to examine whether a long-run relationship between financial development and economic growth exists for 10 developing countries over the period 1970–2000. Their findings are supportive to a unique cointegrating vector between growth, financial development, investment share, and inflation, and to unidirectional causality from financial depth to growth.

Oya Pinar and Evren Damar (2006), examines the financial sector deepening and economic growth: Evidence from Turkey. They analyzed the effects of financial sector deepening on economic growth using a province-level data set for 1996-2001 on Turkey. The analysis was carried out using two different methods: cross-section analysis and dynamic panel data analysis. Using both traditional OLS and dynamic panel GMM techniques, the results showed that financial deepening (i.e. an increase in the total deposits to GDP ratio) has a direct and robust impact on the growth rate of real GDP per capita. However, unlike most of the cross-country studies in this literature, the findings suggest that financial development has a negative relationship to economic growth.

Thomas (2009) investigates the direct and indirect causal interactions between financial deepening, trade openness and economic growth for 13 Latin American and Caribbean countries. They employed *unit root and cointegration tests to* identify the stationary properties and possible cointegration relationships of the investigated time series, employing Hsiao's version of Granger causality within a autoregressive (*VAR*) or vector error correction models (*VECM)* framework. Findings from the result showed that for Latin America and the Caribbean, they detected almost no evidence of finance led growth, most results pointed at a demand-following or insignificant causal interaction between finance and growth in the Latin American region.

METHODOLOGY AND MODEL SPECIFICATION

The data employed in this study is annual time series data of relevant variables and the data are mainly secondary. The data were collected from publications of the Central Bank of Nigeria (CBN), Federal Office of Statistics (FOS) and World Bank publications. Financial deepening was defined as the ratio of money supply to GDP, and it is a function of money supply to GDP, value of cheques to money supply, ratio of private sector credit to GDP, financial savings to GDP, rate of inflation, real lending rates, deposit money bank assets to GDP, and Currency outside Banks to money supply. The prime lending rates of the banks shall be used to stand for interest rate (the long term interest).

Autoregressive Distributed Lag model (ADL) was used in estimating the parameters of the model. Error Correction Model (ECM) and Vector Error Correction (VEC) model was, the Vector Autoregressive (VAR) model will be used to estimate the parameters of the model.

From Model Specification

$$\mathbf{GDP_t = f\ (FD_t)} \quad \mathbf{1}$$

$FD_t = (MSG_t, PLR_t, FSG_t, CHM_t\ INF_t, PCG_t, DBG_t, COBM_t)$ 2

Where:

GDP_t = Gross Domestic Product FD_t = Financial Deepening

MSG_t = Money supply/GDP ratio (M2/GDP) FSG_t = Financial Savings/GDP ratio (FS/DGP)

CHM_t = Value of Cheques Cleared to Money Supply (CHQ/MS2) PCG_t = Ratio of Private Sector Credit to GDP (PSC/GDP

DBG_t = Ratio of Deposit Money Bank Asset to GDP (DBMA/GDP) INF_t = Rate of Inflation

PLR_t = Prime lending rates

$COBM_t$ = Currency outside Banks to Money Supply (COB/MS2)

The above variables were logged to take care of non-linear phenomena. Thus, we consider a restricted standard form of our VAR model with lag order k, as:

$Y_t = \mu + \sum^{k}_{i=1} A_i Y_{t-1} + \varepsilon_t$ 2

Where Y_t is an (n x 1) vector of endogenous variables, μ is a vector of constants, while Yt_{-i} is the corresponding lag term for each of the variables. A_i is an (nxn) matrix of autoregressive coefficient vector of Y_{t-i}, ε_t is a vector of white noise processes.

Unit Root Test

The ADF test, can be defined as follows

$\Delta Y_t = Y_0 + \alpha t + \Phi Y_{t-1} + \sum \Phi_i Y_{t-1} + \mu_t$ 4

$\Delta Y_t = Y_t - Y_{t-1}$ 5

Where:

Y_t = dependent variable Y_0 = constant term

T = trend variable

U_t = stochastic disturbance term

There are hypotheses to test series H_0 : $\Phi = 0$ (Yt is non-stationary) H_1 : $\Phi \neq 0$ (Yt is not non-stationary)

ADF is a regress test using each series own lagged terms with big differences. Many econometric programs satisfy ADF test statistics. If calculated t-value of variable is greater than ADF critical t-value, then H0 is rejected and thus the data is stationary. It will be compared with the Mckinnon critical values, if ADF test statistic is greater than McKinnon critical values absolutely, the series are stationary at that level.

