Project Title: EFFECT OF FINANCIAL DEEPENING ON THE NIGERIAN ECONOMIC GROWTH AND DEVELOPMENT (1990-2016)

Abstract

This research work was carried to determine the effect of financial deepening on economic growth and development in Nigeria (1990 – 2016). The motive for the study was necessitated by the need to settle conflicting findings of previous studies as well as close an existing literature gap. In order to achieve this, the researcher set out three (3) specific objectives which by examining the relationships between financial deepening variables such as market capitalization, money supply, financial savings etc on real GDP which was used to proxy economic growth, while it also investigated the relationship between trade openness and inflation on infrastructure and per capita income respectively, which served as proxy for economic development. Ex-post facto research design was deemed most suitable for the study, and the relationships were shown using there econometric models, which was adopted from a previous study. Data were sourced from secondary source from the vault of the CBN statistical bulletin, as deemed most accurate by the study. The data were presented in tables. Hypotheses were tested using regression analysis (OLS), which was adopted due to its simplicity and unbiasness. The regression was tested using E-view software version 8.0. The result of the study showed that financial deepening has had significant positive effect on economic growth, while it has not necessarily promoted development in crucial areas of the economy. Based on the findings, the study recommended that that policy makers should consider reducing impediments to liquidity in the stock market such as volatility of the floatation cost, and also government should encourage monetary authorities like the central bank of Nigeria to reduce interest rate so that prospective investors can increase their investment and raise the nation’s production capacity.

Keywords: Money Supply, Private Sector Credit, Market Capitalization, Trade Openness

Introduction

The link between financial deepening and economic growth has long received significant attention in the literature. This attention is well-justified, since a better understanding of how the financial sector contributes to economic growth has important regulatory implications. Traditionally, the debate has revolved around whether deepening in the financial system results in a faster economic growth. A large body of literature has emerged, both at the theoretical and empirical level, attempting to address this question.
Economic growth and development in a developing economy rest on an efficient financial sector that pools domestic saving and mobilizes foreign capital for productive investments. In the developing countries, industries need more funds to increase their investment so that they can meet globalization constraint. Financial deepening is to improve economic conditions through increased competitive efficiency within financial markets thereby indirectly benefiting non-financial sectors of the economy. Financial deepening also helps in increasing the provision and choices of financial services which would come through its financial infrastructure (Nwanna & Chinwudu, 2016). Nzotta and Okereke (2009) ascertain that financial deepening is the ability of financial institutions in an economy to effectively mobilize savings for investment purposes. Financial deepening vigorously attracts the reservoir of savings and idle funds and allocates same to entrepreneurs, business, households and government for investments projects and other purposes with a view of returns which forms the basis for economic growth and development.

It is well known that stock market and other financial market institutions play a major role in the economy through enhancing the efficiency in capital formation, allocation and distribution. They enable both corporations and the government to raise long-term and short term capital which enables them to finance new projects and expand other operations. In this regard, it is observed that the performance of the economy is boosted when capital is supplied to productive economic units. Furthermore, as economies continue to develop, additional funds are therefore needed to meet the rapid expansion and the stock market and banks therefore serves as an appropriate avenue for the mobilization and allocation of resources among competing user which are critical to the growth and efficiency of the economy (Sulaiman & Azzez, 2012).

The growing importance of stock market and banks around the world has recently opened a new avenue of research into the relationship between financial deepening and economic growth and development (Arestis, Demetriades & Luintel, 2011). The general idea that economic growth and development is related to financial deepening was first highlighted by Schumpeter in 1911 (Okoli 2010). The financial deepening role in economic growth and development has received much attention. However, the focus has been almost entirely on bank based financial deepening measures, while ignoring the possible impact of stock market development.

Within the finance-growth nexus literature, some have argued that financial intermediaries mobilize, pool and channel domestic savings into productive capital and contribute to economic growth. If this view is to be accepted, then a competitive and well-developed banking sector must be an important contributor to economic growth. In a competitive banking sector however, borrowing rates are higher and lending rates are lower and thus the transformation of household savings into productive capital investment is faster. On the other side of this debate is an argument that financial deepening is a consequence, and not a cause, of economic growth. In this view, economic growth and development increases demand for sophisticated financial instruments, which in turn leads to growth in the financial sector (Ardic & Damar, 2016). Well-functioning financial institutions enhance overall economic efficiency, create and expand liquidity, mobilize savings, promote capital accumulation, transfer resources from traditional (non-growth) sectors to the more modern growth-inducing sectors, and also encourage a competent entrepreneur response in these modern sectors of the economy.

Statement of the Problem

Financial deepening plays an important role in determining the growth of an economy. It broadens its resource base, raises the capital needed to stimulate investment through savings and credit, and boosts the overall productivity. The design and implementation of effective interventions and programs in the Nigerian banking sector has led to a continued growth in financial assets, with a direct contribution from financial intermediaries of 7.2 percent to the country GDP in 2013. However, economic growth in Nigeria, whether as a result of financial development or other factors has been fluctuating over the last decade with rates as low as 1.5 percent in 2008. Therefore, it is of importance to assess the effects on economic growth of the banking sector deepening in Nigeria.
Financial deepening implies the level of development and innovation of traditional and non-traditional financial services (Moore, 2014). While Nzotta and Okereke (2009) ascertain that financial deepening is the ability of financial institutions in an economy to effectively mobilize savings for investment purposes.

