

Financial Development and Economic Growth Nexus in Nigeria

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ABSTRACT: This study investigated the relationship between financial development and economic growth in Nigeria during the period of 1986 – 2017. Specifically, it seeks to examine the effect of financial deepening measured as the ratio of broad money supply to GDP, interest rate, stock market recapitalization and credit to private sector to GDP on economic growth in Nigeria. The study adopted recent econometric techniques such as Augmented Dickey-Fuller (ADF) and the Phillip-Perron (PP), Unit Root Tests, cointegration test as well as the Toda-Yamamoto causality test was used to accomplish its objectives. The results revealed that financial development has significant positive relationship on economic growth in Nigeria only in the short-run while negative impact in the long-run and that causality runs from financial development to economic growth. Furthermore, the study revealed that the stock market capitalization have significant positive impact on economic growth in Nigeria in the short run while negative significant in long run. The interest rate has positive insignificant effect on economic growth in Nigeria only in the short run while negative significant effect in the long run. The ratio of domestic credit to private sector to GDP have positive significant impact on economic growth in Nigeria only in the long run while positive insignificant in the short run. Causality also runs from stock market development, interest rate, banking sector development and recapitalization to financial development in Nigeria. The policy implication of these findings is that financial development is one of the desired panaceas to achieving both long-run and short-run sustainable economic growth in Nigeria and any policy targeted on financial development is expected to positively affect the level of economic growth in Nigeria. Based on these findings, the study therefore recommends among other things that the government should redirect its policy efforts towards the promotion of an efficient financial system while discouraging the elements of bureaucratic bottlenecks in the system as this will help accelerate the pace of growth of the economy.

KEYWORDS: Financial development, economic growth, ratio of broad money supply to GDP, interest rate, stock market recapitalization, credit to private sector to GDP

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I. INTRODUCTION

Financial development is the process that marks improvement in quantity, quality and efficiency of financial intermediary services. This process involves the interaction of many activities and institutions and possibly associated with economic growth. In other words, it implies the level of development and innovation of traditional and non-traditional financial services (Valverde, et al., 2004). Many other authors have also defined financial development in various ways. The World Economic Forum (2012) defines it as the factors, policies, and institutions that lead to effective financial intermediation and markets, as well as deep and broad access to capital and financial services. Noureen (2013) sees it as a catalyst in economic development and is widely recognized by both the monetary and development economists. For Garba (2014) he perceived it as the increased provision of financial services with a wider choice of services geared towards the development of all sectors of the economy. According to the new growth theorists, a well-developed financial system facilitates high and sustainable economic growth (Hicks, 1969). Oloyede (1998) remarked thus, “Financial development is the outcome of accepting appropriate real finance policy such as relating real rate of return to real stock of finance”.

Financial systems play a vital role in economic development and, to be successful in the longer term, countries must take a holistic view by identifying and improving long-term factors that are crucial to their development. Such a process would allow countries to encourage economic prosperity for all participants in the global economy. This approach is supported by empirical studies that have generally found that cross-country

differences in levels of financial development explain a considerable portion of the cross-country differences in growth rates of economies (World Financial Development Report, 2013).

Financial development starts with the banking system and depends on the diffusion of scriptural money, which the banking system provides. As countries become highly developed, the share of the banking system in the assets of the financial sector declines, while that of newer and more specialized institutions – such as building societies, life insurance companies, retirement funds and finance assets of the banking system are of lesser value than the financial assets held by all other financial institutions, whereas the reverse is true in economically underdeveloped countries (Garba, 2014). Hence, Shah and Shah (2011) describe financial development as the process involving actions such as funding and expounding functions of financial institutions, developing new (innovative) financial products and developing markets for these products. Osisanwo (2013) describes financial development as increased financial services in an economy with a wider choice of services geared to all levels of the society.

It is widely acknowledged that financial development is a multidimensional concept and constitutes a potentially important mechanism for long-run economic growth. It plays fundamental roles in the development and growth of the economy. The effectiveness and efficiency in performing these roles, particularly the intermediation between the surplus and deficit units of the economy, depends largely on the level of development of the financial system. The success of the financial system all over the world in providing its developmental roles has been predicated on the initiation of financial sector reforms such as the introduction of market-based procedures for monetary control, the promotion of competition in the financial sector, and the relaxation of restrictions on capital flows. The aim of initiating these reforms is to create a more efficient and stable system, which will facilitate optimum performance in the economy. This means providing a foundation for implementing effective stabilization policies and successfully mobilizing capital and putting it to effective use, which leads to achieving higher rate of economic growth (Johnston, et al., 1999).

Furthermore, the Nigerian financial system is not effectively providing its development roles as such and is currently not in position to fulfill its potential as a propeller of economic growth and development. The formal financial system is relatively shallow and provides a relatively low level of credit to the private sector. Audu and Okumoko (2013) attributed this to the pathetic situation in the country where government deficits that have to be financed by domestic resources provide an opportunity for the banking system to push funds into a relatively safer investment outlet than lending to the private sector. According to them, this has the capacity to push up lending rates, and decrease the amount of resources channelled to private sector credit. Worst still, the banks rely on public fund to finance government borrowing; so, it is a case of lending government fund to same government to generate safe return. Also, Maduka and Onwuka (2013) argue that despite the growth of the banks and non-bank financial institutions in Nigeria, and financial liberalization policy, the country's economic growth is sluggish as the per capita income is less than \$4,000 and most of the industries are winding up giving rise to unemployment thereby putting a question mark on level of development of the financial market in Nigeria and its potency in supporting the investment needed to boost economic growth. A parallel World Bank review of financing for Rural Micro and Small- Scale Enterprises has also revealed that the absence of efficiently operating rural financial markets in Nigeria has become a serious constraint on sustainable rural development (Ajumogobia & Okeke, 2015). In sum, both the formal and informal financial sectors in Nigeria are not currently in a position to effectively support a strong expansion of the real sector and maximize their contribution to economic growth and development. Also, in spite of that, Nigeria's major productive sectors have considerably shrunk in size since the 1980s. Poverty is deep, severe and pervasive, with about 70% of the population living below poverty line. Poverty is also becoming entrenched in Nigeria-with the threat that the children of the poor are also likely to end up poor. Income distribution is so skewed that the country is one of the most unequal societies in the world, with 50% of the population having only 8% of the national income (Soludo, et al., 2007). This is contrary to one of the aim of financial development which is to achieve long – run and short – run sustainable economic growth in Nigeria. This study is devoted to investigate the financial development and economic growth nexus in Nigeria.

