FINANCIAL DEVELOPMENT AND ECONOMIC GROWTH IN NIGERIA: 
AN EMPIRICAL INVESTIGATION (1980-2012)

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ABSTRACT 
The economic literature posits that a well-functioning economy needs a financial system that moves funds from people who save to people who have productive investment opportunities. In other words, a sound financial system acts as a conduit for sustainable economic growth. This work empirically investigated the link between financial development and economic growth in Nigeria. Secondary data on gross domestic product (GDP), used as a proxy for economic growth; broad money supply as a ratio of GDP (M2GDP) and domestic credit to private sector as a measure of GDP (DCPGDP) which represented the explanatory variables, and sourced mainly from CBN publications were first tested for the presence of unit root using the Augmented Dicey Fuller test while Johansen co integration test was used to test for long run relationship between the dependent and independent variables. The ADF results indicated that all the variables were stationary and at the same wave length after second difference at 5 and 1 percent level of significance and the Johansen co integration test revealed the presence of a long run relationship among the variables. Equally, the result from pairwise granger causality test showed a unilateral relationship from GDP to financial development. Ordinary least square (OLS) technique was employed to estimate the individual parameters and the result indicated that only DCPGDP has a positive relationship with GDP while M2GDP has a negative relationship, contrary to economic expectation. The study concluded that money supply as a ratio of gross domestic product equally show that broad money supply actually help to deepen the financial sector but has failed to cause economic growth in Nigeria and equally that financial deepening in Nigeria follows demand following hypothesis in line with the findings of Isu and Okpara (2013) and recommended among others that the current reforms in the Nigerian banking sector should not be emphasized unilaterally instead that attention should be given to the complimentary and coordinated development of financial reforms and changes in the real sector of the economy for the country to translate the positivity of the financial sector into the real sector to achieve economic growth.

Keywords: Financial Development, Cointergration, Economic Growth and Nigeria

Introduction 
Financial sector has been recognized in the literature to play an important role in the economic development of an economy since it leads to higher saving and efficiency and thus to higher economic growth. Financial development thus involves the establishment and expansion of institutions, instruments and markets that support investment and growth process. Historically, the role of banks and non bank financial intermediaries has been to translate household savings into enterprise investment, monitor investments and allocate funds to price and spread risk. The relevance of financial sector development (FSD) to economic growth has been the concern of several studies for many years. Some of the findings of these studies identify the importance of achieving a well-developed financial system as an enhancer of economic growth (kolawole,n.d) The theoretical argument that supports the link between financial development and growth is that a well developed financial system performs several critical functions to enhance the efficiency of intermediation by reducing information, transaction, and monitoring costs (Adelekan, 2010).

An efficient financial system is therefore recognized as one of the foundations for building a sustained economic growth and an open, vibrant economic system. In the early neoclassical growth literature, financial services played a passive role of merely channeling household savings to investors. The success of the financial system throughout the world has been predicted 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 by providing a foundation for implementing effective stabilization policies and successfully mobilizing capital and putting it to effective use, which leads to achieving higher rates of economic growth (Robinson, 1952).

Financial development and economic growth feature prominently on the agenda of most countries and Nigeria is no exception. Since gaining independence, Nigeria has remained in a perpetual struggle to achieve economic and financial development (Abubakar and Sander, 2010). This starts with the National Development Plans (NDP), SAP, The rolling plans, and more recently the National Economic Empowerment and Development Strategy (NEEDS), a medium term development programme initiated in order to consolidate the gains made from previous policies. Despite these various efforts by the Nigerian governments to improve the performance of the financial sectors, there has been an underdevelopment of the real sector and it has being envisaged that the reason for this is the lack of funds from the financial sector to this sector. It is against the background highlighted above and the dearth of empirical literature underpinning the relationship between financial development and economic growth in Nigeria that this study is aimed at determining empirically the relationship between financial development and Nigerian economic growth. This research work will seek to answer the following questions;

• Is there any long run relationship between financial development and economic growth in Nigeria?
• To what extent does financial development impact on Nigerian economic growth?
• What is the direction of causality between financial development and economic growth in Nigeria?