The financial deepening vigorously attracts the reservoir of savings and idle funds and allocates same to entrepreneurs, businesses, households and government for investments projects and other purposes with a view of returns which forms the basis for economic development. Despite this, Nigerian financial deepening has failed to experience impressive performance such as attraction of foreign investment or halt capital flight. Despite of various policies, the economy still have not addressed the financial gaps in the system. This is because neither domestic savings nor investments in country have appreciably increased since the introduction of the policies as the economy still remained largely oligopolistic and uncompetitive, as few large banks control the greater segment of the market in terms of total assets, total liabilities and total credit in the banking system. The objective of this study is to contribute to the body of knowledge that exists in the area of financial deepening and economic growth, by reviewing empirical studies based on econometric studies.

Objectives of the Study

The broad objective of this study is to examine the effect of financial deepening on Nigerian economic growth and development from 1990 to 2016. The specific objectives of the study are to:

1. Examine the relationship between money supply and real gross domestic product in Nigeria.
2. Determine the relationship between private sector credit and real gross domestic product in Nigeria.
3. Assess the relationship between market capitalization and real gross domestic product in Nigeria.

Research Questions

To examine the topic of this study, the following research questions are posed:

1. To what extent does money supply impact on real gross domestic product in Nigeria?
2. What is the nature of relationship between private sector credit and real gross domestic product in Nigeria?
3. What is the extent of relationship between market capitalization impact and real gross domestic product in Nigeria?

Research Hypotheses

This study is designed to examine the effect of financial deepening on Nigerian economic growth and development. The hypotheses therefore postulated as follows:

- \( H_{o1} \) – There is no significant relationship between Money supply and real gross domestic product in Nigeria.
- \( H_{o2} \) - There is no significant relationship between Private sector credit and real gross domestic product in Nigeria.
- \( H_{o3} \) - There is no significant relationship between Market capitalization and real gross domestic product in Nigeria.

Review of Related Literature

Conceptual Review

Financial deepening implies the level of development and innovation of traditional and non-traditional financial services (Moore, 2014). While Nzotta and Okereke (2009) ascertain that financial deepening is the ability of financial institutions in an economy to effectively mobilize savings for investment purposes. The financial deepening vigorously attracts the reservoir of savings and idle funds and allocates same to entrepreneurs, businesses, households and government for investments projects and other purposes with a view of returns which forms the basis for economic development.
Financial deepening implies the ability of financial institutions to effectively mobilize savings for investment purposes. The growth of domestic savings provides the real structure for the creation of diversified financial claims. It also presupposes active operations of financial institutions in the financial markets, which in turn entails the supply of quality financial instruments and services (Ndekwu, 1998).

Financial deepening generally entails an increased ratio of money supply to gross domestic product. (Nzotta, 2004). The more liquid money is available to an economy, the more opportunities exist for continued growth of the economy. The level of financial deepening reflects the soundness of the financial sector and the ability with which credits are created with respect to lending and deposit rates. According to Nwaogwugwu (2008), Financial deepening refers to the increased provision of financial services with a wider choice of services geared towards the development of all levels of society. The World Bank (2010) further contends that financial deepening encompasses the increase in the stock of financial assets. From this perspective, financial deepening implies the ability of financial institutions in general, to effectively mobilize financial resources for development. This view accepts the fact that a financial system's contribution to the economy depends on the quality and quantity of its services and the efficiency with which it performs them.

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 like money supply ratio to gross domestic product, intermediation ratio consists of indicators concerning to bank-based measures like private sector credit ratio to gross domestic product and capital market-based measures such as market capitalization ratio to gross domestic product (Ndebbio, 2014). According to Ndebbio (2014), economic growth and development of a country depends greatly on the role of financial deepening. He argued 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. In short, and for our purpose, financial deepening 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 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, 2014). 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 developing countries including Nigeria.

**Concept of economic growth and development**

Though no unanimously accepted definition has been gotten by now, most of the theoreticians think of the economic development as a process that generates economic and social, quantitative and, particularly, qualitative changes, which causes the national economy to cumulatively and durably increase its real national product. In contrast and compared to development, economic growth is, in a limited sense, an increase of the national income per capita, and it involves the analysis, especially in quantitative terms, of this process, with a focus on the functional relations between the endogenous variables; in a wider sense, it involves the increase of the GDP, GNP and NI, therefore of the national wealth, including the production capacity, expressed in both absolute and relative size, per capita, encompassing also the structural modifications of economy (Esso, 2010).

**Theoretical Framework**

Development economists have long recognized that the financial deepening plays an important role in the process of economic growth. The theoretical foundation of this research works is based on supply leading hypothesis and demand following hypotheses.
According to Ohwofasa (2013), 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 Demirguc-Kunt& Levine (2008) in a theoretical review of the various analytical methods used in finance literature, found strong evidence that financial development is important for growth. To them, it is crucial to motivate policymakers to prioritize financial sector policies and devote attention to policy determinants of financial development as a mechanism for promoting growth (Patrict,1966).