1.2 Statement of the Problem

The fundamental question in economic growth that has preoccupied researchers is why countries grow at different rates. The empirical growth literature has come with numerous explanations of cross-country differences in growth, including factor accumulation, resource endowments, the degree of macroeconomic stability, educational attainment, institutional development, legal system effectiveness, international trade and ethnic and religious diversity. The list of possible factors continues to expand, apparently without limit.

One critical factor that has begun to receive considerable attention more recently is the role of financial development in the growth process especially in the wake of the recent global economic and financial meltdown. The positive link between the financial depth and economic growth is in one sense fairly obvious. That is, more developed countries, without exception, have more developed financial markets. Therefore, it

would seem that policies to develop the financial sector would be to raise economic growth. Indeed, the role of financial development is considered by many to be the key to economic development and growth.

Another serious problem is that the literature is less consensual on the link between financial development and economic growth. There are studies that establish little or no significantly positive relationship between financial development and economic growth. Some studies found that financial development have negative impact on economic growth especially in the long-run and that causality run from economic growth to financial development and not in reverse direction. Other studies have also found support for a positive link between financial development and economic growth. These conflicting results have been traced to orthodox or methodological challenges associated with the estimation method such as single-equations (OLS); the Engle-Granger two step procedures; Johansen reduced rank; and the Vector Auto Regressions (VAR) model; the use of which dominated the empirical studies in this area. However, recent econometric techniques have shown the strong limitations to these techniques and revealed that most economic growth and financial development data have to be subjected to more rigorous analyses involving both the short run and long run co-movement among a number of time series data to unbiased, consistent, and efficient estimates (Enders, 1995).

Moreover, these previous studies did not capture the effects of recapitalization reform in the financial sector through the use of dummy variable thereby rendering the empirical results unreliable. While economists have generally reached a consensus on the central role of financial development in economic development theoretically; empirical works supporting this concept are conflicting. One school of thought asserts that financial development plays a limited role in accompanying the development of real activity; the second school of thought accords a crucial role to financial development in boosting the processes of growth, innovation and economic development; while for another group of scholars, the financial market promotes growth, with growth, in turn, comes market formation (Nicet-Chenaf, 2012). This study therefore, intends to bridge the existing gap in the literature by empirically investigating the nexus between the financial development and economic growth in Nigeria. In doing this, the current study will employ the recent techniques of econometrics while the effects of recapitalization reform will be captured through the use of dummy variables.

1.3 Objectives of the Study

The broad objective of the study is to examine the relationship between financial development and economic growth in Nigeria. Specifically, it seeks:

1. To empirically investigate the significant relationship between financial development and economic growth in Nigeria;
2. To examine the effect of interest rate on economic growth in Nigeria;
3. To determine the impact of stock market capitalization on economic growth in Nigeria;
4. To investigate the impact of credit to private sector on economic growth in Nigeria.

II. LITERATURE REVIEW

2.1 Conceptual Framework

The level of financial development reflects the soundness of the financial sector and the ability with which credits are created with respect to lending and deposit rates. Financial development theory thus defines the positive role of the financial system on economic growth by the size of the sector's activity. That means that an economy with more intermediary activities is assumed to be doing more to achieve efficient allocations. In development literatures, financial development is often referred to as the increased provision of financial services with a wider choice of services geared towards the development of all sectors of the economy. The size of the financial sector is usually measured by two basic quantitative indicators: "monetization ratio" and "intermediation ratio". Whereas monetization ratio includes money-based indicators or liquid liabilities like the ratio of the broad money supply to GDP, intermediation ratio consists of indicators concerning bank-based measures like the ratio of private sector credits to GDP, and capital market-based measures such as capitalization ratio of stock market (Ndebbio, 2004).

The role of financial development in economic growth has been well recognized in the development literature and has been the subject of great debate amongst economists of both old and new. The seminal paper by Patrick (1966) has initiated widespread investigations into the role of financial sector as an engine for economic growth. It points out two possible relationships between financial development and economic growth. First, as the economy grows, it generates demand for financial services, which is termed —a demand-following phenomenon. According to this view, lack of financial institutions in developing countries is an indication of lack of demand for their services. Second, the establishment and the expansion of financial institutions in an economy may promote growth, and terms this —supply leading phenomenon or financial-led growth hypothesis (Patrick, 1966). This latter view has been popular among governments in developing countries as a means to promoting economic growth and development (Habibullah & Eng, 2006).

However, the concept of economic growth has not been quite easy to grasp and measure in real terms. This is so because often on the literature of economics, some authors have variously differentiated economic growth from the term “economic development”. For such authors like Lewis (1978), the mere increase in the aggregate level of production of goods and services in an economy tells us nothing about the “quality of life” of a citizenry, given the threats of global pollution, abysmal lop-sided distribution of aggregate output and income, environmental degradation, prevalence of chronic and deadly disease, abject poverty and the absence of freedom and justice. For such authors, attention should be focused not merely on the increase in aggregate output and income but also on the total quality of standard of living and that there is yet no satisfactory measure of “quality of life” that can be applied to quantitative measure of aggregate output and income which would be acceptable to all and sundry that will stand the test of the time.