. This relationship is a strong relationship.

Granger's operational causality definition depends on the hypotheses below:

i. Certain causality is possible only with past causes present time or future time. Cause is always to be come true before the result. In addition, this makes time lagged between causes and results.

ii. Causality can be determined only stochastic process. It is not possible to determine the causality between two deterministic processes.

$Y_t = \alpha + \sum \beta_j X_{t-j} + \sum \Phi_i Y_{t-I} + U_t$ 6

$X_t = \alpha + \sum \beta_j Y_{t-j} + \sum \Phi_i Xt\text{-}j + U_t$ 7

In Granger Causality test, there are three possible situations that one directional causality from x to y or y to x, opposite direction between x and y or one affect the other and independency of x and y each

other. This situation changes according to the null hypothesis and lagged values randomly in equations above whose parameters are whether equal to zero or not. According to researches, randomly choice makes causality incline to deviations importantly. Indicators of the economic growth and the financial deepening are variables, which are used for Granger Causality test. Moreover, this test can determine the effects of one variable on the other.

RESULT AND DISCUSSION

Until recently, with the recapitalization in the banking sector which resulted in mergers and acquisitions, increased bank branches and innovations of new products and technology coupled with growth in the capital markets, the Nigerian financial system remained by and large relatively underdeveloped because of lack of financial intermediation and financial deepening which the economy requires for sustained growth. In Nigeria however, the influence of money supply on economic growth can only be taken with mixed reactions. Between 1981 and 1985, the growth rate of the economy measured by the real GDP ranged from 21.3% in 1981 to 3.0% in 1995.

By 1981, the real GDP grew by 26.8% and remained negative till 1994. A simple variance analysis shows that between 1981 and 1996, the mean spread of the GDP was 108.7. However, between 1996 and 2018, the real GDP had a variance of 9.1. The variability of the GDP was much higher before deregulation, while it becomes lower during and after the deregulation of the economy. Both M1 and M2 had little correlation with growth of real GDP before deregulation in 1996. M2 was observed to have a variance of 362.6 and a correlation coefficient of 0.21.

The period 1996-2018 had a lower correlation of 0.16 between broad money (M2) and growth of real GDP. The mean spread of M2 was 289.2 as against 108.7 for the real GDP.

The correlation between M1 and GDP between 1970 and 1996 stood at 0.22 and for 1996- 2018, it was 0.33.

Unit Root Test

This research work began with the investigation of the time series properties of each variable employed in the study by using both the Augmented Dickey Fuller (ADF) and Phillip Peron (PP) tests to determine the order of integration of the series. Table 4.4 shows that the two tests are consistent, suggesting that GDP, INF, PLR, FSG, PSG, and DMBA are all stationary at first difference which implies that, they all integrated of order one, while MSG, VCM and COBM are stationary at second difference, meaning they are integrated of order two. Since the series are not integrated of the same order, it therefore excludes the possibility of a long run relationship among the variables, which implies the cointegration test is not necessary. Therefore the analysis of this study proceeded with the Vector Autoregressive approach.

Table 1: Unit Root Test

	AUGMENTED DICKEY FULLER TEST			**PHILIP PERRON TEST (PP)**			**Order of Integration**
VARIABLES	**Levels**	**1st Difference**	**2nd Difference**	**Levels**	**1st Diff**	**2nd Diff**	
GDP	-1.914316	-3.758154		-1.978333	-4.583836		I(1)
MSG	-2.157673	-3.245701	-4.803433	-2.316620	-4.462011		I(2)
COBM	-1.196450	-3.646667	-6.522666	-1.121046	-5.191223		I(2)
INF	-3.259615	-4.120127		-2.707685	-4.153398		I(1)
PLR	-3.279916	-5.083103		-3.513118	-5.676626		I(1)
FSG	-3.172769	-4.883144		-4.121516			I(1)
VCM	-1.384435	-3.500262	-3.754765	-1.972000	-6.845338		I(2)
PSG	-1.444976	-7.169413		-2.486433	-5.856403		I(1)
DMBA	-2.015773	-4.131488		-2.335235	-5.768409		I(1)

Notes: The ADF and PPT critical value at 5% level is -3.6219. All the series had intercepts with trends respectively. The critical values are based on Mckinnon criterion. The optimal lag is selected on the basis of Akaike Information Criterion (AIC). The null hypothesis of the test is: a series has a unit root. The rejection of the null hypothesis is at the 5% level of significance .I() shows the level of integration.