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 (2010) and Demetriades and Hussein (2006). According to this alternative view, any evolution in financial markets is simply a passive response to a growing economy.

Empirical Review

Nwanna and Chinwudu (2016) examines financial deepening and economic growth in Nigeria from 1985 to 2014. It focused on the impact of stock market and bank deepening variables such as money supply, market capitalization, private sector credit and financial savings have on economic growth of Nigeria. Stock market provides the avenue through which long term fund could be raised for investment project. It is reputed to perform critical functions, which promote economic growth and prospects of the economy. The study adopted the supply leading hypothesis. The study used annual time series data for 1985 to 2014 obtained from the Central Bank of Nigeria statistical bulletin. The ordinary least square (OLS) econometric techniques wereemployed in which variations in the dependent variable, economic growth, measured by gross domestic product growth rate were regressed on money supply ratio to gross domestic product, private sector credit ratio to gross domestic product, market capitalization ratio to gross domestic product and financial saving ratio to gross domestic product using time series data from 1985 to 2014. The result of the analysis reveals that both bank based and stock market financial deepening proxies has significant and positive effect on economic growth and that the banking sector and stock market in Nigeria has an important role in the process of economic growth.

Onuoghe (2014) attempt to investigate into the causal impact of financial deepening on economic growth in case of India. For analyzing the long term equilibrium relationship between the desired variables, we have employed Autoregressive Distributed Lag (ARDL) Bound testing approach. ARDL being a new approach is an improvement over the other traditional techniques of cointegration. Further, using the Granger Error Correction Model (ECM) technique we have tried to estimate the causal impact in the short run also. The findings suggest that there exist an equilibrium relationship in long run between financial deepening and economic development. Results suggested that financial deepening causes economic growth in the long run and also in the short run.
Moore (2014) investigate the long run effect, financial deepening has on the Ghana economy, using a time series data for 14 years period 1998 to 2011. Their study used private sector credit ratio to GDP, money supply ratio to GDP, total domestic credit ratio, total bank liabilities ratio and a set of control variables such as trade openness, inflation rate and real gross government expenditure. The study, although useful in the use of more than one measure of financial deepening and the use of control variables, the number of observation of their data points is insufficient to obtain a statistically significant result for the individual variables. The researcher failed to apprehend the fact that the time span of the study draws into question the validity of the finding, as they could be spurious. Econometric theories suggest a minimum 15 years’ time series data as a measure of avoiding spurious result in a study.

Esso (2010) investigated the casual relationship between financial deepening and economic growth in the economic community of West African States (ECOWAS) countries over the period 1960-2005. The ARDL approach to co-integration and the test for non-causality proposed by Toda and Yamamimoto were employed. Using the ratio of M$_2$ to GDP as an indicator of financial deepening, the result found a positive long run relationship between financial deepening and economic growth in four countries - cote d'Ivoire, Guinea, Niger and Togo and negative long run relationship in Sierra Leone and Cape Verde. The results of the causality test showed that financial deepening causes economic growth only in Cote d'Ivoire and Guinea. The author concluded that the relationship between financial deepening and economic growth cannot be generalized across countries because these results are country specific. Jalil, Wahid and Shahbaz (2010) investigate the relationship between development of the financial sector and economic growth. They used time series data for the 1985 -2007 period and set the estimation strategy under the ARDL model. The variables used for financial deepening were liquid liabilities to nominal GDP (M2/GDP), credit to private sector to nominal GDP, Commercial/Central Bank asset ratio. The researchers found a positive monotonic relationship between financial development and economic growth for South Africa, Trade Openness and per capita real capital were found as the other important determinants of economic growth.

Bashiru (2013) studied the financial deepening and economic growth in Ghana using quarterly data from 1983 -2008. The Johansen co integration approach, vector error correction, vector autoregressive and Granger causality approaches were employed. financial deepening was proxies by credit to private sector/GDP and broad money/GDP, interest rate and market capitalization, government spending/GDP while economic growth was measured by real GDP per capita. The results revealed a positive long run relationship between financial deepening as measured by credit to private sector/GDP and economic growth but no long run relationship when financial deepening was measured by broad money/GDP. The study found support for the endogenous growth prediction. However, evidence for the demand–pulling hypothesis was found when financial deepening was proxies by broad money to GDP. The study recommended that the Bank of Ghana could consider enhancing the institutional, legal and regulatory framework to enable financial institutions perform their roles without friction.

Uddi, Sjo and Shahbaz (2013) looked at the relationship between financial development and economic growth in Kenya over the period of 1971-2011. The study was based on a Cobb-Douglas production augmented by incorporating financial development. The study established that, in the long run, development of financial sector, (measured by domestic credit provided by banking sector; domestic credit to private sector; money plus quasi money M2) as a ratio of money (M1) had a positive impact on economic growth. Shittu (2012) examines the impact of financial intermediation on economic growth in Nigeria with time series data from 1970 to 2010. Employing co integration test and error correction model, he finds that financial intermediation has a significant impact on economic growth in Nigeria.