Byrns and Stone (1992) defined that, economic growth is one of the macroeconomic growth of government; since most governments work hard at growing their economies in order to stem unemployment, increase output and improve industrial capacity utilization. It is infact a key policy concern to achieve high sustainable and equitable growth and thereby improving the standard of living which is commonly proxied as level of real GDP per capita. According to Ndebbio (2004), economic growth and development of a country depends greatly on the level of financial development. He further stressed that what is important is what constitutes the financial assets that wealth-holders must have as a result of high per capita income. It is only when we can identify those financial assets can we be able to approximate financial development adequately. In short, and for our purpose, financial development simply means an increase in the supply of financial assets in the economy. Therefore, the sum of all the measures of financial assets gives us the approximate size of financial development. 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 development (Arunmah, 2015).

2.2 Theoretical Review

The literature on financial development provides some theoretical explanation on the relationship between financial development and economic growth. The general view is that financial development can improve long run growth. This section discusses selected theories that link financial development to economic growth.

- 1. Supply -Leading Hypothesis:** The supply-leading hypothesis suggests that financial deepening spurs 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. The recent work of Dernirguc-Kunt and Levine (1996) 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.
- 2. Demand -Following Hypothesis:** The demand-following view of the development of the financial markets is merely a lagged response to economic growth (growth generates demand for financial products). 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. It is argued that financial deepening is merely a by-product or an outcome of growth in the real side of the economy, a contention recently revived by Ireland (1994) and Demetriades and Hussein (1996). According to this alternative view, any evolution in financial markets is simply a passive response to a growing economy.

- 3. Stage of Development Theory:** The theoretical basis of this study is anchored on stage of development hypothesis of financial development by Hugh Patrick (1966) which states that the direction of causality between financial development and economic growth changes over the course of development. That is, at the early stage of development, the supply- leading impetus is evident but as real growth occurs in the economy, it will spark demand for financial services.

This theory suggests a demand – following relationship between financial and economic developments. High economic growth creates the demand for modern financial institutions; their services, their assets and liabilities and arrangements, by investors and savers in the real economy. The financial market in turn responds

to such demands. In this case, the evolutionary development of the financial system is a continuing consequence of the pervasive, sweeping process of economic development. The level of demand for financial services depends upon growth of real output, and commercialization and monetization of agriculture and other traditional substance sectors.

4. **Financial Liberalization Theory:** This hypothesis as postulated by Mckinnon and Shaw (1973) sees the role government intervention in the financial markets as a major constraint to savings mobilization, investment, and growth. The main critique of the financial liberalization theory emanates from the imperfect information paradigm. This school of thought disagrees with the proposition of these scholars and examines the problem of financial development in the context of information asymmetry and costly that results in credit rationing. As observed by Stiglitz and Weiss (1981), asymmetric information leads to two serious problems, first, adverse selection and second, moral hazard. The implication is that the information asymmetries of higher interest rates which actually follow financial reforms and financial liberalization policies in particular exacerbates risk taking throughout the economy and hence threatens the stability of the financial system, which can easily lead to financial crises while the feedback theory suggests a two-way causality between economic growth and financial development.
5. **Financial Repression Theory:** This hypothesis refers to the notion that a set of government regulations, laws and other non-market restrictions prevent the financial intermediaries of an economy from functioning at their full capacity. The policies that cause financial repression include interest rate ceilings, liquidity ratio requirements, high bank reserve requirements, capital controls, and restrictions on market entry into the financial sector, credit ceilings or restrictions on directions of credit allocation and government ownership or domination of banks. Economists have commonly argued that financial repression prevents the efficient allocation of capital and thereby impairs economic growth (Okpara, 2010; Darrat and Siowadi, 2010; Esso, 2010).
6. **Finance-Growth Hypothesis:** Major theoretical hypothesis on financial development and economic growth process postulate four distinguishable, but not mutually exclusive, effects of financial activity and development on overall economic performance. The first is the provision of an inexpensive and reliable means of payment. The second is the volume and allocation effect, in which financial activity increases resources that could be channeled into investment while improving the allocation of resources. The third is a risk management effect by which the financial system helps to diversify liquidity risks, thereby enabling the financing of riskier but more productive investments and innovations (Greenwood and Jovaovic, 1990; Bencivenga and Smith, 1991). The fourth is an informational effect; according to which an ex ante information about possible investment and capital is made available, ameliorating although not necessarily eliminating the effects of asymmetric information (Levine, 2004).

2.3 Empirical Literature

Most of the empirical results reported have supported the proposition that financial development do indeed stimulate growth while others refuted the proposition that financial development stimulate economic growth. For instance, Chude and Chude (2016) examine the impact of financial development on economic growth in Nigeria from 1980-2013. Vector error correction model were employed. They obtained the following results, (i) the trace statistics of the Johansen co integrating equation shows that there exist a long run equilibrium relationship between financial development and economic growth in Nigeria, (ii) ratio of broad money supply to GDP have no significant impact on economic growth in Nigeria, (iii) ratio of domestic credit to private sector to GDP have no significant impact on economic growth in Nigeria, (iv) the causal relationship between financial development and economic growth indicated that ratio of Domestic Credit to the Private sector granger cause the economy

Olanrewaju, Aremo and Aiyegbusi (2015) studied the causal linkages between banking sector reforms and output growth of manufacturing sector as well as the direction of such causality. A selected sample of financial development and manufacturing output of Nigeria with annual data between 1970 and 2008 were used and co integration and Granger-causality techniques were applied to ascertain evidence regarding this important issue. The result of Granger causality analysis according to the study showed that the MGDP and banking sector reforms indicators (BF) move differently with one not predicting the other within the study period. Moreover, the empirical results showed that Bank assets, lending interest rate with co-efficient, exchange rate and real rate of interest positively and significantly affected the manufacturing sector's output growth in Nigeria. On the other hand, the financial deepening indicator (M2/GDP) and Interest rate spread negatively and significantly impacted on the MGDP in Nigeria, showing that the effects of banking sector reform indicators could vary

widely in an economy. The study concludes that with proper banking policy formulations and guidance in the financial sector, the manufacturing output growth would be positively affected.

