
Gwaison, Panan Danladi,1 and Miapkwap, Kangrot Dorcas2

1Economics and Management Science Department, Police Academy, Wudil, Kano State
2Planning Department, National Veterinary Research Institute, Vom, Plateau State
Corresponding email: panan_gwaison@yahoo.com

Abstract

This study examined the impact of financial sector development on the performance of the Nigerian economy between 1986 and 2014. With the deregulation of the Nigeria financial sector, the real sector were not efficiently service by the financial sector to promote economic growth. The Ordinary least square (OLS) regression method of analysis was used for this study. Findings from the study revealed that there is positive relationship between financial sector development and economic growth in Nigeria. However it was discovered that the ratio of stock market capitalization to Gross Domestic Product (GDP) has not contributed immensely to the growth of the Nigerian economy.

Keywords: Augmented Dickey-Fuller test, Economic growth, Financial Sector, Gross Domestic Product.
The financial sector of any economy in the world plays a vital role in the development and growth of the economy. The development of this sector determines how it will be able to effectively and efficiently discharge its major role of mobilizing fund from the surplus unit to the deficit unit of the economy. This sector has helped in facilitating the business transactions and economic development (Aderibigbe, 2004). A well-developed financial system performs several critical functions to enhance the efficiency of intermediation by reducing information, transaction and monitoring costs. If a financial system is well developed, it will enhance investment by identifying and funding good business opportunities, mobilizing savings, enables the trading, hedging and diversification of risk and facilitates the exchange of goods and services. All these result in a more efficient allocation of resources, rapid accumulation of physical and human capital, and faster technological progress, which in turn results in economic growth. The writings of Schumpeter (1911) & McKinnon (1973) postulated that financial development has a strong connection with economic growth. A well-developed financial system engenders technological innovation and economic growth through the provision of financial services and resources to entrepreneurs who have the highest probability of implementing innovative products and processes (Schumpeter, 1911).

Financial structure is made up of rules, regulations, institutions and arrangements that facilitate the flow of funds from the surplus unit to the deficit unit. Generally, the financial system is divided into money and capital market. The money market is the short term end of the financial market while the capital market provides arrangement for long term funds. However, the importance of financial structure to economic performance is not quite clear. Some authors such as Hicks (1969) hold the view that financial structure plays crucial role in the mobilization of capital for development. On the other hand, there are scholars who hold contrary view. The issues and problems of financial structures are always in focus because of importance of the financial sector to economic performance. The financial structure is critical as such, the industry is heavily regulated, being a services industry where products traded are mostly non-physical items which are mostly susceptible to fraud. The financial structure is founded on trust and it growth depend on the volume of financial transactions undertaken with trust and confidence with minimum risk which require sound financial structure practices. Unlike most other business, the failure of the financial sector has far implications for the whole economy. The confidence and trust that the financial system of an economy enjoys could be shaken to its foundation when a single operator within the financial sector fails. Hence, failure of the financial system would erode people’s confidence on the financial structure.

The benefits accruable from a healthy and well developed financial structure include savings mobilization and efficient financial intermediation roles. Besides, through the financial intermediation functions; the surplus unit as well as the deficit unit is linked together to reduce transactions and search costs. Furthermore, they create liquidity which drives the economy by borrowing short term and lending long-term loan. In addition, financial structures reduce information costs and reduce risk involved in financial transactions through risk and portfolio management services offered to their customers (Ardic & Damar, 2006) More so, the financial institutions bring the benefits of asset diversification to the economy. Besides, they mobilize saving from atomized individual for investment thereby solving the problem of indivisibility in financial transactions and finally mobilized savings are invested in the most productive venture irrespective of the source of the saving. Following the accrued benefits of financial intermediation which extend to the large economy, there is need for financial development, particularly where the system is considered underdeveloped in order
to increase the size of domestic savings channeled through the formal financial sectors, ensure efficiency of intermediation process and promote the effectiveness of monetary policy (Adelakan, 2010).

Inadequate access to the formal financial sector in Nigeria has been as a result of the lack of collateral required due to risks involved in lending but also due to high costs involved in small financial services and weak legal enforcement (Ray, 1988). In Nigeria, financial markets have not developed to expectations and the underdeveloped financial markets have further deteriorated the level of economic growth in Nigeria. Although the Nigerian financial system recorded some progress in the last few years, like the national economy, it has been faced with many challenges. The problem of macroeconomic instability has continued to be a hindrance to the development of the financial sector in Nigeria. Frequent policy reversals have caused disinvestment in the financial and real sectors which have negatively affected macroeconomic performance. The lack of adequate coordination and harmonization of fiscal and monetary policies have even deteriorated the performance of the Nigerian financial sector.