Granger Causality

Since no cointegration relationship exists between GDP and financial deepening, the next step is to examine the direction of causality among the variables. The effect was analyzed using granger causality test as shown in table 2. Only the significant results are reported below.

The results show that a weak unidirectional causality was found running from Financial Savings to GDP, implying that the effect or influence of financial savings to GDP in Nigeria is weak. The results show that Currency outside banks granger causes inflation, implying that the more currency (money) outside the banking sector, the higher the level of inflation, this is in line with the quantity theory of money. There exists a bi-directional causality between GDP and VCM (the ratio of value of cheques cleared to money supply). MSG (ratio of money supply to GDP) granger cause DMB (ratio of deposit money bank asset). Also, PSC (ratio of private sector credit to GDP) granger causes MSG. The causality test also suggests that economic growth proxied by GDP causes PSG (ratio of private sector credit to GDP)) without a feedback.

Table 2 : Granger causality test

Null Hypothesis	F- test	P- Value
FGS does not Granger Cause GDP	3.59504	0.04988
COB does not Granger Cause INF	6.13604	0.00986
COB does not Granger Cause MSG	4.54199	0.02628
PLR does not Granger Cause COB	5.02064	0.01935
MSG does not Granger Cause DMB	6.2755	0.0091
DMB does not Granger Cause MSG	4.92775	0.02051
DMB does not Granger Cause VCM	3.76889	0.04418
FGS does not Granger Cause INF	7.72825	0.0041
PLR does not Granger Cause INF	3.65982	0.04766
INF does not Granger Cause PLR	5.95264	0.01098
PSC does not Granger Cause M2	4.77072	0.02267
PSC does not Granger Cause VCM	1.6028	0.23031
GDP does not Granger Cause PSG	14.4276	0.00022
GDP does not Granger Cause VCM	12.0483	0.00055

*Notes: All tests are achieved with a lag length chosen according to the Akaike criterion. The direction of causality is based on the probability value. The smaller p-value indicated the presence of causality***.**

Analysis of Regression Results

The regression model has a very good statistical fitness judged by high adjusted R-squared values while the t-values indicate the significance of the individual variables at 5% level of significance. The interpretations of the results are made with respect to GDP only.

From Table 4.8, COB, FSG and MSG exhibit a positive and significant relationship with GDP at 5% level of significance. If COB is lagged by one is increased by one unit, GDP will increase by 0.0175 points. Also, if Financial saving (FSG) is lagged by one is increased by one unit, GDP increases by 0.015648 points. When MSG is lagged by one, is also increased by one unit, GDP increases by 0.017852.

VCM, DMB, PLR, have a positive correlation with GDP with little significance. If the previous year's VCM is increased by one unit, GDP will increase by 0.00034 unit points. GDP rises by 22 unit points when DMB lagged once increases by one unit. The result further indicates that if previous

year's PLR rises by one unit, GDP will rise by 0.0036 unit points. Increasing FSG by one unit increases GDP by 0.0034 unit points. A positive relationship is observed between INF and GDP. This debunks the recent empirical growth literature of Khan and Senhadji (2001) that there is a negative but nonlinear relationship between inflation and growth.

The implication of the above findings is that, deepening of the financial sector has been able to mobilize and allocate resources to some extent to meet up with investment expenditure that will final translate into meaningful economic growth.