Oriavwote and Eshenake (2014) examined the implications of financial development on economic growth in Nigeria, using time series data for the period of 1990-2011. The study applied the co-integration analysis with its error correction mechanism; the variables included Real Gross Domestic Product, Financial deepening (ratio of money supply to GDP, liquidity ratio, interest rate and the credit to private sector). These findings show that financial sector development has not significantly improved private sector development, while the capital base and liquidity ratio has improved the level of economic growth in Nigeria.

Madichie, et al., (2014) applied OLS, ADF and PP unit root tests, Johansen cointegration, error correction model, and the Granger causality procedures to examine the relationship between financial development and economic growth in Nigeria using data from 1986 – 2012. The results revealed that financial development affects economic growth negatively in the long run whereas its impact on economic growth is positive in the short run. The results also revealed that long run relationship exist between financial development and economic growth while causality runs from economic growth to financial development in Nigeria. Similarly, Maduka and Onwuka (2013) applied Johansen and Juselius (1990) maximum likelihood procedure while the error correction model to investigate the long-run and short-run relationship between financial market structure and economic growth using time series data. The results revealed that financial market structure has a negative and significant effect on the economic growth of Nigeria.

Using the Johansen and Juselius (1990) approach to co integration and Vector Error Correction Modeling (VECM), Abdulsalam and Gani (2013) examined the long run relationship between financial development indicators and economic growth in Nigeria over the period 1970- 2010. The findings of the study revealed that in the long-run, liquid liabilities of commercial banks and trade openness exert significant positive influence on economic growth, conversely, credit to the private sector, interest rate spread and government expenditure exert significant negative influence. The findings implied that, credit to the private sector is marred by the identified problems and government borrowing and high interest rate are crowding out investment and growth.

Adekunle, Salami and Adedipe (2013) examined the impact of financial sector development and economic growth in Nigeria. They contended that an efficient financial system is essential for building a sustained economic growth and an open vibrant economic system. According to the study, Countries with well developed financial institutions tend to grow faster; especially the size of the banking system and the liquidity of the stock markets tend to have strong positive impact on economic growth. . They employed the OLS method of the regression analysis; the financial development was proxied by ratio of liquidity liabilities to GDP (M2GDP), real interest rate (INTR), ratio of credit to private sector to GDP (CPGDP) while the economic growth was measured by the real GDP (RGDP).The study finds that only the real interest rate is negatively related. All the explanatory variables were statistically insignificant.

Audu and Okumoko (2013) suggested that the theoretical modelling requirements for all the variables used in the regression satisfy the statistical requirements which determine the choice of our model. The result of the co-integration estimates in the study revealed that the selected independent variable used in this study explains long-run relationship between financial development and economic growth between the periods under consideration. The result from the estimated long– run Parsimonious Error Correction Model (ECM) shows that all the variables used in the study were statistically significant. The study also reveals that lending rate did not conform to our theoretical expectation but impacts significantly on gross domestic product. Commercial bank credit to private sector has the expected a priori expectation sign and also positively affected financial development and economic growth in our study. Contrary to our expectation, MGDP negatively influenced financial development and economic growth in Nigeria. The study also indicates that commercial bank credit to non-financial private firm did not conforms to a priori expectation but significantly influenced or stimulated financial development and economic growth in the Nigerian economy. The ratio of commercial bank deposit to gross domestic product (RDEP) appeared with the right sign and also impacts significantly on financial development and economic growth in Nigeria. The evidence from the study shows that the entire model is stable within the period of study.

Osuji and Chigbu (2012) investigated the impact of financial development variables on economic growth in Nigeria, using time series data for the period 1960-2008. The research utilized co-integration analysis, causality test and error correction mechanism for analysis of the data; using variables such as money supply and credit to private sector and GDP. The results showed that money supply and credit to private sector positively impacted on economic growth in Nigeria and were as well co-integrated with GDP for the study period. The Granger test shows a bi-directional causality existing between GDP and all regressors.

Kuipou, et al., (2012) examined the relationship that exists between financial development and the growth rate per capita real GDP in OECD countries using panel data estimation techniques for the period 1980 -

2006. The variables used are the liquidity rate and the growth rate of per capita real GDP and the static panel model using OLS technique of analysis were applied. The results show that financial development negatively impacted on growth, while the Granger tests show that there exists unidirectional causality running from economic growth to financial development in the OECD economies.

2.5 Justification of the Study

As have been seen from the literature that a large body of work has investigated the relationship between financial development and economic growth of different economies and Nigeria as well, but the results of these studies remained less consensual, thereby making the topic a great research burden. These conflicting results have been traced to methodological challenges associated with the estimation method such as single-equations (OLS); the Engle-Granger two step procedures; Johansen reduced rank; and the Vector Auto-regressions (VAR) model; the use of which dominated the empirical studies in this area. However, recent econometric techniques have shown strong limitations of these techniques and revealed that most economic growth and financial development data have to be subjected to more rigorous analyses involving both the short run and long run co-movement among a number of time series data to unbiased, consistent, and efficient estimates (Enders, 1995).

Another limitation of the previous studies is that they did not capture the effects of recapitalization reform in the financial sector through the use of dummy variable thereby rendering the empirical results unreliable. The current study employed the sophisticated but simple recent techniques of econometrics in studying the link between financial development and economic growth in Nigeria. This study also captures the effects of recapitalization reform through the use of dummy variable.