The high cost of assessing funds has also discouraged investors from patronizing the banking system. The development of the financial sector in Nigeria has also been hindered by poor state of infrastructure utilized in the financial sector. These include power supply, problem of telecommunication, which include difficulty in internet access etc. This has increased the cost of operation. The lack of efficient payment system has also hindered the development of the financial sector in Nigeria. The excessive use of cash has not enhanced the development of the financial sector in Nigeria. In addition, the competitiveness that resulted from the entry of new banks into the financial system and the liberalization of interest rates brought about a sharp rise in nominal deposit and lending rates. Maximum lending rate which averaged 12.0 percent in 1986 rose to 26.5 percent in 2003 (Nnanna, Englama & Odoko, 2004). Although interest rates responded positively to financial liberalization, real rates behaved differently. For most of the reform years 1986 and 2005, real deposit rate was negative and averaged -13.5 percent compared to -7.7 percent during financial repression (CBN, 2012). High inflation rates during the reform coupled with re-imposition of interest rate ceiling brought about negative real deposits rates which hindered macroeconomic performance. Therefore, it is against this background that this investigated the impact of financial sector development on the economic performance in Nigeria. This study is sub-divided into four sections; Section one is introduction, section two conceptual review and theoretical framework, section three methodology, section four results presentations and section five summary, conclusion and recommendations.

The greater percentage of the Nigeria citizen still leaves a barbaric world of informal savings. These may be due to lack of orientation, illiteracy, or mix-conceptualised and asymmetry information about how some bank customer’s losses their savings during bank distress and failure. This place a limitation on intermediation services as the quantum of fund in the informal sector is on the increase. However, one of the major challenges faced by the developing countries is the excess intervention and interference of the government in the financial system which is mitigating against the expected growth trend of the financial sector. Irrespective of the saving and investment, the developing countries are experiencing poor performance due to financial repression, high level of regulation and financial control. While, there has been an argument that elimination of financial repression through financial liberalisation, deregulation and privatisation is essential so as to extirpate the ill-effect of financial repression and on the other hand stimulate saving and investment which is capable of promoting economic growth and encouraging foreign investors.
According to history, Nigeria banking system is faced with some challenges majorly lack of confidence on the side of the customers due to the bank failure recorded in the past decade mostly in the early 90’s. moreover, the recent capital market instability and bank failure in the Nigeria financial institution has really deteriorate the confidence of the customers and hence depositors prefer to save their money in the corner of their bed than to save in the bank or invest in capital market which is really affecting the intermediation processes as large quantum of money are still in the informal sector.

Despite the enormous rate of merger that took place in the Nigerian banking institutions recently due to increment capital base policy implemented by the CBN to solidified the Nigeria banks, can we practically say that the operation of the financial institution has really stimulate the economy or not? Sequel to the above observation, this research work tends to find out the causal flow between the activities of the financial sector development and growth of the Nigeria economic laying emphasis on the activities of the banking, non-banking financial institution and financial market as proxy for financial development indicator in Nigeria. The aim of the study therefore, is to assess the impact of financial sector development on the performance of Nigeria economy. Specifically, the objectives of the study are to: (i) examine the relationship that exists between ratio of broad money supply to GDP and economic growth in Nigeria; (ii) examine the extent to which private sector credit ratio to GDP has impacted on economic growth in Nigeria; (iii) analyze the extent to which stock market capitalization has significantly influenced economic growth in Nigeria.

The Hypotheses for this research are stated in a null form and will be tested at 0.05 significance level as shown below:

\[ H_{01} \]: There is no significant relationship between ratio of broad money supply to GDP and economic growth in Nigeria

\[ H_{02} \]: Private sector credit ratio to GDP has not impacted on economic growth of Nigeria

\[ H_{03} \]: Stock market capitalization ratio to GDP has not significantly influenced economic growth in Nigeria.

**Conceptual Framework**

The level of financial development (or financial deepening) 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 activity is assumed to be doing more to generate efficient allocations. In development studies, financial deepening very often refers to the increased provision of financial services with a wider choice of services geared to the development of all sector of society. 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 broad money supply to GDP ratio, intermediation ratio consists of indicators concerning bank-based measures like bank credit to the private sector and capital market-based measures such as capitalization ratio of stock market (Ndebbio, 2004). The financial system comprises various institutions, instruments and regulators. It refers to the set of rules and regulations as well as the aggregation of financial arrangements, institutions, agents that interact with each other and the rest of the world to foster economic growth and development (CBN, 1993).
According to Ndebbio (2004), economic growth and development of a country depends greatly on the role of financial deepening. He argued 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 deepening adequately. Therefore, 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 (Ndebbio, 2004). To simply pick the ratio of broad money (M2) to gross domestic product (Y), as done in this study, is because of lack of reliable data on other measures of financial assets likely to adequately approximate financial deepening in most Sub Saharan African countries (SSA) including Nigeria.