Thus, the objectives of this study are:

• To examine if there is long run relationship between financial development and economic growth in Nigeria
• To determine empirically the impact of financial development on economic growth in Nigeria.
• To evaluate the direction of causality between financial development and economic growth in Nigeria.

The following null hypotheses were tested:

(1). \( H_0 \): there is no long run relationship between financial development and economic growth in Nigeria.
(2).\( H_0 \): There is no significant impact of financial development on economic growth in Nigeria.
(3).\( H_0 \): There is no causal relationship between foreign direct investment and economic growth in Nigeria.

Theoretical Literature Review

The theoretical relationships between financial development and economic growth have been analyzed extensively in the literature and may be summarised under four hypotheses: supply-leading, demand-following, feedback and independent hypotheses. The Supply Leading Hypothesis was first developed by Goldsmith (1969) who suggested that financial development has a positive impact on economic growth as it may boost the capital accumulation efficiency and or increase the level of saving and thus the level of investment as suggested by McKinnon (1973) and Shaw (1973). The hypothesis postulates that the existence of financial institutions and the supply of their financial assets, liabilities and related financial services in advance of demand for them would provide efficient allocation of resources from surplus units to deficit units, thereby leading the other economic sectors in their growth process (Patrick, 1996).

The demand-following view also called “growth-led finance” hypothesis postulates a causal relationship from economic growth to financial development. The hypothesis states that the growth of the economy generates additional and new demand for financial services, “which bring about a supply response in the growth of the financial system” (Patrick 1966).
Bi-Directional Causality Hypothesis is a combination of the supply-leading and demand following hypotheses. It postulates that financial deepening and economic growth are mutually or bi-directionally related. Hence financial deepening gradually induces economic growth and this, in turn, causes feedback and further induces financial deepening.

The Independent Hypothesis suggests that the relationship between financial development and economic growth is not important. Hence financial development and economic growth are not causally related. In sum, the independent hypothesis postulates that financial deepening and economic growth are causally independent and it is upon this assumption that Lucas (1988) argued that, at best, financial deepening plays a very minor role in economic growth.

Empirical Literature

The empirical literature includes cross-country growth regressions, panel studies, time-series analyses, industry level studies, firm level studies and detailed country case-studies (Omotor, 2007). Some of these studies are reviewed below.

Adelakun (2010) empirically examined the relationship between financial development and economic growth in Nigeria. In his study, the perceived relationship between financial development and economic growth was estimated econometrically using the Ordinary Least Square Estimation method (OLSEM). The result showed that there is a substantial positive effect of financial development on economic growth in Nigeria. The Granger causality test showed that financial development promotes economic growth, but there was equally evidence of causality from economic growth to the development of financial intermediaries. Thus the study recommended the advancement of the financial sector development, including diversification of financial instruments should be pursued to facilitate economic development in Nigeria.

Osuji and Chigbu (2012) investigated the impact of financial development variables on economic growth in Nigeria. Augmented Dickey Fuller (ADF) test, Granger Causality test, Co-integration and Error Correction Method (ECM) were employed on the time series data from 1960-2008 and the results revealed that Money Supply (MS) and Credit to Private Sector (CPS) and the result shows that the financial development were positively related to economic growth of Nigeria. The Johansen and Granger tests shows that Money Supply and Credit to private Sector (CPS) were cointegrated with GDP in Nigeria within the study period while Granger tests indicated that all the exogenous variables Granger cause GDP and GDP Granger cause other variables in Nigeria. They concluded that the government should ensure a robust supervision of the financial sector to enable financial institutions provide the needed funds for the growth and development of the Nigerian Economy.

Nwosa et al (2011) examined the causal relationships among financial development, foreign direct investment and economic growth in Nigeria over the period 1970 to 2009. The tri-variate vector error correction model (VECM) test for the causal relationships showed the presence of causality among financial development, foreign investment and economic growth. The study concluded that financial development and foreign direct investment have a statistically significant causal influence on economic growth.