Gap in Literature

This study focuses on filling methodological gap, as most of the studies reviewed were using co-integration and granger casualty test. This study simply adopts ordinary least square regression method in its analysis to know if the same result will be ascertained.
Methodology

Research Design

This research examines financial deepening and economic growth and development in Nigeria (1999-2016). The data employed were time series data, and ordinary least square (OLS) method was used to estimate the model parameters. The study adopts the *ex post facto* research design which is a very common and ideal method in conducting research in business and social sciences.

Nature and sources of Data

The data required for this analysis are time series data. In order to facilitate time series analysis, the data will be sourced from the Central bank of Nigeria (CBN) statistical bulletin, Nigerian Stock Exchange (NSE) fact books, published journals, seminars papers, Central bank of Nigeria bullion, unpublished write-up. The data relevant for the study were trade openness, market capitalization, private sector credit, financial savings, and money supply as were used to proxy financial deepening, gross domestic product, and inflation rate were used to proxy economic growth, while per capita income and infrastructural development were used to proxy economic development.

Model Specification

The specification of the model involves the determination of the dependent and independent variables that are included in the model. It expresses the mathematical relationship that exists between the dependent and the independent or explanatory variables. Following a detailed review of previous studies and improving upon the theory, economic growth $Y_t$ is expressed as a function of financial deepening, $F_t$, and a set of control variable, $Z_t$. Ohwofasa and Aiyedogbon (2013), Victor and Samuel (2014). This is expressed as below;

$$Y_t = f \{F_t, Z_t\}$$

Improving upon the theoretical postulate in equation 1 above, the equation will be expanded to accommodate the indicators of financial deepening and other growth determinant.

Thus, $Y_t = \alpha + \alpha F_t + \alpha Z_t + u$  

This research work adapts the model of Victor and Samuel (2013) with slight modifications. In his model, the researcher expressed economic growth and development as a function of financial deepening measured by money supply and other set of control variables such as Private sector credit, Market capitalization, interest rate etc. To examines the impact of financial deepening on economic growth and development in Nigeria. The study used the multivariate model below:

$$GDPGR = f(M_2 + MCAP + PSC + FINS)$$

This model covers the first four objectives of the study which deals with economic growth. Below are the models showing relationships between economic development and financial deepening.

$$INFRD = f(OPEN)$$

$$PCI = f(INFR)$$

The model was represented in a log-linear econometric format to obtain the coefficients of the elasticity of the variables, while reducing the possible impact that any outlier may have thus;
Model 1

\[ \text{GDPGR}_t = a_0 + a_1 M_2 + a_2 \text{MCAP}_t + a_3 \text{PSC}_t + a_4 \text{FINS}_t + U_t \]  
\( (6) \)

Model 2

\[ \text{GDPGR}_t = a_0 + a_1 \text{PSC}_t + U_t \]  
\( (7) \)

Model 3

\[ \text{GDPGR}_t = a_0 + a_1 \text{MCAP}_t + U_t \]  
\( (8) \)

Where

- \( \text{GDPGR} = \) Gross Domestic Product Growth Rate
- \( M_2 = \) Ratio of money supply to GDP
- \( \text{PSCR} = \) Ratio of private sector credit to GDP
- \( \text{MCAP} = \) Ratio of Market Capitalization to GDP
- \( \text{FSR} = \) Ratio of Financial Saving to GDP
- \( \text{OPEN} = \) Trade Openness
- \( \text{PCI} = \) Per capita income
- \( \text{INFDR} = \) Infrastructural development
- \( \text{INF} = \) Inflation rate
- \( a_0 = \) constant
- \( U = \) Error term
- \( t = \) Time Trend

A Priori Expectation

This refers to the supposed relationship between and or among the dependent or independent variables of the model as determined by the postulations of endogenous theory. Here, the researchers determine whether the variable conforms to expectations or whether there is a deviance. The table below summarizes the a priori expectation of the parameters:

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>VARIABLES</th>
<th>EXPECTED SIGNS</th>
<th>RESEARCHERS WHO HAVE EMPLOYED THEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSCR</td>
<td>Credit to Private Sector ratio to GDP</td>
<td>Positive(+)</td>
<td>Demetriades &amp; Hussein, (1996);Nzotta and Okereke(2009); Ohwofasa&amp; Aiyedogbon(2013);</td>
</tr>
</tbody>
</table>
Method of Data Presentation and Analysis

The result generated from the study are analyzed using both descriptive and analytical techniques. The analytical techniques employed are based from the result of the regression analysis using the ordinary least (OLS) approach. Analysis will be done using economic view (E-view) statistical package.

Model Estimation Procedure

The procedure for estimation adopted for this study is the Ordinary least square (OLS) method. The choice of this method is made because it is best suited for testing specific hypothesis about the nature of economic relationship and will be suitable in estimating the linear regression specified. The method is also preferred because its parameter estimates have property of linearity, unbiasedness, and minimum variance among class of unbiased estimators which are consistent and sufficient (Guajaratı, Porter and Gunasekar, 2012).