It is important to note that if the increase in the supply of financial assets is small, it means that financial deepening in the economy is most likely to be shallow; but if the ratio is large, it means that financial deepening is likely to be high. Many other authors have also defined financial deepening. World Bank (1989) defines it as an increase in the stock of asset. Contributing, Shaw (1973) sees it as a process involving specialization in financial functions and institutions through which organized domestic institution and markets relate to foreign markets, profitable operation of other institutions as well via bill dealers to industrial banks and insurance companies. Opinionating, Nnanna & Dogo (1998) said that financial deepening often refers to a state of an atomized financial system, meaning a financial system that is largely free from financial repression. Financial deepening thus is the outcome of accepting appropriate real finance policy such as relating real rate of return to real stock of finance.

Financial deepening generally entails an increased ratio of money supply to Gross Domestic product (Nzotta, 2004). Financial deepening is thus measured by relating monetary and financial aggregates such as M1, M2 and M3 to the Gross Domestic Product (GDP). Thus, 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 non-institutional money market funds to GDP in a certain year. M1, M2, M3 are all measures or money supply, that is the amount of money in circulation at a given time. The logic here is that the more liquid money is available to an economy, the more opportunities exist for continue growth of the economy.

**Theoretical Underpinning**

The idea that financial development promotes growth was first put forth by Schumpeter as early as 1911 (Schumpeter, 1912). Several other economists have investigated this relationship and hold the view that financial development is a necessary condition for achieving high rate of economic growth. This study will be anchored on the supply leading hypothesis. This hypothesis was first put forth by Schumpeter (1911) and later supported by the works of McKinnon (1973), Shaw (1973), Gupta (1984), Greenwood & Jovanovich (1990), Bencivenga & Smith (1991) among others. The conventional view of the supply-leading hypothesis postulates that financial development causes economic growth. In a world with frictionless transaction, information and monitoring costs, no financial intermediaries are needed. The theory posits that a well-developed financial sector provides critical services to reduce transaction, information and monitoring costs and increase the efficiency of intermediation. It mobilizes savings, identifies and funds good business projects, monitors the performance of managers, facilitates trading and the diversification of risks, and fosters exchange of goods and services. This theory is relevant to this study since the study focused...
on financial sector development and performance of the Nigerian economy which are also postulated in this theory.

Research Design
This study which is both empirical and explanatory will employ *ex-post facto* research design. *Ex post facto* research design is a non-experimental research technique in which pre-existing groups are compared on some dependent variable. This type of research design can be helpful where survey is descriptive or explanatory. *Ex-post facto* research involves past events where data already exist. This research technique will be used due to its suitability in research survey of this nature. It is imperative to mention here that in this method of research design, independent variables cannot be manipulated (Simon & Goes, 2013).

Model Specification
Adeoye (2006) and Nnanna (2004) developed a model showing the relationship between financial sector development and economic performance in Nigeria. The chosen economic performance indicator is the real Gross Domestic Product (RGDP) which depend on the financial sector indicators which are the ratio of M2 to GDP (M2GDP), the ratio of Credit to Private to GDP (CPGDP) and ratio of stock market capitalization to GDP (MCGDP). Calderon & Liu (2003) noted that a higher M2GDP ratio implies a larger financial sector and greater financial intermediary development while a CPGDP indicates more financial services and also a greater financial intermediary development. MCGDP rate is included to capture the effects of liberalized capital markets on economic growth. The model specified below, are formulated to tests the three hypotheses and they are as follow:

\[
\begin{align*}
RGDP & = f(M2GDP) \quad \quad -1 \\
RGDP & = f(CPGDP) \quad \quad -2 \\
RGDP & = f(MCGDP) \quad \quad -3
\end{align*}
\]

Linearizing equation1, 2 and 3, we obtain:

\[
\begin{align*}
RGDP & = \beta_0 + \beta_1 M2GDP + \mu_i \quad -4 \\
RGDP & = \beta_0 + \beta_2 CPGDP + \mu_i \quad -5 \\
RGDP & = \beta_0 + \beta_3 MCGDP + \mu_i \quad -6
\end{align*}
\]

The combined equation gives:

\[
\begin{align*}
RGDP & = \beta_0 + \beta_1 M2GDP + \beta_2 CPGDP + \beta_3 MCGDP + \mu_i \quad -7
\end{align*}
\]

Where:

- \( \beta_0 \) = The intercept or autonomous parameter estimate
- \( \beta_1 \) to \( \beta_3 \) are the slope of the coefficients of the independent variables to be determined
- RGDP = Real Gross Domestic Product.
- M2GDP = ratio of liquidity liabilities to GDP
- CPGDP = ratio of credit to private sector to GDP
- MCGDP = Market capitalization ratio to GDP
- \( \mu_i \) = Error term (or stochastic term).

