# RECENT TREND OF FINANCIAL DEEPENING AND ECONOMIC GROWTH: EMPIRICAL EVIDENCE FROM NIGERIA'S DATA

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**Abstract**
*Financial systems all over the world play fundamental roles in the growth and development of the economy. Given the profound changes in the Nigerian financial system over the recent years, this study aims at assessing the performance of Nigeria's financial sector deepening and unveiling its implications on the economic growth and development of the country in recent times. By basing the study on the Harrod-Domar Growth Model and using qualitative and quantitative methods of analyses, it was found that while the recent trend in Nigeria's financial deepening in terms of credit allocation to the private sector increased steadily, annual market capitalization dwindled and the outcomes in terms of economic growth and development were grossly insignificant, implying that the deepening of the financial system in the country in itself was insignificant as its impact on the economy was found to be majorly negative. The Granger Causality Test result shows that independence exists between economic growth and broad money supply in Nigeria; and that independence is suggested between credit to the private sector and economic growth as well as between annual market capitalisation and economic growth-implying that financial deepening does not cause economic growth. The OLS result corroborates the evidence revealed by the analysis of the trend of financial deepening and economic growth in Nigeria as its impact on the economy is disappointing. The study therefore, recommends that in credit allocation to the private sector, key sectors such as manufacturing and agriculture should be highly favoured through improved lending to investors, the monetary authority should encourage lenders of funds to bias the maturity period of loans towards the long end and devise reliable means of punishing chronic debtors in banks through legislation to ensure that public funds are not subjected to waste by unscrupulous borrowers, the public should be enlightened more on financial markets operation and the anti graft agencies as well as the regulatory authority should closely monitor the markets to avoid manipulations and encourage private sector participation; and poverty and unemployment in the country must be sincerely tackled by making funds available to young entrepreneurs who are willing to venture into small and medium scale businesses if the financial sector must deepen enough to cause economic growth.*

**Key words:** *Financial Deepening, Economic Growth and Nigeria*

## 1. INTRODUCTION

One of the salient features of the drivers of growth and development of any economy including Nigeria is a conscious development in its financial sector. In recent times there has been a marked shift in economic policy strategy toward greater pivotal role of the private sector as the prime –mover of the economy and correspondingly, a diminished role of government. This paradigm shift in development strategy, which is from inward-looking to outward looking approach, in turn has elevated the importance of the financial system in resource mobilization and allocation. The effectiveness and efficiency in performing these roles, particularly the intermediation between the surplus and deficit units of the economy, depend largely on the level of development of the financial system (Ofanson, Aigbokhaevbolo and Enabulu, 2010). Development economists posit that economic growth depends on capital accumulation and underscore this as a central problem in economic development (Adams, 1998). However, capital accumulation requires financing through financial intermediation. This influences economic growth and development by affecting the extent to which savings become available and are allocated to investment opportunities that bring the highest returns (Akanni, 1997). It

is to ensure its soundness that the financial sector appears to be the most regulated and controlled by the government and its agencies.

For decades, the Nigerian financial system has been undergoing a series of profound changes. For instance, the financial system was liberalized in the 1980s and recapitalized recently in the 2000s. It is not the fact of change which is surprising-financial innovation that leads to the deepening of the financial sector in general in itself is not very new; but the dimension, pace and extent of the change. Apart from the increase in the broad money relative to Gross Domestic Product (GDP) conventional indicator of financial deepening, new indicators such as Credit to Private Sector (CPS) and Annual Market Capitalization on the Nigerian Stock Exchange in recent times have taken distinct dimension of increase/decrease, many new financial instruments/assets and techniques have been developed and existing ones have been adapted to meet new demands and new circumstances. This has been the rationale behind the financial sector reform embarked upon by the government since the 1980s aimed at deepening the financial system. This means it is expected that by the 1990s the deepening of the financial sector of the country had started impacting positively on the economy.

Suffice to ask: Is the size and the composition of the Nigerian financial system -in terms variety of financial products, changes in allocation of funds, and market capitalization deep enough to contribute substantially to the required rate of economic growth and consequently development?; this has serious implications for the improvement of the country's economy as more avenues are created for the mobilization of the finance required for financing economic growth and development.