The ordinary least square (OLS) technique is mathematically simpler, intuitively appealing, and there are also readily available software packages for use like E-views that are user's friendly in carrying out the estimation.

Evaluation Based on Economic Criteria

The econometric criteria determine the reliability of the statistical criteria and in particular the standard errors of the parameters estimates. The economic criteria that will be adopted in this study is the Durbin-Watson test. The Durbin-Watson test for autocorrelation compare the calculated $d^*$ value from the regression residuals with the $d_L$ and $d_u$ in the Durbin Watson tables based on 5% level of significant and k degree of freedom. Where k = number of explanatory variables excluding the constant. The Durbin Watson (DW) statistics seeks to establish whether there exists autocorrelation in the estimated model. A good model is one that has DW statistics close to and above 2 as it may be assumed to have no first-order autocorrelation (Gujaratı, 2004).

Evaluation Based on Statistical Criteria

Coefficient of Multiple Determination ($R^2$)

This measures the goodness of fit of the parameters estimated and also explain the percentage/total variations in the dependent variable (GDPGR) caused by variations in the explanatory variables included in the model. $R^2$ lies between zero (0) and one (1). Also is the Adjusted $R^2$ the coefficient of determination adjusted for degrees of freedom associated with the sums of squares entering into the model. Both the $R^2$ and adj$R^2$ (adjusted) will be used to evaluate the obtained result.

The $F$-test

This test the overall significance of the regression model basically. If the F-statistic exceeds the F-critical value, we reject the null hypothesis that the variables are jointly insignificant at the 5% chosen level of significance. Otherwise, we
do not reject the null. Again the probability value of the F-statistic may also be used in reaching the same conclusion. If the probability value < 0.05, we reject the null and conclude that the variables of the model are jointly significant.

DATA PRESENTATION AND ANALYSIS

This section focuses on the presentation and analysis of the data used in estimating the models developed and explained in section three (3) are presented. The analysis is based on economic criteria and statistical criteria. Table 4.1 presents the data for money supply ratio to gross domestic product, Private sector credit ratio to gross domestic product, market capitalization ratio to gross domestic product, financial saving ratio to gross domestic product, trade openness (total import and export as a ratio to gross domestic product) and inflation rate for the period of 1990 to 2016, while table 4.2 presents data for gross domestic product (GDPGR) at growth rate, infrastructural development and per capita income.

Table 4.1: Gross domestic product, Money supply, Private sector credit, Market capitalization, Financial saving, Trade openness and Inflation rate from 1990-2016

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Money Supply as a Ratio of GDP (%)</th>
<th>Private Sector Credit as a Ratio of GDP (%)</th>
<th>Market Capitalization as a Ratio of GDP (%)</th>
<th>Financial Savings as a Ratio of GDP (%)</th>
<th>Inflation (%)</th>
<th>Trade Openness (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>11.2</td>
<td>7.1</td>
<td>4.96</td>
<td>6.27</td>
<td>3.6</td>
<td>47.35</td>
</tr>
<tr>
<td>1991</td>
<td>13.8</td>
<td>7.6</td>
<td>4.23</td>
<td>6.92</td>
<td>23</td>
<td>38.67</td>
</tr>
<tr>
<td>1992</td>
<td>12.7</td>
<td>6.6</td>
<td>3.56</td>
<td>6.30</td>
<td>48.8</td>
<td>39.85</td>
</tr>
<tr>
<td>1993</td>
<td>15.2</td>
<td>11.7</td>
<td>4.36</td>
<td>7.80</td>
<td>61.3</td>
<td>35.28</td>
</tr>
<tr>
<td>1994</td>
<td>16.5</td>
<td>10.2</td>
<td>4.74</td>
<td>7.93</td>
<td>76.8</td>
<td>26.35</td>
</tr>
<tr>
<td>1995</td>
<td>9.9</td>
<td>6.2</td>
<td>6.20</td>
<td>3.73</td>
<td>51.6</td>
<td>58.67</td>
</tr>
<tr>
<td>1996</td>
<td>8.6</td>
<td>5.9</td>
<td>7.09</td>
<td>3.34</td>
<td>14.3</td>
<td>46.43</td>
</tr>
<tr>
<td>1997</td>
<td>9.9</td>
<td>7.5</td>
<td>6.73</td>
<td>4.24</td>
<td>10.2</td>
<td>49.83</td>
</tr>
<tr>
<td>1998</td>
<td>12.2</td>
<td>8.8</td>
<td>6.58</td>
<td>5.01</td>
<td>11.9</td>
<td>39.84</td>
</tr>
<tr>
<td>1999</td>
<td>13.4</td>
<td>9.2</td>
<td>6.41</td>
<td>5.93</td>
<td>0.2</td>
<td>43.84</td>
</tr>
<tr>
<td>2000</td>
<td>13.1</td>
<td>7.9</td>
<td>7.03</td>
<td>5.74</td>
<td>14.5</td>
<td>43.65</td>
</tr>
<tr>
<td>2001</td>
<td>18.4</td>
<td>11.1</td>
<td>9.61</td>
<td>7.08</td>
<td>16.5</td>
<td>46.79</td>
</tr>
<tr>
<td>2002</td>
<td>19.3</td>
<td>11.9</td>
<td>9.81</td>
<td>7.60</td>
<td>12.2</td>
<td>41.78</td>
</tr>
<tr>
<td>2003</td>
<td>19.7</td>
<td>11.1</td>
<td>13.71</td>
<td>6.61</td>
<td>23.8</td>
<td>52.13</td>
</tr>
<tr>
<td>2004</td>
<td>18.7</td>
<td>12.5</td>
<td>18.51</td>
<td>6.99</td>
<td>10</td>
<td>57.75</td>
</tr>
<tr>
<td>2005</td>
<td>18.1</td>
<td>12.6</td>
<td>19.85</td>
<td>9.01</td>
<td>11.6</td>
<td>68.77</td>
</tr>
<tr>
<td>2006</td>
<td>20.5</td>
<td>12.3</td>
<td>27.58</td>
<td>9.37</td>
<td>8.5</td>
<td>56.20</td>
</tr>
<tr>
<td>2007</td>
<td>24.8</td>
<td>17.8</td>
<td>63.81</td>
<td>13.04</td>
<td>6.6</td>
<td>59.16</td>
</tr>
<tr>
<td>2008</td>
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<td>28.5</td>
<td>39.36</td>
<td>16.95</td>
<td>15.1</td>
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<tr>
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<td>23.25</td>
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<tr>
<td>2012</td>
<td>19.5</td>
<td>20.6</td>
<td>20.79</td>
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<td>12.0</td>
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<tr>
<td>2013</td>
<td>18.9</td>
<td>19.7</td>
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<tr>
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<td>15.3</td>
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<td>20.12</td>
</tr>
<tr>
<td>2016</td>
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<td>18.5</td>
<td>21.8</td>
<td>13.9</td>
<td>9.1</td>
<td>19.67</td>
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</tbody>
</table>