3.3 A Priori Expectation
We then differentiate partially with respect to of each variable to obtain a priori sign expectation of equation (4, 5 and 6):

\[
\begin{align*}
\frac{\partial RGDP}{\partial M2GDP} & = \beta_1 > 0 \quad -8 \\
\frac{\partial RGDP}{\partial CPGDP} & = \beta_2 > 0 \quad -9
\end{align*}
\]
\[
\frac{\partial RGDP}{\partial MCGDP} = \beta_3 > 0
\]

Hence \(\frac{\partial RGDP}{\partial M2GDP}, \frac{\partial RGDP}{\partial CPGDP}, \frac{\partial RGDP}{\partial MCGDP} > 0\)

**Results and Discussion**

**Introduction**

This section focused on data analysis and discussion of findings, it includes pre-estimation diagnostics test such as; descriptive statistics, unit root test and co-integration test. The model estimation and interpretation and post-estimation diagnostics test such as Breusch-Godfrey Serial Correlation LM test, Durbin Watson statistic (DW) and Heteroskedasticity test. The section concluded with statistical test of hypothesis and discussion of research findings.

**Pre-Estimation Diagnostics Tests**

*Normality Statistics (Descriptive Statistics)*

The normality statistics for the variables: RGDP, M2GDP, CPGDP and MCGDP are as shown in Table 1. The mean for RGDP, M2GDP, CPGDP and MCGDP are all different. This indicates that the variables exhibit significant variation in terms of magnitude, suggesting that estimation of the variables in levels will introduce some bias in the results. The Jarque-Bera statistics for all the variables are significant except the RGDP; hence we reject the null hypothesis and conclude that the series are normally distributed (or have a normal distribution) for M2GDP, CPGDP and MCGDP.

**Table 1**

*Basic Descriptive Statistics Relating to the RGDP, M2GDP, CPGDP and MCGDP*

<table>
<thead>
<tr>
<th></th>
<th>M2_GDP</th>
<th>MC_GDP</th>
<th>CP_GDP</th>
<th>LOG(RGDP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>17.34696</td>
<td>11.79036</td>
<td>13.06905</td>
<td>8.519683</td>
</tr>
<tr>
<td>Median</td>
<td>17.68634</td>
<td>7.579544</td>
<td>11.09412</td>
<td>8.811887</td>
</tr>
<tr>
<td>Maximum</td>
<td>37.95685</td>
<td>49.28178</td>
<td>36.89332</td>
<td>11.39688</td>
</tr>
<tr>
<td>Minimum</td>
<td>8.577088</td>
<td>3.682643</td>
<td>5.917133</td>
<td>4.902332</td>
</tr>
<tr>
<td>Std. Dev</td>
<td>6.387935</td>
<td>9.510279</td>
<td>6.991336</td>
<td>1.922654</td>
</tr>
<tr>
<td>Skewness</td>
<td>1.496205</td>
<td>2.376218</td>
<td>1.756342</td>
<td>-0.258648</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>5.767314</td>
<td>9.502381</td>
<td>6.187306</td>
<td>2.026275</td>
</tr>
<tr>
<td>Jarque-Bera</td>
<td>20.07349</td>
<td>78.38049</td>
<td>27.18492</td>
<td>1.469013</td>
</tr>
<tr>
<td>Probability</td>
<td>0.000044</td>
<td>0.000000</td>
<td>0.000001</td>
<td>0.475742</td>
</tr>
<tr>
<td>Sum</td>
<td>503.0619</td>
<td>341.9204</td>
<td>379.0023</td>
<td>247.0708</td>
</tr>
<tr>
<td>Sum Sq. Dev</td>
<td>1142.560</td>
<td>2532.471</td>
<td>1368.606</td>
<td>103.5048</td>
</tr>
<tr>
<td>Observations</td>
<td>29</td>
<td>29</td>
<td>29</td>
<td>29</td>
</tr>
</tbody>
</table>

*Source:* Computed by the Author using E-views 7.0

*Unit Root Test*

Macroeconomic time series data are generally characterized by stochastic trend which can be removed by differencing. Unit root test therefore is a test of stationarity or non-stationarity of series data used in the model. This is to find out if the relationship between economic variables is spurious or nonsensical. This test is conducted by adding the lagged values of the dependent variable so that the error term is serially uncorrelated. As is the case with similar studies, the Augmented Dickey-Fuller (ADF) test was used to ascertain whether the four variables of the study exhibit unit root property. This is to find out if the relationship between economic variables is spurious or nonsensical.