Thus, as a process, the financial system adjusts to changes in the real economy just as the economy responds to developments in the financial sector. Therefore, this study aims at assessing the recent dimensions in Nigeria's financial sector deepening and unveiling its implications on the economic growth and development of the country, with a view to making sound recommendations. It thus, specifically aims at determining the causal relationship between such dimensions of financial deepening and economic growth as well as estimating the resulting impact on the growth of the Nigerian economy.

## 1.0. HYPOTHESES

- There is a causal relationship between recent dimensions of financial deepening and economic growth in Nigeria.
- The recent pattern of the deepening of the financial system in Nigeria has impact on the economic growth of the country.

## 1.1. STRUCTURE OF THE STUDY

To verify the aforementioned hypotheses, the study is structured into five sections. Section one is the introduction which summarizes the background to the study, the research problem, objectives and hypotheses. On the other hand, section two reviews relevant literature by giving conceptual clarifications, discussing the theoretical framework for the study and reviewing empirical evidences. While section three discusses the methodology which is purely qualitative and quantitative in nature; section four assesses Nigeria's financial deepening and its empirical results on the economy and unravels its implications for economic growth and development while section five concludes with recommendations.

## 2. REVIEW OF RELEVANT LITERATURE

Development economists generally agree that financial deepening plays a very crucial role in enhancing the economic growth and development of an economy. Therefore, the concepts of financial deepening, economic growth and development, theoretical perspectives as well as empirical evidences on this subject matter are well documented in economic literature.

## 2.0. Conceptual Framework

### 2.1. The Concept of Financial Deepening

The concept of financial deepening is used in the economic literature to mean an increase in the stock of financial assets relative to Gross Domestic Product (GDP) (Falegan, 1987). It was introduced by Shaw (1973) and Mackinnon (1973) as a measurement of efficient allocation of capital by shifting more of the available resources to better investment opportunities. Ndebbio (2004) pointed out that financial deepening connotes growth in the supply of financial assets in an economy. Cheng (1980) defined financial deepening in the context of developing countries' effort to achieve growth through financial intermediation. In this respect, financial deepening represents an increased amount of financing of production and investment through formal or specialized markets. In another but simplified meaning, it can be taken to mean the increase in size of monetary system and also as a means of integrating the informal market into the formal financial system to enhance efficiency of intermediation, and effectiveness of monetary policy. Oloyede (1998) explained it to mean the state of an atomised financial system, which is financial system that is largely free of financial repression. Financial deepening is thus an outcome of the adoption of appropriate real financial policies, namely by relating real rates of return to real stock of finance. Conversely, shallow financial system is partly the consequence of distortion in the prices of finance.

Some indicators of financial deepening may include the ratio of money supply to GDP; ratio of private sector credit to GDP; annual market capitalisation; value of shares; ratio of domestic credit to GDP; ratio of non-bank savings to gross national savings; the size of non-bank institutions to financial system; and the degree of monetization. However, this study considers only these three: ratio of money supply to GDP, ratio of private sector credit to GDP and annual market capitalisation. While the first two better capture the short-term end of the financial market, the third approximates the performance of the long-term end of the financial market of the Nigerian economy.

The main objective of financial deepening is to eliminate the short coming associated with shallow finance. Others include raising the ratio of private domestic savings to income; to increase (deepen) the size of monetary system to generate profit opportunities for investors and more importantly, to strengthen the process of mobilisation and allocation of savings to displace in some degree the fiscal process of inflation finance and reliance on foreign aid. It permit a better allocation of saving by broadening and diversifying the financial markets-money and capital market- which investment opportunities compete for savings flow. Savers are given wide menu of choice of portfolio in terms through enlarged markets for their savings.

For the purpose of this study, therefore, financial deepening is viewed as the effort aimed at increasing capital accumulation, and improving accessibility to finance that is evident in increased financial assets, leading to the expansion of the real economy. This means that it is possible for the financial institutions and instruments to broaden without engendering real financial growth that is reflected by increased output in the economy.