III. METHODOLOGY

3.1 Model Specification

To examine the relationship between financial development and economic growth, the study adopted though with modification, the model version of Oriavwote and Eshenake (2014). Their model is stated as follows:

$$RGDP = f(FIND, MCP, CPS, LLR, RINT, DUMMY) \text{-----}(2)$$

Econometrically, the above equation 2, becomes

$$RGDP_t = \beta_0 + \beta_1 FIND_t + \beta_2 MCP_t + \beta_3 CPS_t + \beta_4 LLR_t + \beta_5 RINT_t + \beta_6 DUMMY_t + \mu \text{-----}(3)$$

Adopting a semi-log specification, logging (RGDP) the left side of the equation, and specifying in a full econometric form, we have:

$$LNRGDP_t = \beta_0 + \beta_1 FIND_t + \beta_2 LNMCP_t + \beta_3 CPS_t + \beta_4 LLR_t + \beta_5 RINT_t + \beta_6 DUMMY_t + \mu \text{----}(4)$$

Where LNRGDP = Log of real gross domestic product; FIND = financial deepening measured as the ratio of broad money supply to GDP; LNMCP = log of stock market capitalization, CPS = credit to private sector as a ratio of GDP; LLR = liquidity ratio; RINT = real interest rate; LN = natural logarithm; t= a certain time period, β_0 = intercept; $\beta_1 - \beta_6$ = parameters to be estimated; μ = error term; and DUMMY = dummy variable to capture the effect of the recapitalization reform in the sector.

It is expected that all the independent variables – financial development, credit to private sector as a ratio to GDP, stock market capitalization and liquidity ratio are theoretically expected to impact positively on real GDP except the interest rate which is expected to have negative impact on real GDP. The study covered the period between 1986 and 2017. Most of the financial sector reforms took place within the reviewed periods. The choice of this period is also necessitated by the availability of data, which is a major challenge to economic studies in Nigeria. The data were sourced from the Central Bank of Nigeria (CBN) Statistical Bulletin and Annual Reports of various issues.

3.2 Estimation Technique and Procedure

Time series properties of the variables used in the model will be investigated before the cointegration, error correction specification, and the causality test. Diagnostic/stability test will also be carried out to ensure the reliability and adequacy of the specified model. The procedure will include the following:

3.2.1 Augmented Dickey-Fuller (ADF) and Philip-Perron (PP) Unit Root

Having specified the model, we will conduct the unit root test. This is to ascertain whether the time series properties are stationary or not. Moreover, stationarity of the variables are required so as to avoid spurious regression results. Therefore, the Augmented Dickey-Fuller (ADF) and Philip-Perron (PP) unit root tests will be utilized in this study.

3.2.2 Error Correction Model (ECM)

The estimation procedure involved using conventional error correction model (ECM) to investigate the short run dynamics and long run equilibrium relationship among the data series. The application of ECM is necessary because, it is used to correct temporary short run deviation of a series within long run equilibrium relationship. The model of ECM is specified, thus:

$$\Delta Y_t = a_0 + a_1 \Delta X_t + a_2 U_{t-1} + \epsilon_t \text{-----(5)}$$

Where;

$Y_t = Y_t - Y_{t-1}$, a_1 and a_2 are the dynamic adjustment coefficients of the data series, U_{t-1} is the residual lag that refers to as short run deviation from the equilibrium position, and it is estimated to correct long run equilibrium error, ϵ_t is the error term. This method is applied because the study employed more than one endogenous variable.

3.2.3 Toda-Yamamoto (TY) Causality Test

It is instructive to point out here that the existence of a long-run equilibrium relation entails the existence of causality in at least one direction. Of course, many tests of Granger-type causality have been derived and implemented to test the direction of causality (Granger, 1969; Sims, 1972 and Gwekes, et al., 1983). These tests are based on null hypotheses formulated as zero restrictions on the coefficients of the lags of a subset of the variables. Thus, the tests are grounded in asymptotic theory. Other shortcomings of these tests have been discussed in Toda and Phillips (1994). Also, it is well documented that the exclusion of relevant variables induces spurious significance and inefficient estimates (Gujarati & Dawn, 2009).

In dealing with these problems, we intend to employ the Toda and Yamamoto (1995) TY methodology. They propose a technique that is applicable irrespective of the integration and cointegration properties of the system. The method involves using a Modified Wald statistic for testing the significance of the parameters of a VAR(s) model (where 's' is the lag length in the system). Thus, the estimation of a VAR(s + d_{max}) guarantees the asymptotic χ^2 distribution of the Wald statistic, where d_{max} is the maximum order of integration in the model. The lag lengths of the variables in the causal models are set according to Akaike Information Criterion (AIC) and Schwarz Information Criterion (SIC). Since lagged dependent variables appear in each equation of the aforementioned causal models, their presence is expected to purge serial correlation among the error terms.

To increase the number of lags in the WALD model up to the maximum cointegration level of variables entered in the model is crucially fundamental in opting for the Toda and Yamamoto causality testing procedure. The Toda and Yamamoto approach is an alternative causality testing approach based on the Granger non-causality equation but augmented with extra lags determined by the potential order of integration of the series causally tested.

IV. PRESENTATION AND ANALYSIS OF RESULTS

4.1 Unit Root Test Results

This study tests began with unit root testing in order to determine whether the underlying time series are stationary or non- stationary. The stationarity tests follow the Augmented Dickey- Fuller (ADF) and Philip-Peron (PP) unit root test approaches. The results derived from these tests show that following the two approaches, all the chosen variables were non- stationary at their level states and were all stationary at their first difference states. In other words, all the variables chosen for this study are integrated of order one, I(1). The tests for unit root is not just an approach for determining whether a time series is stationary or not but also it serves as a diagnostic test for determining whether a group of time series with similar time trend have long-run relationship. That is, it is known that when a group of time series show similar time trend (being integrated of the same order), cointegration may exist among them. In this study, all the chosen variables are order one, I(1) variables. The ADF and PP tests results are reported in table 4.1 below.