**Table 2**
Summary of Unit Root Test Results

<table>
<thead>
<tr>
<th>Variables</th>
<th>ADF Test Statistic (at first difference)</th>
<th>Order of Integration</th>
</tr>
</thead>
<tbody>
<tr>
<td>RGDP</td>
<td>-3.374532(-3.2614552)***</td>
<td>I(1)</td>
</tr>
<tr>
<td>M2GDP</td>
<td>-4.817993(-4.339330)*</td>
<td>I(1)</td>
</tr>
<tr>
<td>CPGDP</td>
<td>-5.121044(-4.356068)*</td>
<td>I(1)</td>
</tr>
<tr>
<td>MCGDP</td>
<td>-5.479528(-4.339330)*</td>
<td>I(1)</td>
</tr>
</tbody>
</table>

Source: Authors Computation, 2016 (Eview-7)

From table 2, it was discovered that the variables used in the analysis were found stationary at first difference. M2GDP, CPGDP and MCGDP were found stationary at 1% first difference. However, RGDP was found stationary at 10%. These first difference variables (stationary variables) were used for further analysis in computing and analyzing of our results. The next specification test that was computed is the Phillips and Ouliaris co-integration test of these variables.

Co-integration Estimate
Economically, variables are co-integrated if they have a long term, or equilibrium relationship between them. It is a pretest to avoid spurious regression situations. It is possible for a combination of some series to achieve long run equilibrium; although they may be individually non-stationary. This phenomenon is referred to as the test for co-integration. The evidence of co-integration implies that there is a long run relationship among the variables. Asteriou and Hall (2006) argued that where there are more than two variables in a model, there is a possibility that the emerging co-integrating vectors governing the joint evolution of all the series will be more than one. However, since the model is a single equation model, we adopted a single equation co-integration test. Thus Phillips & Ouliaris (1990) Co-integration approach was adopted in this study.

Table 3
Results of Phillips and Ouliaris Cointegration Test
Date: 08/18/16   Time: 13:32
Series: RGDP M2GDP CPGDPM2GDP
Sample: 1986 2014
Included observations: 29
Null hypothesis: Series are not cointegrated
Cointegrating equation deterministics: C
Long-run variance estimate (Bartlett kernel, Newey-West fixed bandwidth)
No d.f. adjustment for variances

<table>
<thead>
<tr>
<th>Dependent</th>
<th>tau-statistic</th>
<th>Prob.*</th>
<th>z-statistic</th>
<th>Prob.*</th>
</tr>
</thead>
<tbody>
<tr>
<td>RGDP</td>
<td>-3.328959</td>
<td>0.3159</td>
<td>-15.59551</td>
<td>0.3363</td>
</tr>
<tr>
<td>M2GDP</td>
<td>-6.322459</td>
<td>0.0013</td>
<td>-18.72436</td>
<td>0.1777</td>
</tr>
<tr>
<td>CPGDP</td>
<td>-1.921088</td>
<td>0.8911</td>
<td>-8.426423</td>
<td>0.8229</td>
</tr>
<tr>
<td>MCGDP</td>
<td>-4.208845</td>
<td>0.0855</td>
<td>-21.80166</td>
<td>0.0819</td>
</tr>
</tbody>
</table>


Intermediate Results:

<table>
<thead>
<tr>
<th></th>
<th>RGDP</th>
<th>M2GDP</th>
<th>CPGDP</th>
<th>MCGDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rho – 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bias corrected Rho - 1 (Rho* - 1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rho* S.E.</td>
<td>0.167314</td>
<td>0.105770</td>
<td>0.156653</td>
<td>0.184999</td>
</tr>
<tr>
<td>Residual variance</td>
<td>3.514742</td>
<td>3.774127</td>
<td>1518708.6744186</td>
<td></td>
</tr>
</tbody>
</table>
Long-run residual variance 4.105291 5.634013 2555998. 6.807553  
Long-run residual autocovariance 0.295274 0.929943 518645.0 0.031683  
Bandwidth NA NA NA NA  
Number of observations 28 28 28 28  
Number of stochastic trends** 4 4 4 4  

**Number of stochastic trends in asymptotic distribution

Source: Authors Computation, 2016 (Eview-7.0)

Table 3 shows the results of the co-integration test, using the Phillips and Ouliaris methodology. The results show that z-statistics test (for all the variables) rejected the null hypothesis of no co-integration among the variables at the 5 percent level of significance. The cointegration test result thus shows that there is long run equilibrium relationship among the variables used in the model.