### 2.1.2. The concept of Economic Growth and Development

Solow (1956:65) defined economic growth as a term used to indicate the increase of per capita GDP or other measures of aggregate income. Case, Fair and Oster (2009:663) described economic growth as an increase in the total output in an economy. This implies that economic growth refers to the quantity of goods and services produced in an economy at a particular time period. The World Bank (1993:25) comprehensively described economic growth as a more rapid output and productivity growth in agriculture and manufactured exports supported by high rates of domestic savings and expansion in physical and human capital. This means the accumulation of productive assets is the foundation of a rapid economic growth which creates jobs, increases real wages, and raises the rate of return on labour force, thereby increasing the demand for technology and knowledge (Gushibet, 2012).

The concept of economic development on the other hand, is a multidimensional process involving the elimination or reduction of inequality, unemployment, poverty, slavery, and other associated social

vices (Bozimo, 1999:28). Jhingan (2011) described economic development as growth plus change. It is related to qualitative changes in economic wants, goods, incentives, institutions, productivity and knowledge and it described the underlying determinants of growth such as technological and structural changes.

### 2.2. Theoretical Framework

The theoretical framework for this study is based on the Harrod-Domar Growth Model (1946) which was supported by the Stages of Growth Model advocated by an American economic historian, Rostow (1960) as cited in Sanusi (2010:5). The Harrod-Domar Growth Model demonstrated the mechanism through which finance is mobilized from the surplus sector (savings) to the deficit sector (lending) by means of investment activities which in turn influence economic growth. The Model proceeded by assuming that an economy could attain an equilibrium stage given an initial level of investment, which equals savings. Rostow (1960) added to the Harrod-Domar proposition by propounding that it was possible to identify all societies in their economic dimensions, as lying within one of five categories: the traditional society, the pre-conditions for take-off into self-sustaining growth, the take-off, the drive to maturity and the age of high mass consumption. He further stated that one of the principal strategies of development necessary for take-off was the mobilization of domestic and foreign savings to generate sufficient investment to accelerate economic growth. However, saving and investment are not a sufficient condition for economic growth but they would propel growth only if such other conditions as developed financial markets, highly developed infrastructure, well-trained and educated work-force, the motivation to succeed, and an efficient government bureaucracy/institutions are prevalent. These theoretical propositions underline that adequate finance is necessary to stimulating the economic growth of a country.

### 2.3. Empirical Evidences

Available empirical literatures on the subject of financial deepening and economic growth, the world over shows that financial factor interferes with the growth process to a very large extent; and that a sound financial system is synonymous to economic growth and development. Here, we review the empirical works of Akanni (1997) and Thornton (1996) on Nigeria and on 22 selected developing countries respectively as both established a strong link between financial deepening and economic growth.

Akanni (1997) found out that in an economy that is characterized by a dual gap of savings and investment, and at the same time a short fall in the flow of foreign capital, financial deepening could permit the financial system to mobilize and allocate savings to displace foreign capital. This would ensure the development of the local capital market with the aim of promoting new opportunities for pooling savings and specialized investment.

Thornton (1996) investigated the relationship between economic growth and financial deepening in selected developing economies. Using Granger causality test for twenty-two developing economies, the results showed that for 8 of the 22 countries, financial deepening and economic growth appeared to be determined contemporaneously, that is the null hypothesis was rejected in both directions; that financial deepening causes economic growth was supported in five cases at 5% level of significance (the Philippines, the Dominion Republic, Elsavador, Jamaica and Malaysia) and a further 2 cases ( Nepal and Thailand) at 10% level of significance, there was evidence of unidirectional causality. The results further showed a negative unidirectional relationship in the case of Mexico, a unidirectional causality from economic growth to financial deepening in 4 countries (Myammar, Peru, Uruguay and Paraguay) at 5% level of significance. In two countries (Jamaica and Venezuela), there appeared to be feedback effects. This was also reported in the case of Nigeria between the country's capital market and economic growth (Njiforti, Adama and Kromtit, 2008).

## 3. METHODOLOGY

Qualitative and quantitative methods of analyses were employed to assess the deepening of the Nigerian financial system and to show the implications for the economic growth and development of the country. Thus, the Augmented Dickey Fuller Unit Root Test was used to determined the stationary state of the data series which covers the period 1990-2013-the choice of this period is due to the fact that it witnessed quite a number of financial sector reforms geared towards deepening the sector; the Granger Causality Test was employed to determined the causal relationship between financial deepening and economic growth while the Ordinary Least Squares was adopted as the instrument of estimating the impact of financial deepening on economic growth in Nigeria.