Saibu et al (2011) examined effects of financial development and foreign direct investment on economic growth in Nigeria. The study modified the standard endogenous model to incorporate foreign direct investment and financial development as the determinant of growth in the long run. Using time series data from 1970 to 2009, the study tested for the time series properties of the variable and adopted the Autoregressive Distributed Lag (ARDL) technique to estimate the model. The results showed that financial development and foreign direct investment had negative effects on economic growth in Nigeria.

Al-Malkawi et al (2012) empirically examined the relationship between financial development and economic growth in a small open economy of United Arab Emirates (UAE). Using time series data from 1974 to 2008, the study employed the autoregressive distributed lag (ARDL) approach to co-integration. The results showed a negative and statistically significant relationship between financial development, as measured by M2/GDP, and economic growth. The results also suggest a bi-directional causality between the two variables. Over all, the evidence supported neither the demand-following nor the supply-leading hypotheses for UAE.

Pradhan (2009) explores the direction of causality between financial development and economic growth. Boyreau-Debray’s (2003) study on Chinese financial development and growth, which finds that credit extended by the banking sector at the state level, has a negative impact on provincial economic growth.
DeGregorio and Guidotti (1995) find evidence for a negative relationship between financial development and growth in twelve Latin American countries during the period from 1950 to 1985 in India. The author employed the econometric tools of multivariate Vector Auto Regression (VAR) model and the Granger causality test to analyze monthly data sets from 1993 to 2008. The index of industrial production was used as a proxy for economic growth while market capitalisation, broad money supply, foreign trade and bank credit were used as proxies for financial development. The study concludes that economic growth leads to financial development in India. However, financial development plays a crucial role in enhancing and fostering economic growth.

Omotor (2007) uses Vector Auto-Regression model to analyze annual time series data. The variables studied were trade openness, investment, domestic credit, and human capital. Financial development was measured by the money/GDP ratio. The author finds positive relationship between economic growth and financial development, with the direction of causality running from growth to development.

Ndebbio (2004), using an ordinary least square regression framework, finds that financial sector development weakly affect per capita growth of output. He attributed the result to shallow Finance and the absence of well functioning capital markets.

The finding of Nnanna (2004) was more disturbing. He, also using ordinary least square regression technique, concluded that financial sector development did not significantly affect per capita growth of output.

The researcher adopted the Ordinary Least Square (OLS) technique not only because of its computational simplicity but also as a result of its optimal properties such as linearity, unbiasedness, minimum variance and zero mean value of the random terms. Data obtained was analyzed using E-View 7 Econometric Package.

**Model Specification**

To empirically investigate the relationship between financial development and economic growth in Nigeria, real gross domestic product (RGDP) was used as the endogenous variable while broad money supply as a ratio of GDP (M2/GDP) and domestic credit to private sector as a ratio of GDP (DC/GDP) were used as the exogenous variables.

The model is specified thus:

\[ RGDP = b_0 + b_1 \frac{M2}{GDP} + b_2 \frac{DC}{GDP} + \mu \]

Where: \( RGDP \) = real GDP, \( \frac{M2}{GDP} \) = ratio of broad money supply to GDP, \( \frac{DC}{GDP} \) = ratio of domestic credit to private sector to GDP, \( \mu \) = stochastic variable or error term, \( b_0 \) = constant term \( b_1 \) and \( b_2 \) = parameters to be estimated

**Estimation Procedure**

In order to avoid the problem of spurious regression, the time series properties of data series employed in the estimation equation is tested for stationarity and long run proportionality using Augmented-Dick-Fuller (ADF) unit root test and the Johansen co-integration tests respectively. Granger causality test was conducted to ascertain the pair wise relationship which exists between the estimated parameters while Error Correction Mechanism was employed to ascertain the speed of adjustment from the short run equilibrium to the long run equilibrium state.