Model Estimation and Interpretation
In order to obtain the numerical estimates of the coefficients of the model, the estimation of the model requires the use of various econometric methods, their assumptions and the economic implications of the estimates of the parameters.
In the earlier stated simple linear regression model, we have

\[ RGDP = \beta_0 + \beta_1 M2GDP + \beta_2 CP GDP + \beta_3 MCGDP + \mu \]

Table 4
Regression Model Result

Dependent Variable: LOG(RGDP)
Method: Least Squares
Date: 08/18/16 Time: 14:58
Sample (adjusted): 1987 2014
Included observations: 28 after adjustments

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>7.708300</td>
<td>0.551131</td>
<td>13.98633</td>
<td>0.0000</td>
</tr>
<tr>
<td>M2_GDP</td>
<td>-0.182211</td>
<td>0.076754</td>
<td>-2.373970</td>
<td>0.0263</td>
</tr>
<tr>
<td>CP_GDP</td>
<td>0.284026</td>
<td>0.062557</td>
<td>4.502999</td>
<td>0.0001</td>
</tr>
<tr>
<td>MC_GDP</td>
<td>0.034502</td>
<td>0.023824</td>
<td>1.449209</td>
<td>0.1611</td>
</tr>
<tr>
<td>ECT(-1)</td>
<td>0.841345</td>
<td>0.122972</td>
<td>6.841766</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

R-squared 0.837926 Mean dependent var 8.648874
Adjusted R-squared 0.809739 S.D. dependent var 1.825257
S.E. of regression 0.796157 Akaike info criterion 2.542392
Sum squared resid 14.57892 Schwarz criterion 2.780286
Log likelihood -30.59349 Hannan-Quinn criter. 2.615119
F-statistic 29.72760 Durbin-Watson stat 2.432836
Prob(F-statistic) 0.000000

\[ RGDP = 7.70 - 0.18M2GDP + 0.28CP GDP + 0.034MCGDP \]

SEE = (0.55 (0.07) (0.06) (0.02)

| t*  | 13.98 -2.37 4.54 1.44 |

F * = 29.72

Prob(F-statistic) =0.00079; \( R^2 = 0.8379; R^2 = 0.8097; D.W = 2.43 \)
Model Evaluation

The F-statistic
The F-statistic examines the overall significance of a regression model including all the K variables. Therefore, by examining the overall fit and significance of the model, it could be observed that the model has better fit. That is, the probability F-statistic value of 0.00079 is less than 0.05.

Serial correlation
Serial LM test: More so, the regression model is free of serial correlation going by the result of the serial LM test.

Table 4a:

Breusch-Godfrey Serial Correlation LM Test:

| F-statistic  | 2.198013 | Prob. F(2,21) | 0.1359 |
| Obs*R-squared | 4.846771 | Prob. Chi-Square(2) | 0.0886 |

From table 4a the Prob. Chi-square gave 0.1358, and it’s greater than 0.05; thus we accept the null hypothesis that there is no serial correlation among the variables used in the model. Durbin Watson (DW) statistic was also used to test for the presence of serial correlation or autocorrelation among the error terms.

The null hypothesis is:

\[ H_0 : \rho = 0 \] That is, they \( \mu \)'s are not auto correlated with first order scheme. This hypothesis is tested against the alternative hypothesis;

\[ H_1 : \rho \neq 0 \] That is, they \( \mu \)'s are auto correlated with a first-order scheme.

Therefore, if there is no autocorrelation, \( \rho = 0 \) and \( DW \approx 2 \).

The model indicates that the alternative hypothesis \( (H_1) \) is accepted, which implies that there is autocorrelation among the variables as captured by Durbin Watson (DW) statistic of 2.43. It shows an unbiased estimate and the model could be used for policy decisions.

ii. Heteroscedasticity Test
The regression model is homoscedastic as shown in table 4.4.2 below:

Table 4b:
Heteroskedasticity Test: Breusch-Pagan-Godfrey

| F-statistic | 2.223742 | Prob. F(4,23) | 0.0980 |
| Obs*R-squared | 7.808728 | Prob. Chi-Square(4) | 0.0988 |
| Scaled explained SS | 7.794603 | Prob. Chi-Square(4) | 0.0994 |

From table 4b, the Prob. F-value gave 0.0980, and it’s greater than 0.05; thus we accept the null hypothesis that there is no heteroscedasticity among the variables used in the model.