Table 4.1: ADF and PP Unit Root Test

Variable	ADF STAT.	Order of Integration	PP stat.	Order of Integration
LNRGDP	-3.278383*	I(1)	-3.264644*	I(1)
LNMCP	-4.114258**	I(1)	-4.021031**	I(1)
CPS	-5.333415**	I(1)	-8.162541**	I(1)
FIND	-5.024181**	I(1)	-5.849845**	I(1)
LLR	-4.721381**	I(1)	-4.723757**	I(1)
RINT	-4.708247**	I(1)	-9.831278**	I(1)

Source: Author's Compilation Using E-views 9 Output

**(*) implies significant at 1%(5%) level.

4.2 Co integration Test Results

Basically, the next step after establishing the stationarity (or order of integration) of the variables is to determine whether there exist any cointegrating vector supporting the existence of long-run relationship between the dependent variables and the explanatory variables. To do this, the Johansen test is used. The co-integration test for the variables is presented in table 4.2 below.

Table 4.2: Johansen Cointegration Test

Null Hypothesis	Trace Statistic	5% Critical Value	Max-Eigen Statistic	5% Critical Value
None *	170.6453	125.6154	58.94464	46.23142
At most 1*	111.7007	95.75366	39.40549	40.07757
At most 2*	72.29520	69.81889	28.58442	33.87687
At most 3	43.71078	47.85613	19.68347	27.58434
At most 4	24.02731	29.79707	13.95658	21.13162
At most 5	10.07073	15.49471	10.06863	14.26460
At most 6	0.002098	3.841466	0.002098	3.841466

Source: Author’s Compilation Using E-views 9 Output

* denotes rejection of the null hypothesis at the 0.05 level.

The test for co-integration relationship was verified using Johansen co-integration. In determining whether there is co-integration or not among the variables included in the model, the maximum Eigen value and trace statistics are compared with their corresponding critical values. Both Eigen value and trace statistics greater than the critical value indicates three co-integrated series and the identification of the presence of at least three co-integrated equation signifies that there is a long-run equilibrium relationship among the variables.

4.3 Normalized Long-Run Coefficients Based on Johansen Test

It is a customary practice to report the normalized cointegrating coefficients in Johansen test with respect to the variable of interest when long-run relationship is confirmed. The results of the normalized coefficients are reported in table 4.3. The results show the long-run impact of the explanatory variables on the real GDP in Nigeria.

The results revealed that only liquidity ratio conform to a priori expectation and were all individually statistically significant at 5% level. while the financial deepening measured as the ratio of broad money supply to GDP; stock market capitalization, credit to private sector as a ratio of GDP and real interest rate were negatively signed, liquidity ratio have significant positive impact on the real GDP in the long-run while the financial deepening measured as the ratio of broad money supply to GDP; stock market capitalization, credit to private sector as a ratio of GDP and real interest rate has significant negative impact on the real GDP in the long-run.

An increase in financial development by one percent would lead to decrease in the real GDP by about 48.16 percent in the long-run. In other words, financial development has long-run negative impact on economic growth in Nigeria. Market capitalization also has long-run negative impact on economic growth in Nigeria such decrease in market capitalization by one percent would lead to decrease in the real GDP by about 30.06 percent. Credits to the private sectors also have long-run positive impact on economic growth in Nigeria such that increase in CPS by one percent (1%) would lead to an increase in the real GDP by about 78.28 percent in the long-run. Liquidity ratio (LLR) has long-run negative impact on economic growth in Nigeria such that an increase in LLR by one percent would lead to decrease in the real GDP by about 4.159 percent in the long-run.

The real interest rate (RINT) is expected to exert negative impact on economic growth and this assertion was confirmed by the negative sign of the RINT in the long-run. The real GDP is expected to respond negatively by about 0.10 percent for every one percent (1%) point increase in the real interest rate in the long-run. The dummy variable in the model is used to capture the effect of recapitalization on economic growth in Nigeria. The dummy variable shows that economic growth (Real GDP) responded to recapitalization by more than proportional in a negative way.

It is imperative to relate the above discussion to the objectives of this study. The first objective is to investigate the impact of financial development on economic growth in Nigeria. According to these results, financial development has long-run negative impact on economic growth in Nigeria. The second objective is to determine the casual relationship between banking sector development and stock market development on economic growth in Nigeria. The results show that individually, banking sector development proxied by credits to private sectors and stock market development proxied by market capitalization have long-run positive and negative impact respectively on economic growth in Nigeria. The implication of these results is that any long-run policy targeted on these variables is expected to yield the desired outcome on economic growth in Nigeria.

Table 4.3: Normalized Long-Run Coefficient Based on Johansen Test

Dependent Variable: LNRGDP					
FIND	LNMCPC	CPS	LLR	RINT	DUMMY
-0.481624**	-0.300566**	0.782852**	-0.041591**	-0.153523**	-3.801503**
(0.06400)	(0.07303)	(0.07580)	(0.01439)	(0.04100)	(0.50644)
[7.525375]	[4.115651]	[10.32786]	[2.890271]	[3.744463]	[7.506324]

Standard errors in () and t- statistic in [].

** implies significant at 1% level.

Source: Author’s Compilation Using E-views 9 Output

4.4 Short-run Dynamics of Error Correction Model

The error correction mechanism (ECM) was first used by Sargan (1962) and later popularised by Engle and Granger (1987) to correct for disequilibrium in a co-integrating relationship. The error correction terms within the ECM model and its effect and interpretation contain significant important information about the equilibrium of the system. They capture the short-run dynamics and serve as a way to reconcile the behaviour of an economic variable in the short run with its performance in the long run.