Table 3. Standard errors & t-statistics

	GDP1	DMB	FS	COB	INF	M2	PLR	VC
(-1)	0.897740	11.73590	-2.898033	0.160378	-16.67490	6.056541	1.541413	60.75840
	(0.04752)	(4.90191)	(4.15972)	(1.50512)	(6.35119)	(2.93362)	(3.28592)	(68.7266)
	[18.8932]	[2.39415]	[-0.69669]	[0.10655]	[-2.62548]	[2.06453]	[0.46910]	[0.88406]
DMB(-1)	22 0.008	-0.094983	0.133451	-0.119883	0.204267	-0.317228	-0.158787	3.066472
	(0.00584)	(0.60260)	(0.51136)	(0.18503)	(0.78076)	(0.36063)	(0.40394)	(8.44862)
	[1.37569]	[-0.15762]	[0.26097]	[-0.64792]	[0.26163]	[-0.87965]	[-0.39309]	[0.36296]
FS(-1)	0.015648	0.050583	-0.254708	0.013841	0.803016	-0.088442	-0.514789	-0.416946
	(0.00313)	(0.32261)	(0.27377)	(0.09906)	(0.41800)	(0.19307)	(0.21626)	(4.52317)
	[1.16658]	[0.15679]	[-0.93038]	[0.13973]	[1.92110]	[-0.45807]	[-2.38042]	[-0.09218]
COB(-1)	0.017544	-1.721087	0.133793	0.782822	2.466214	-0.976479	-0.035471	-11.76171
	(0.00837)	(0.86334)	(0.73263)	(0.26509)	(1.11860)	(0.51668)	(0.57873)	(12.1044)
	[2.09639]	[-1.99351]	[0.18262]	[2.95306]	[2.20474]	[-1.88991]	[-0.06129]	[-0.97169]
INF(-1)	0.000587	-0.095609	0.050650	-0.006882	0.155021	-0.032125	0.072221	0.517172
	(0.00114)	(0.11792)	(0.10007)	(0.03621)	(0.15279)	(0.07057)	(0.07905)	(1.65331)
	[0.51330]	[-0.81078]	[0.50616]	[-0.19008]	[1.01463]	[-0.45521]	[0.91365]	[0.31281]
M2(-1)	0.017852	0.791737	0.379086	0.218187	0.308691	1.090533	0.824224	-2.800844
	(0.00979)	(1.01042)	(0.85743)	(0.31025)	(1.30915)	(0.60470)	(0.67732)	(14.1664)
	[-0.80166]	[0.78357]	[0.44212]	[0.70327]	[0.23579]	[1.80344]	[1.21689]	[-0.19771]
PLR(-1)	0.003621	-0.091557	0.578981	0.195534	1.183138	0.090347	0.178028	0.103186
	(0.00394)	(0.40606)	(0.34458)	(0.12468)	(0.52611)	(0.24301)	(0.27220)	(5.69310)
	[0.91995]	[-0.22548]	[1.68026]	[1.56828]	[2.24883]	[0.37178]	[0.65405]	[0.01812]
VC(-1)	0.000338	-0.023984	0.015372	-0.003275	0.056619	-0.015524	-0.009435	0.491751
	(0.00021)	(0.02117)	(0.01796)	(0.00650)	(0.02743)	(0.01267)	(0.01419)	(0.29680)
	[1.64940]	[-1.13295]	[0.85570]	[-0.50389]	[2.06426]	[-1.22537]	[-0.66489]	[1.65684]
R-squared	0.992671	0.776293	0.449858	0.873664	0.807084	0.687162	0.364677	0.829030
Adj. R^2	0.989251	0.671897	0.193125	0.814707	0.717056	0.541171	0.068193	0.749243

MAJOR FINDINGS

From the empirical analysis we found out that; financial deepening does not impact or influence economic growth in the short run. However, in the long run there is a significant effect of financial deepening on economic growth. Lending credence to the supply leading hypothesis that financial deepening causes economic growth.

Also, the private sector credit contributes positively to economic growth; however, the level of significance is very low. A positive relationship is observed between inflation and GDP. This result is

in line with the a priori expectations since we normally expect rising inflationary pressures to have a positive effect on growth. Even though there has been clear improvement in the financial sector over the past few decades, the degree of financial development is still below the threshold needed to spur economic growth.

From the demand side, it was also observed that GDP had a positive and significant impact on Deposit Money Bank Asset, Money supply and private sector credit, thereby laying credence to the demand following hypothesis. In the Long-run, there is strong evidence that economic growth is leading financial development when bank credit to private sector is used thereby supporting the demand following hypothesis.

CONCLUSION AND RECOMMENDATIONS

In this study, we used the structural vector auto-regressive (SVAR) model to analyze the relationship between financial institutions development and Nigeria economic growth, given the two theories; supply leading and demand following hypotheses. The study basically investigated the causality between financial deepening and economic growth. Results showed that in Nigeria some of the indicators of financial deepening; money supply, private sector credit, inflation, favoured the supply leading hypothesis, meaning that financial deepening influenced economic growth. The financial sector has an important role to play in the growth of the Nigerian economy. We also observed some traces of demand following hypothesis with financial deepening variables like private sector credit and deposit money banks responding positively to gross domestic product. However, this study concluded that financial deepening propels economic growth because the variables of financial deepening were more significant in explaining economic growth, therefore supporting the supply leading hypothesis. The following recommendations were suggested:

There should be a determined effort by the monetary authorities to bridge the gap existing between lending rate and deposit rate, foster a moderate rise in nominal rates and stabilize inflationary pressures so that the people will be fully motivated to save in a bid to generate needed loanable funds for investment in Nigeria. Savings must be encouraged and any country that does not encourage savings should forget about making any investment, whether private or public,

There is an urgent need to sustain a higher level of macroeconomic stability in Nigeria, reduce the high incidence of non performing credits ensure that private sector credits are channeled to the real sector of the economy, enhance the level of corporate governance in the financial system.