SOURCE: Compiled from data obtained from Central Bank of Nigeria Statistical Bulletin 2016
Table 4.2: Gross domestic product, infrastructure and per capital income from 1990-2016

<table>
<thead>
<tr>
<th>Year</th>
<th>GDP at Growth Rate (%)</th>
<th>INFD</th>
<th>PCI</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>7.5</td>
<td>7.1</td>
<td>321.7</td>
</tr>
<tr>
<td>1991</td>
<td>6.5</td>
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<td>12.8</td>
<td>6.6</td>
<td>291.3</td>
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<td>0.6</td>
<td>11.7</td>
<td>153.1</td>
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<td>10.2</td>
<td>171.0</td>
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<td>314.7</td>
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<tr>
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<td>7.5</td>
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<td>8.8</td>
<td>273.9</td>
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<td>9.2</td>
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<td>2.7</td>
<td>7.9</td>
<td>377.5</td>
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<tr>
<td>2001</td>
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<td>11.1</td>
<td>350.3</td>
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<td>645.8</td>
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<td>12.6</td>
<td>804.0</td>
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<td>2006</td>
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<td>12.3</td>
<td>1014.7</td>
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<td>1131.1</td>
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<tr>
<td>2008</td>
<td>8.2</td>
<td>28.6</td>
<td>1376.9</td>
</tr>
<tr>
<td>2009</td>
<td>6.8</td>
<td>36.9</td>
<td>1092</td>
</tr>
<tr>
<td>2010</td>
<td>6.3</td>
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<td>20.4</td>
<td>2739.9</td>
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<tr>
<td>2013</td>
<td>4.9</td>
<td>19.7</td>
<td>2979.8</td>
</tr>
<tr>
<td>2014</td>
<td>4.3</td>
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<tr>
<td>2015</td>
<td>5.4</td>
<td>23.1</td>
<td>2640.3</td>
</tr>
<tr>
<td>2016</td>
<td>6.3</td>
<td>24.6</td>
<td>2512.8</td>
</tr>
</tbody>
</table>

SOURCE: Compiled from data obtained from Central Bank of Nigeria Statistical Bulletin 2016

Data Analysis

The growth in the market manifested in the phenomenal increase in market capitalization from 4.9 percent in 1990 to 63.81 percent in 2007. It can be observed from table 4.1 that the money supply ratio rose from 9.7 percent in 1990 to 36.7 percent in 2009 and decreased to 19.7 percent in 2016. The ratio of financial savings to gross domestic product increase to a high of 23.25 percent in 2009 but reduce gradually thereafter to 13.45 percent in 2016. In 1990 the growth rate show a negative of -7.8 and gradually increase to 7.5 percent in 1998 after the introduction of the structural adjustment programme of 1992. This later rose above the pre-reform levels and remained positive until 1995 when it recorded a negative of -0.3. The economy witnessed high growth rates in gross domestic product of 33.7 percent in 2004 before it decline to 3.4 percent in 2005 followed by a gradual recovery to 6.3 percent in 2016. A key factor responsible for the negative growth rates from 1995 - 1997 periods was the low performance of the oil sector and the collapse of the international oil prices. Table 4.1 reveals that inflation rate rose to a high of 76.8 percent in 1994 and to 0.2 in 1999. The inflation rate has been experiencing fluctuation from 1990 to 2016. Trade openness rose from 13.97 percent in 1985 to 68.77 percent by 2005

Test of Hypotheses

Hypothesis one \( H_0 \): There is no significant relationship between money supply and real gross domestic product in Nigeria.
HI1: There is a significant relationship between money supply and real gross domestic product in Nigeria.