Table 4.4 Error Correction Model

Dependent Variable: LNRGDP				
Method: Least Squares				
Date:03/05/17 Time: 15:38				
Sample (adjusted): 1988 2016				
Included observations: 28 after adjustments				
Variable	Coefficient	Std. Error	t-statistic	Prob.
C	9.116852	0.159588	57.12750	0.0000
FIND(-1)	0.010102	0.004658	2.168809	0.0423
LNMCPC	0.106661	0.013565	7.862803	0.0000
CPS	0.001096	0.004471	0.245094	0.8089
LLR	0.005384	0.001758	3.061961	0.0062
RINT	-0.000820	0.005767	-0.142264	0.8883
DUMMY(-2)	-0.287162	0.066217	-4.336699	0.0003
ECM(-1)	-0.820209	0.185698	-4.416887	0.0003
R-Squared: 0.979610; Adjusted R-squared: 0.972474; F-statistic: 137.2709; Prob(F-statistic): 0.000000; Durbin-Watson Stat: 1.921497				

Source: Author’s Compilation Using E-views 9 Output

The results showed that financial development which is the target explanatory variable has significant positive impact on economic growth in Nigeria for the short-run. Also, the stock market development proxied by the market capitalization and the liquidity ratio, individually have significant positive relationship on economic growth in Nigeria in the short-run. While banking sector development proxied by the credit to private sector have insignificant positive relationship on economic growth in Nigeria in the short-run. To be noted the recapitalization dummy is negatively signed as opposed to a priori expectation. The real interest rate which is the cost of borrowing from the commercial banks has the expected negative sign, meaning that economic growth in general reacts negatively to a rising rate of interest. In general, it could be deduced that other variables except the recapitalization dummy have passed the a priori test for the short term. For the long-run all variables conform to a priori expectation including the recapitalization dummy.

The long run estimates of the model show that all the explanatory variables are individually statistically significant at 1% level and were in conformity with theoretical expectation. For the short-run, only financial development, market capitalization, liquidity ratio, recapitalization dummy and the dependent variable (Real GDP) as well as the error correction term (ECM(-1)) were individually statistically significant.

The value of the F-ratio with its associated p-value shows that all the variables jointly impact on the dependent variable. In other words, all the explanatory variables taken together have impact on economic growth in Nigeria. The values of the R-squared and the adjusted R-squared show that all the explanatory variables jointly explain about 97.96 percent of total variations in the real GDP assuming there is no loose in the degree of freedom. However, even when there is looses in the degree of freedom, the explanatory variables still explain about 97.2 percent of total variations in the real GDP. This implies that the data is well fitted in the model.

The error correction term ECM (-1) in the model is rightly signed and is statistically significant at 1%. This implies a strong convergence to long-run equilibrium after any shock. Thus, about 82 percent of the total discrepancies between the equilibrium and the actual values of the real GDP are corrected in each period. The Durbin Watson statistics of 1.94 falls within the inconclusive region of no serial correlation region.

4.5 Causality Test (Toda-Yamamoto Approach)

The flaws of the traditional Granger causality discussed in the previous chapter underscore the need to implement the Toda-Yamamoto (TY) causality which is based on the modification of Granger non-causality in this study. To save spaces, the TY test results are reported in the table 4.5.

Table 4.5 Var Granger Causality/Block Exogeneity Wald Tests

Dependent variable: LNRGDP			
Excluded	Chi-sp	df	Prob.
FIND	0.834128	2	0.6590
LNMCPC	0.817190	2	0.6646
CPS	0.160110	2	0.9231
LLR	1.175680	2	0.5555
INT	2.407755	2	0.3000
DUMMY	0.649979	2	0.7225
All	14.42083	12	0.2746
Dependent variable: FIND			
LNRGDP	1.290661	2	0.5245
LNFFEC	4.533021	2	0.1037
LNAC	12.91959	2	0.0016
LNGEE	3.312574	2	0.1908
LNGCF	2.333768	2	0.3113
LFPR	14.81080	2	0.0006
All	35.77302	12	0.0004
Dependent variable: LNMCPC			
LNRGDP	0.745533	2	0.6888
FIND	3.780751	2	0.1510
CPS	2.560652	2	0.2779
LLR	1.630322	2	0.4426
INT	1.191139	2	0.5512
DUMMY	1.587566	2	0.4521
All	8.163991	12	0.7722
Dependent variable: CPS			
LNRGDP	0.122634	2	0.9405
FIND	6.974394	2	0.0306
LNMCPC	3.216988	2	0.2002
LLR	0.720454	2	0.6975
INT	0.586174	2	0.7459
DUMMY	12.76896	2	0.0017
All	33.03979	12	0.0010
Dependent variable: LLR			
LNRGDP	1.712583	2	0.4247
FIND	5.590691	2	0.0611
LNMCPC	0.024490	2	0.9878
CPS	2.292919	2	0.3178
INT	2.449588	2	0.2938
DUMMY	1.485568	2	0.4758
All	21.485568	12	0.4758
Dependent variable: INT			
LNRGDP	2.814636	2	0.2448
FIND	6.136447	2	0.0465
LNMCPC	6.080373	2	0.0478
CPS	5.370307	2	0.0682
LLR	4.898542	2	0.0864
DUMMY	1.490950	2	0.4745
All	28.19074	12	0.0052
Dependent variable: DUMMY			
LNRGDP	4.174540	2	0.1240
FIND	3.060315	2	0.2185
LNMCPC	1.603879	2	0.4485
CPS	3.215963	2	0.2003
LLR	0.151218	2	0.9272
INT	1.563296	2	0.4572
All	12.60878	12	0.3981

Source: Author's Compilation Using E-views 9 Output

The TY causality results show that causality runs from financial development to economic growth in Nigeria and there is no vice versa. This implies that any policy targeted to improve the financial system is expected to influence economic growth in a positive way. This is because the short-run and long-run estimates

show that financial development has positive impact on economic growth in Nigeria. There is also evidence of unidirectional causality running from stock market capitalization, credit to private sector, real interest rate and the recapitalization dummy to financial development in Nigeria. The implication of these outcomes is that changes in stock market development through market capitalization are expected to influence the financial system at large. Banking sector development through credit to the private sector also influences the financial system. Also, the cost of borrowing (real interest rate) influences the financial development while recapitalization is another factor that influences the development of financial system in Nigeria according to these results. These results are in support of the earlier findings from the long-run and short-run estimates that financial development influences economic growth in Nigeria.