**Discussion of Result**

**Table 2: Augmented Dickey Fuller Unit Root Test with intercept at second difference**

<table>
<thead>
<tr>
<th>Series</th>
<th>ADF Test Statistic</th>
<th>5% critical values</th>
<th>1% critical values</th>
<th>Order</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP</td>
<td>-6.034928</td>
<td>-2.967767</td>
<td>-3.679322</td>
<td>I(2)</td>
<td>Stationary</td>
</tr>
<tr>
<td>M2GDP</td>
<td>-9.441391</td>
<td>-2.963972</td>
<td>-3.670170</td>
<td>I(2)</td>
<td>Stationary</td>
</tr>
<tr>
<td>DCPGDP</td>
<td>-6.044581</td>
<td>-2.967767</td>
<td>-3.679322</td>
<td>I(2)</td>
<td>Stationary</td>
</tr>
</tbody>
</table>
Table 2, above represent the results of the Augmented Dicey Fuller unit root tests at second difference. As can be seen, at second difference, all the three variables; GDP, M2GDP and DCPGDP were stationary since their Augmented Dicey Fuller Test Statistics were greater than their critical values both at 5 and 1 percent level of significance Thus, the series are stationary.

**TEST OF HYPOTHESIS**

**Hypothesis one:**

H<sub>0</sub>: There is no long run relationship between financial development and economic growth in Nigeria.

In order to test for long run relationship, the co integration approach was used and the summary of the Johansen Co -integration Test is shown in the Table below. The model with lag 1 was chosen with the linear deterministic test assumption.

<table>
<thead>
<tr>
<th>Eigen Value</th>
<th>Trace Statistic</th>
<th>0.05 Critical Value</th>
<th>Prob.**</th>
<th>Hypothesized No. of CE(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.819691</td>
<td>66.64314</td>
<td>29.79707</td>
<td>0.0000</td>
<td>None *</td>
</tr>
<tr>
<td>0.243977</td>
<td>13.53759</td>
<td>15.49471</td>
<td>0.0965</td>
<td>At most 1</td>
</tr>
<tr>
<td>0.145307</td>
<td>4.867383</td>
<td>3.841466</td>
<td>0.0274</td>
<td>At most 2 *</td>
</tr>
</tbody>
</table>

Trace test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

The results of the cointegration in Table 3 showed that the trace statistics is greater than the critical value at 5 percent level of significance in at least two of the hypothesized equations. This confirms that there is at least one cointegration relationship among the various measures of output and the macroeconomic variables included in the model and therefore the null hypothesis is rejected.

**Vector Error Correction Model (VECM)**

The existence of long-run co-integrating equilibrium provides for short-term fluctuations. In order to capture the short run fluctuation, Vector Error Correction Method (VECM) is employed and the result is presented below in appendix 3. The vector error correction mechanism (VECM) result presented indicates that GDP has a negative relationship with the past level of itself, a negative relationship with the past level of M2GDP and a positive relationship with the past level of DCPGDP as indicated by their various coefficients. The VECM (-1) value is 0.190697 and it follows that the VECM could correct any deviations from long-run equilibrium relationship between GDP and the explanatory variables. The coefficient indicates a speedy adjustment of 19.07 % per annum. However, the coefficient of determination is 0.422775 which means that about 42 percent of the change in the dependent variable is accounted for by changes in the independent variables within the period under review.

**Hypothesis two**

H<sub>0</sub>: There is no significant impact of financial development on economic growth in Nigeria.

To test this hypothesis, the OLS technique is employed and the result shown as in the table in appendix one, GDP is modeled as a function of M2GDP and DCP GDP. The coefficient of the constant represented by c is 6479093. This means that if all the exogenous variables are kept constant, the value of GDP will always be 6479093. Hence this value is independent of changes in the indicators of financial development. The coefficient of M2GDP is negative with a value of -1646369 that GDP has an inverse relationship with the ratio of money supply to GDP.

This contradicts the a priori expectation of a positive relationship. DCPGDP has a positive relationship with GDP in line with theoretical expectation. However, a look at their probability values shows that all the parameter estimates are statistically significant at 5 percent level of significance. Equally, the p=value for
the F-statistics indicates that there is joint influence of the explanatory variables on the dependent variable. We therefore reject the null hypothesis and accept the alternate hypothesis. The computed coefficient of determination ($R^2 = 0.657787$) which shows that about 65.78% of the total variation in the dependent variable is accounted by the variations in the explanatory variables while the remaining 34.22 is attributed to the influence of other factors not included in the regression. It is used to test for the presence of positive first order serial correlation.

**Hypothesis three**

$H_0$: There is no causal relationship between foreign direct investment and economic growth in Nigeria.