Based on the findings of the study, another recommendation is that monetary authorities should continue with the policy reforms to consolidate the emerging confidence in the financial system. The financial sector reforms should be intensified; this will create a sound market-oriented financial sector, leading to an increase in the level of financial savings and level of financial activities in the financial markets, which will translate to increased deepening and hence economic growth.

REFERENCES

Aghion, P., Bacchetta, P., & Banerjee, A. (2004): Financial deepening and economic development in Malaysia." Economic Papers, 26 (3), 249-260.

Ayida, O.E. (2017) Structural adjustment, financial development and economic prosperity in Nigeria, *International Journal of Finance and Economics*, (1)9.

Beck, T., Demirguc. K, & Levine, R (2000). A new database on financial development and structure. *World Bank Economic Review* 14 (3), 597- 605.

Bencivenga, V.R., & Smith, B.D (1991): "Financial intermediation and endogenous growth". *Review of Economic Studies*, 58(2): 403-44.

Chang, T., & Caudill, S. B (2005): Financial development and economic growth: The case of Taiwan, Applied Economics, 37, 1329-35.

Christopoulos, D. K., & Tsionas, E. G. (2004): Financial development and economic growth: Evidence from panel unit root and cointegration tests, *Journal of Development Economics*, 73, 55-74.

Demetriades, P.O., & Hussein, K.A. (1996). Does financial development cause economic growth? Time series evidence from 16 countries. *Journal of Development Economics*, 51, 387-411.

Demirgüç, K, & Ross, L (2001) "Stock market development and financial deepening in developing countries: some correlation patterns", the world bank, policy research working Paper 1084.

Felix, A (2008): Structural adjustment, financial sector development and economic prosperity in Nigeria. *International Research Journal of Finance and Economics* 1(5) 1450- 2887

John, E. & Ndebbio, U (2004): Financial deepening, economic growth and development: Evidence from selected sub-Saharan African countries. African Economic Research Consortium, P.O. Box 62882-00200 Nairobi, Kenya Journal of Economic Literature , 35 (2), 688-726.

King, R.G. & Levine, R (1993): Finance, entrepreneurship and growth: Theory and evidence". Journal of Monetary Economics, 32(3): 513–542.

Levine, R (1997): Financial development and economic growth: Views and Agenda, A Quantitative Reassessment of the Finance Growth Nexus: Evidence from a Multivariate VAR , *Journal of Development Economic*s, 60, 381- 405

Manning, M. J (2003): "Finance Causes Growth: Can We Be So Sure?" Contributions to Macroeconomics, 3 (2003), http://www.bepress.com/bejm/contributions/vol3/iss1/art12

Mbutor (2019) analyzed the channels of transmission of monetary policy in the Nigerian economy. . The Nigerian Journal of Risk

Ndebbio, J.E. (2014) Financial Deepening, Economic Growth and Development: Evidence from Selected Sub-Sahara African Countries, AERC Research Papers No. 142 African Economic Research Consortium, Naira

Nicholas, A (2017) Financial Deepening and Economic Growth Linkages: A Panel Data Analysis, University of Piraeus, Piraeus; Utrecht School of Economics, University of Utrecht. Review of World Economics, 143 (1)

Nnanna, O (2001): Monetary management: objectives, tools and the role of central banks in the region". regional forum on economic and financial management for parliamentarians. Nigeria: WAIFEM.

Peter, L., & Rousseau (2007): What is happening to the impact of financial deepening on economic growth?

Samuel, M. N., & Emeka, J. O (2009): Financial deepening and economic development of Nigeria: an empirical investigation. *African Journal of Accounting, Economics, Finance and Banking Research* 5(5)

Sanusi, J.O. (2002): Central bank and the Macroeconomic Environment in Nigeria." Lecture Shaw, E (1973): Financial Deepening in Economic Development, London, Oxford University Press

Shaw, E (1973): Financial Deepening in Economic Development, London, Oxford University Pre

Tabi, A. J (2011): Financial development and economic growth in Cameroon, 1970- 2005. *Journal of Economics and International Finance* 3(6), 367-375

Thomas, G (2009): Financial Deepening, Trade Openness and Economic Growth in Latin America and the Caribbean. Center for International Economics University of Paderborn, Warburger Strasse 100 33098 Paderborn / Germany.