The \( R^2 \) (R-square)
The coefficient of determination (R-square), used to measure the goodness of fit of the estimated model, indicates that the model is reasonably fit in prediction, that is, 83.79 percent change in RGDP was due to M2GDP, CPGDP, and MCGD collectively, while 16.21 percent unaccounted variations was captured by the white noise error term. It showed that M2GDP, CPGDP, and MCGD had strong significant impact on Nigeria economic performance.

Statistical Test of Hypothesis
The three hypotheses formulated in this study were tested using student t-statistics. The level of significance for the study is 5%, for a two tailed test. The decision rule is that we accept the null hypothesis if the critical/t-value (±1.96) is greater than the calculated value, otherwise reject the null hypothesis. That is, using the student t-test (t-statistic), we say that a variable is statistically significant if \( t^* \) (t-calculated) is greater than the tabulated value of ±1.96 under 95% (or 5%) confidence levels and it is statistically insignificant if the \( t^* \) is less than the tabulated value of ±1.96 under 95% (or 5%) confidence levels. Thus;

\[ H_0: \beta_0 = 0 \] (Null hypothesis)

\[ H_1: \beta_1 \neq 0 \] (Alternative hypothesis)

**Hypothesis one**

\( H_{01}: \text{There is no significant relationship between ratio of broad money supply to GDP and economic growth in Nigeria} \)

From the regression result in table 4, the calculated t-value for M2GDP is -2.37 and also by rule of thumb, the tabulated value is ±1.96 under 95% confidence interval levels. Since the t-calculated is greater than the t-tabulated (-2.37>-1.96) in absolute terms also falls in the rejection region and hence, we may reject the first null hypothesis (\( H_{01} \)). The conclusion is that there is significant relationship between ratio of broad money supply to GDP and economic growth in Nigeria.

**Hypothesis two**

\( H_{02}: \text{Private sector credit ratio to GDP has not impacted on economic growth of Nigeria} \)

The regression result in table 4, showed that the calculated t-value for CPGDP is 4.54 and it’s greater than the tabulated value of 1.96; and thus falls in the rejection region also. Hence, we reject the null hypothesis. The conclusion is that Private sector credit ratio to GDP has impacted significantly on economic growth of Nigeria.

**Hypothesis three**

\( H_{03}: \text{Stock market capitalization ratio to GDP has not significantly influenced economic growth in Nigeria} \)

Finally, the regression result in table 4, further showed that the calculated t-value for MCGDP is 1.44, while the tabulated value is 1.96. Since the MCGDP t-calculated is less than the critical t-value (that is, 1.44 < 1.96), it thus falls in the acceptance region and hence, we accept the third null hypothesis (\( H_{03} \)). The conclusion is that Stock market capitalization ratio to GDP has not significantly influenced economic growth in Nigeria.

**Discussion of Research Findings**

The M2/GDP was found to have a significant relationship with Nigeria’s economic performance. It showed that M2/GDP has contributed immensely to the growth of the
Nigerian economy. This is in agreement with Adelakun, (2010) whose result showed that financial sector development has substantial positive effect on economic growth in Nigeria. The results also agrees with Odeniran (2010) who researched on the relationship between the financial sector development and economic growth in Nigeria, using time series data for the period of 1960-2009. Using the Granger causality tests using ratio of broad money stock to GDP, growth in net domestic credit to GDP, used to proxy financial development, the results showed a bi-directional causality between financial development and economic growth. Ndebbio (2004) regression results showed that financial deepening does positively affect per capita growth of output in selected SSA countries, even though his parameter estimate of the variable of financial deepening was insignificant in one of his equations and he attributed this to shallow finance and the absence of well-functioning capital market in most SSA countries. CP/GDP was found to have positive and significant relationship with economic growth in Nigeria. The ratio of credit to the private sector to GDP would be more productive if channeled to productive investment, as this was significant and rightly signed. This is in line with Nzotta and Okereke, (2009) who studied financial deepening and economic development in Nigeria. Using data covering the period between 1986 and 2007, the study found that financial deepening through credit to GDP ratio support economic growth in Nigeria. However, Oriavwote & Eshenake (2012) 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. Osuji & Chigbu (2009) investigated the impact of financial development variables on economic growth in Nigeria. 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 the explanatory variables.