Table 4.3: Ordinary Least Square Regression Result for Model 1
Dependent Variable: Gross Domestic Product Growth Rate

<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>0.692466</td>
<td>5.016117</td>
<td>3.522086</td>
<td>0.0020</td>
</tr>
<tr>
<td>M2</td>
<td>0.488774</td>
<td>0.120110</td>
<td>2.593458</td>
<td>0.0030</td>
</tr>
</tbody>
</table>

R-squared 0.534116 Mean dependent var 4.400000
Adjusted R-squared 0.503647 S.D. dependent var 7.595234
S.E. of regression 7.067605 Akaike info criterion 6.872486
Sum squared resid 7.30E+09 Schwarz criterion 7.059312
Log likelihood -99.08729 Hannan-Quinn criter. 10.503160
F-statistic 10.14186 Durbin-Watson stat 2.063649
Prob(F-statistic) 0.000122
Source: Computer output data using E-views8.0

The money supply ratio coefficient of 0.488774 suggests that a percentage increase in money supply ratio resulted in 0.488774 percent increase in gross domestic product growth rate, a proxy for economic growth within the period covered by the study. The multiple coefficient of determination (R²) is approximately 0.53, that is, the explanatory variable explained about 53% of the total variation in the dependent variable. Also, the adjusted R² is about 0.50 that is 50% variation. It revealed that only 50% of changes in economic growth can be explained by the money supply.

Decision

The P-value of 0.000122 is less than the significance value of 0.05; hence we reject the null hypothesis and conclude that there is a significant relationship between money supply and real gross domestic product in Nigeria.

Hypothesis two

H₀₂: There is no significant relationship between private sector credit and real gross domestic product in Nigeria.
H₁₂: There is a significant relationship between private sector credit and real gross domestic product in Nigeria.

Table 4.4: Ordinary Least Square Regression Result for Model 2
Dependent Variable: Gross Domestic Product

<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>0.671063</td>
<td>4.979631</td>
<td>2.562036</td>
<td>0.0041</td>
</tr>
<tr>
<td>PSC</td>
<td>0.613361</td>
<td>0.197729</td>
<td>1.531915</td>
<td>0.0010</td>
</tr>
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</table>

R-squared 0.554216 Mean dependent var 4.400000
Adjusted R-squared 0.523347 S.D. dependent var 7.595234
S.E. of regression 7.051416 Akaike info criterion 6.867900
Sum squared resid 1292.784 Schwarz criterion 7.054726
Log likelihood -99.01849 Hannan-Quinn criter. 9.463370
F-statistic 10.14186 Durbin-Watson stat 2.063649

Prob(F-statistic) 0.000122
The private sector credit ratio to GDP coefficient of 0.613361 suggests that a percentage increase in private sector credit ratio to GDP resulted in 0.613361 percent increase in gross domestic product growth rate, a proxy for economic growth within the period covered by the study. The multiple coefficient of determination ($R^2$) is approximately 0.55, that is, the explanatory variables explained about 55% of the total variation in the dependent variable. We can say that the model is well fitted. Also, the adjusted $R^2$ is about 0.52 that is, about 52% variation in the regress and is explained by the regressors.

**Decision**

The P-value of 0.000232 is less than the significance value of 0.05; hence we reject the null hypothesis and conclude that there is a significant relationship between private sector credit and real gross domestic product in Nigeria.

Hypothesis three

$H_0$: There is no significant relationship between market capitalization and real gross domestic product in Nigeria.

$H_1$: There is a significant relationship between market capitalization credit and real gross domestic product in Nigeria.

**Table 4.5: Ordinary Least Square Regression Result for Model 3**

<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>0.634670</td>
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<td>0.0021</td>
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<tr>
<td>MCR</td>
<td>0.650221</td>
<td>0.318359</td>
<td>0.551047</td>
<td>0.0011</td>
</tr>
</tbody>
</table>

R-squared: 0.727847
Adjusted R-squared: 0.638527
Mean dependent var: 4.400000
S.D. dependent var: 7.595234
Akaike info criterion: 6.867112
Schwarz criterion: 7.053938
Hannan-Quinn criterion: 11.53058
Durbin-Watson stat: 2.952165

**Decision**

The P-value of 0.000232 is less than the significance value of 0.05; hence we reject the null hypothesis and conclude that there is a significant relationship between market capitalization and real gross domestic product in Nigeria.