To examine this Granger Causality test is applied and the result is presented below.

**Granger Causality Tests**

<table>
<thead>
<tr>
<th>Date: 07/06/14  Time: 15:36</th>
<th>Sample: 1980 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lags: 1</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Null Hypothesis:</th>
<th>Obs</th>
<th>F-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>M2GDP does not Granger Cause GDP</td>
<td>32</td>
<td>0.03149</td>
<td>0.8604</td>
</tr>
<tr>
<td>GDP does not Granger Cause M2GDP</td>
<td>2.31941</td>
<td>0.1386</td>
<td></td>
</tr>
<tr>
<td>DCPGDP does not Granger Cause GDP</td>
<td>32</td>
<td>0.33527</td>
<td>0.5670</td>
</tr>
<tr>
<td>GDP does not Granger Cause DCPGDP</td>
<td>8.36813</td>
<td>0.0072</td>
<td></td>
</tr>
<tr>
<td>DCPGDP does not Granger Cause M2GDP</td>
<td>32</td>
<td>0.25189</td>
<td>0.6195</td>
</tr>
<tr>
<td>M2GDP does not Granger Cause DCPGDP</td>
<td>0.02378</td>
<td>0.8785</td>
<td></td>
</tr>
</tbody>
</table>

From the probability values of the result presented above, the null hypothesis that M2GDP does not granger cause GDP and that GDP does not granger cause M2GDP were accepted. Equally, the null hypothesis that DCPGDP does not granger cause GDP is accepted while the null hypothesis that GDP does not granger cause DCPGDP is rejected.

**Summary of findings**

The result of the unit root test conducted on the variables using Augmented Dickey Fuller test (ADF) shows that at 5 and 1 percent level of significance, only GDP was stationary at level while M2GDP and DCPGDP became stationary after first difference. This is an indication that all variables used for estimation of specified equations are fit for intended purposes.

In testing for the long run relationship using the Johansen co integration approach, the result shows that the variables are co integrated with 2 co integrating equations while the Vector Error Correction Mechanism (VECM) gave a positive speed of adjustment value equal to 19.07 percent annually.

The OLS test which was used to determine the impact of the independent variables (M2GDP and DCPGDP) on the dependent variable (GDP) shows that that broad money supply as a ratio of gross domestic product (M2GDP) and domestic credit to private sector as a ratio of gross domestic product (DCPGDP) used as independent variables have a negative and a positive relationship with gross domestic product (GDP) which was used a as a proxy for economic growth respectively. The test of endogeneity conducted using pair wise granger causality approach shows a unidirectional causality running from economic growth to financial development. This entails that financial development precedes economic growth.

Based on the findings above the following recommendations emanate:

1. The current reforms in the Nigerian banking sector should not be emphasized unilaterally, attention should be given to the complimentary and coordinated development of financial reforms and changes in the real sector of the economy for the country to translate the positivity of the financial sector into the real sector to achieve economic growth.

2. Government should provide regulatory and coordinating role to ensure that the financial system becomes effective to enable bank and other financial institutions play their complementary role in economic development especially the role of granting of credit.

3. Finally, 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 and also strengthen risk management in the financial system so as to ensure faster economic growth and consequently development in the country. 

From the findings summarized above, it is evident that some of the reforms in the Nigerian financial sector aimed at deepening the sector have not been impacting so much on the economic growth of the country. This is due to the causality relationship found to exist among the two. More so, the negative relationship with gross domestic product observed for broad money supply as a ratio of gross domestic product equally show that broad money supply actually help to deepen the financial sector but has failed to cause economic growth in Nigeria. Therefore, while there is existence of long run relationship among the chosen variables, only domestic credit provided by the banking and non banking sector has being significantly contributing to the growth of the Nigerian economy. Thus, financial deepening in Nigeria follows demand following hypothesis in line with the findings of Isu and Okpara (2013) who equally associated financial development in Nigeria to demand following hypothesis and recommended that government policy while pursuing growth oriented programmes should equally be geared towards a conducive and efficient capital market to encourage the flow of market capitalization to finance long term growth related investments.

REFERENCES