Finally, MC/GDP was found to have contributed insignificantly to the growth of the Nigerian economy. The findings collaborates with Tokunbo (2001) who examined the impact of stock market on economic growth of Nigeria, using time series data from 1980 – 2000. The results show that there is a negative relationship between growth and all the stock market development variables used. More so, Oke & Makuolu (2004) findings indicate the existing insignificant relationship between both long run and short run stock market development and economic growth in Nigeria. Furthermore, Olofin & Afangideh (2008) results showed that stock market-based and bank-based financial development have a similar insignificant impact on the real domestic sector of the economy.

**Conclusion and Recommendations**

This study empirically examined the effect of financial development on economic growth in Nigeria over the period 1986 to 2014 using the Ordinary least Square Method (OLS). It adds to the debate and existing literature about financial sector development and its relationship with economic growth. Recent advances in econometric techniques were applied in the analysis. The stationarity properties of the data were investigated using the Augmented Dickey-Fuller (ADF) test, we also applied Philips and Quiliaris co-integration test to all the models formulated for the hypotheses. The co-integration results suggest that financial sector development and economic growth is positively co-integrated indicating a stable long-run relationship. The regression result shows a positive relationship between the total market capitalization and banking credits to private sector with the real gross domestic product. However, liquidity liability (Money supply) to real gross domestic product shows a negative relationship. The conclusion that emerges from this study is that market capitalizations,
banking credits to private sector as well as liquidity liability (Money supply) will impacts significantly on the real gross domestic product. Therefore, the development of financial sector in form of increase credits by banks to the private sectors, increase in liquidity liability (Money supply) flow into the economy and efficient and robust capital market influences real gross domestic product in form of economic growth.

The direct relationship between financial development and economic growth shows that an increased activity in the financial sector leads to higher economic growth, other things being equal. Nigeria has not reached an advanced stage of financial development since the financial system has not realized its full potential. The financial system remains inadequate with respect to: the kind and number of financial institutions, the extent of the development of the economy, and the integration of financial and capital markets. Development of financial and capital markets is crucial for economic development since financial and capital markets can mobilize savings and channel them to productive use.

Based on the findings from the study, the following recommendations are made:
To sustain the existing relationship between economic growth and financial sector development, there is need to adequately deepen the financial system through innovations, adequate and effective regulation and supervision, efficient mobilization of funds and making such funds available for productive investment, and improved services. The fact that the growth in the net domestic credit positively influences output has major implications. To fully realize the growth potentials of the Nigerian economy, it is necessary to remove all obstacles that could undermine the growth of credit to the domestic economy. Among other measures, the establishment of the proposed Asset Management Corporation should be hastened to free the DMBs from non-performing loans, and thereby, enhance their ability to extend credit to the economy. Restructuring Nigerian capital market from mal-adaptation into a more realistic local financial environment and adoption of policies will propel the real sector to support the financial system. There is the need to promote due process and reduction of corruption and sharp practices of the stock exchange market for workable institutional framework.

Limitation of the Study
The limitations of this study include:

The time I have at my disposal is limited. As a result I will not be able to carry out an extensive research. There are several variables of economic development I could have chosen for my research. However due to my time limit I was not able to carry out such an extensive research which could have given me a different answer. The model used (OLS) and the methods of data analysis and the sources of information available mostly from the internet. The literature and data gathered for this research gotten from the online journals, books, and previously done researches, the website of National Bureau of Statistics and CBN bulletins.

Implication for Future Research
Based on the findings and limitations of the study mentioned above, there is urgent need to conduct more researches on the topic. Researcher can conduct further studies on;

1. Financial sector development and the performance of the economy in different countries
2. Financial sector development and the performance of the economy in Nigeria using VAR model.

References


**About the Authors**

**Gwaison, Panan Danladi** studied economics/education at master degree levels with university of Jos Nigeria. He is currently a Ph. D. student of same university, and a lecturer II with Economics and Management Science Department, Nigerian Police Academy Wudil-Kano. The Monetary economics and economics education are his area of interest in research.

**Miapkwap, Kangrot Dorcas** studied economics at master degree levels with university of Jos Nigeria. She is currently a Ph. D. student of same university, and a planning officer with the Planning Department of the National Veterinary Research Institute, Vom, Plateau State. Development economics are her area of interest in research.

**Cite Paper As:**


© 2018 the Author(s). Creative Commons CC-BY: This open access article is distributed under the terms of Creative Commons Attribution 4.0 License. This permits anyone to share, use, reproduce and redistribute the work without further permission provided the person gives due credit to the work.