Market capitalization ratio to GDP coefficient of 0.650221 suggests that a percentage increase in market capitalization ratio to GDP resulted in 0.650221 percent increase in gross domestic product, a proxy for economic growth within the period covered by the study. The multiple coefficient of determination ($R^2$) is approximately 0.72, that is, the explanatory variables explained about 72% of the total variation in the dependent variable. We can say that the model is well fitted. Also, the adjusted $R^2$ is approximately about 0.64 that is, about 64% variation in the regress and is explained by the regressor.

**Decision**

The P-value of 0.000425 is less than the significance value of 0.05; hence we reject the null hypothesis and conclude that there is a significant relationship between market capitalization and real gross domestic product in Nigeria.
Discussion of findings

This study examined the effect of financial deepening Nigeria economic growth and development from 1990 -2016. Following a detailed time series analysis the findings revealed a plausible result on economic growth in Nigeria. As revealed from the findings of the study, money supply ratio to GDP had a positive and significant effect on economic growth. This implies that a high money supply deepen the financial sector which promote economic growth. Money supply can create economic stimulus resulting to corporate earnings and effective supply of money to the best investments, will in turn lead to increased productivity and potentially faster economic growth. This was consistent with the findings of Nzotta and Okeke (2009).

From the regression result, it was shown that private sector credit ratio to GDP had a positive significant effect on economic growth. Private sector credit is responsible for the quality and quantity investment and therefore to economic growth. This implies that credit to private sector is a good estimate of the proportion of domestic assets allocated to productive activity in the economy. Market capitalization which is used as a proxy to measure the extent that the stock market allocates capital to investment projects and the opportunities for risk diversification that it provides investors. It also shows the overall size of the stock market as a percentage of GDP at constant price. Market capitalization ratio to GDP from the result was seen to have a positive significant effect on economic growth. This implies that the ability to mobilize capital for investment and diversify risk on an economy-wide basis will promote economic growth.

From the result, financial saving ratio to GDP had a positive significant effect on economic growth. This implies that financial liberalization is likely to lead to an increase in interest rates which would, in turn, increase the rate of saving as people will now be encouraged to save in banks. With increased financial savings, banks are more likely to increase their supply of loan-able funds. Effective allocation of savings to the best investment will lead to increased productivity and potentially faster economic growth. This support the findings of Nzotta and Okereke (2009). Trade openness on the other hand had no significant relationship with infrastructural development. This is to say that even if the government decide to liberalize trade, it is still not a guarantee that there will be an improvement in infrastructures in the country. This disagrees with the Apriori expectation of the study which stated a positive relationship between the variables. This conform with the findings of Nzotta and Okereke (2009) and George et al (2013). Lastly, the result of the last regression analysis shows that there is a significant relationship between inflation rate and poverty alleviation, but this relationship is negative in nature. That is to say that as the rate of inflation increases, the level of poverty increases. This conforms with the findings of the works of Okoli (2010) and Bashiru (2013).

Summary of findings, conclusion and recommendations

Summary of Findings

This research work examined financial deepening and economic growth and development of Nigeria by specifically examining the effect of money supply ratio to GDP, private sector credit ratio to GDP, market capitalization ratio to GDP and financial savings ratio to GDP on economic growth, while it also examined the effect of trade openness and inflation rate on economic development covering a time frame of 1990 to 2016. All tests and estimations were conducted using econometric view (E views) 8.0 package. The results of the regression analyses led to the following findings:

1. There is a significant and positive relationship between money supply and real gross domestic product in Nigeria.
2. There is a significant and positive relationship between private sector credit and real gross domestic product in Nigeria.
3. There is a significant and positive relationship between market capitalization and real gross domestic product in Nigeria.
Conclusion

The finance-growth nexus has captured the interest of development practitioners, finance experts and researchers as well as policy makers in recent times given the turbulent experiences of the financial world and its accompanying consequences. This study examined financial deepening (stock based, bank based) and economic growth and development in Nigeria from 1990 to 2016 using ordinary least square approach. The specific objectives were to estimate the impact of financial deepening measures on economic growth in Nigeria. In the process of doing this, the hypotheses that financial deepening promotes economic growth in Nigeria was validated.

This study, in line with the theoretical literature, revealed a positive influence of financial deepening as measured by money supply ratio to GDP, private sector credit ratio to GDP, market capitalization ratio to GDP and financial savings ratio to GDP on economic growth and development of Nigeria. In the light of the above and the debate over the finance-growth nexus, the findings of this study should not be viewed as conclusive empirical evidence, but rather an additional motivation for further research in the area with regards to the use of indicators of financial deepening.

Recommendations of the Study

Taking cognizance of the findings from the study, the following recommendations are proposed.

1. Efforts should be made to effectively control the money supply, as the excess of money in the economy can cause demand push inflation, which will be another problem to the economy.
2. It is pertinent that government should design policies aimed at developing the financial sector so as to make private credit accessible to investors as this will boost private sector development and facilitates domestic investors which is one of the engine of growth.
3. Nigerian capital market should be well regulated to ensure that public trust is sustained to ensure that the fund obtained from the capital market is sustained.

References