4.6 Discussion of Findings/Policy Implication of Results

The study found that financial development has significant positive impact on economic growth in Nigeria in the short-run and while negative significant impact in the long-run. The results also show that causality runs from financial development to economic growth and not in the reversed order. This implies that the supply-leading hypothesis is prevalence in Nigeria during the period covered. The policy implication of this finding is that financial development is one of the desired panaceas to achieving both long-run and short-run sustainable economic growth in Nigeria. In other words, any policy targeted on financial development is expected to positively affect the level of economic growth in Nigeria.

The study also found that the stock market capitalization have significant positive impact on economic growth in Nigeria only in the short-run while negative significant impact in the long-run. Also, causality runs from stock market development to financial development in Nigeria. While the credit to private sector has no significant impact on economic growth in Nigeria. This implies that stock market development individually or jointly could be policy variables towards improving the Nigerian financial system.

Also, the study revealed that the cost of borrowing (interest rate) has significant negative impact on economic growth only in the long-run while insignificant in the short-run. This result affirms to the a priori expectation that there exist an inverse relationship between interest rate and the level of investment while investment affects economic growth positively. Also, the causality test shows that interest rate do not directly influence economic growth as no evidence of causality was found between the two. However, it was found that causality runs from interest rate to financial development while financial development causes economic growth. The policy implication of this finding is that cost of borrowing (interest rate) could only be used to influence economic growth indirectly through financial development.

The study also revealed that liquidity ratio has significant positive impact on economic growth both in the long-run and the short-run impact, though the significant, is negative in the long run. There is no evidence of causality between liquidity ratio and economic growth according to the study. This is an indication that changes in liquidity ratio may not yield any valid results in the short-run whereas it could have desired outcomes in the long-run.

The introduction of recapitalization dummy is to capture the impact of recapitalization on financial development and as well, on economic growth at large. The results show that recapitalization has significant negative impact on economic growth in Nigeria both in the long-run and the short run. Also, causality runs from recapitalization to financial development and not in reverse order. The implication of this result from the stand point of policy is that any policy reform attempted in the form of recapitalization is expected to have positive and a direct impact on the financial system and indirect influence on the level of economic growth in Nigeria only in the long-run.

V. CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

The study investigated the impact of financial development on economic growth in Nigeria during the period 1986-2017. The main thrust of the study is to investigate the impact of financial development on economic growth in Nigeria as well as to examine the individual impact of the banking sector development and stock market development on economic growth in Nigeria. The study began with time series analysis of the data used following the Augmented Dickey-Fuller (ADF) and Phillip-Perron (PP) unit root tests, Johansen cointegration approach and error correction model. The study also used the Toda-Yamamoto causality framework to determine the causal relationship between financial development and economic growth in Nigeria. The findings of this study following a robust empirical investigation into the impact of financial development on economic growth in Nigeria are summarized as follows:

1. The unit root tests carried out show that all the chosen variables are non-stationary at their level state and were all stationary after first differencing. In other words, they are all integrated of order one. Also the cointegration analysis shows that the variables have long run relationship which implies that any deviation from equilibrium among them is temporary as equilibrium holds in the long-run for them.

2. The results show that financial development has significant positive impact on economic growth in Nigeria in the short-run and while negative significant impact in the long-run. Also, the results revealed that stock market capitalization have significant positive impact on economic growth in Nigeria in the short run while negative in long run. While the banking sector development have positive insignificant impact on economic growth in Nigeria only in the short run, while it has positive significant impact in the long run. Finally, the causality test revealed that causality runs from financial development to economic growth in Nigeria and not in reversed order. Also, the study revealed a unidirectional causality running from stock market development, banking sector development, interest rate, and recapitalization to economic growth in Nigeria.

5.2 Recommendations

Based on the findings of this study, the following recommendations are made:

1. The government should redirect its policy efforts towards the promotion of an efficient financial system while discouraging the elements of bureaucratic bottlenecks in the system. This will help to energize the financial system and launch a big push on the level of economic growth.
2. Banking sector as well as the stock market are some of the most vibrant institutions in the Nigerian financial system. Thus, the government through the central bank should pursue favourable policies that will energise the banking sector while ensuring effective and efficient functioning of the stock exchange devoid of scams and malpractices in order to allow investors the access to long-run resources that are indispensable for the financing of medium and long-term projects.
3. As the credit to private sector to GDP has no significant impact on economic growth in Nigeria within the period under study, the development of the finance sector is also very necessary so as to make credit accessible to micro entrepreneurs who are often left out in the formal credit markets. These will boost private sector development and investments which is the engine of growth and development.
4. The monetary authority (CBN) should review and moderate the cost of borrowing (interest rate) in such a way that will bring about the desired level of investment needed to accelerate the growth of the economy. Thus, the central bank of Nigeria should improve its supervisory capacity and pursue such policies that would enhance the safety, soundness, and efficiency of the financial system in Nigeria.
5. It was found that financial development granger cause the economy, therefore government must also ensure efficiency in its regulation and supervision of all financial institutions in allowing more private banks and non-bank financial institutions to broaden their financial market to accelerate financial development and improve the financial structure that leads to increase economic growth of Nigeria.

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