The pieces of information used for this study were from secondary sources: the Central Bank of Nigeria (CBN), National Bureau of Statistics (NBS), Journals, the internet and other documentary sources. Strikingly, reviewing related conceptual and theoretical issues as well as descriptive statistics gives a deeper insight and enables us to draw reasonable implications, conclusion and make sound recommendations.

The relevant variables used include the Nominal Gross Domestic Product, which forms the proxy for economic growth; the ratios of broad money supply and credit to private sector to GDP ($M_2$/GDP and CPC/GDP) as well as Annual Market Capitalisation (AMC) are proxies to the recent pattern of financial deepening in Nigeria. The reasons for choosing these variables are as adduced earlier.

### 3.0. Pre-Analysis Tests-Tests of Stationarity and Co-integration

To avoid misleading results, it is important to first determine the stationary state of the data for the study. Thus, the Augmented Dickey Fuller test, also known as unit root was adopted because it is much easier to apply and understand. The models used for the test of the GDP data series run in the following forms:

$$\Delta GDP_t = \partial_{t-1} + U_t \quad (1)$$

$$\Delta GDP_t = \beta_{1t} + \partial GDP_{t-1} + U_t \quad (2)$$

$$\Delta GDP_t = \beta_{1t} + \beta_{2t} + \partial GDP_{t-1} + U_t \quad (3)$$

Where, t is the time/trend variable. In each case the null hypothesis is that $\partial=0$, which is the same as saying that there is a unit root. The difference between equation (1) and the other last two equations lies in the inclusion of the constant (intercept) and the trend. Note that the stationary state of the $M_2$/GDP, CPC/GDP) and AMC data series was also tested using similar models.

Co-integration test is carried out in order to determine the long-run relationship between the dependent and independent variables when one or all of the variables is/are non stationary at level-which means they have stochastic trend. Essentially it is used to check if the independent variables can predict the dependent variable both now (short-run) or in the future (long-run).

The model for the co-integration test runs in the following form:

$$GDP_t = a_0 + a_1 GDP_{t-1} + a_2 M2/GDP_{t-1} + a_3 CPS/GDP_{t-1} + a_4 AMC_{t-1} + a_5 K_{t-1} + U_t \quad (4)$$

Where K= other explanatory variables and t-1 is the number of time lagged,

### 3.1. Analytical Techniques

The Granger technique (Granger, 1969; Gujarati, 1995) has been adopted to determine the direction of causation between economic growth and financial deepening-as viewed in this study. Granger proposed that for a pair of linear covariance stationary time series X and Y; X causes Y if the past values of X can be used to predict Y more accurately than simply using the past values of Y. Formally, X is said to cause Y if $\partial^2_1 (Y_t: Y_{t-j}, X_{t-i}) < \partial^2_2 (Y_t: Y_{t-j})$, where $\partial$ represents the variance of forecast error and i, j =1,2,3,…,k.

The Granger causality test requires the use of F-statistic to test whether lagged information on a variable say "Y" provides any statistical information about another variable "X"; if not, then, "Y" does not Granger cause "X".

Notably, the Ordinary Least Squares Technique of regression was used to determine the relationship between financial deepening and economic growth. Although regression analysis deals with the dependence of one variable on other variables, it does not necessary imply causation. Therefore, in view of the nature of economic behavior, any realistic formulation of economic models should involve some lagged variables among the set of explanatory variables. Lagged variables are one way of taking into account the length of time in the adjustment process of economic behavior, and perhaps the most efficient way of rendering them dynamic. Thus, the models to be estimated here are specified under the assumption that financial deepening and economic growth affect each other with (distributed) lags.

### 3.2. Modelling Financial Deepening and Economic Growth in Nigeria

The causal relationship between financial deepening and economic growth is determined using the models below:

$$GDP_t=\sum^{n}_{i=}1\alpha iM2/GDPt_{-i}+\sum^{n}_{i=1}\beta_j GDP_{t-j}+U_{1t} \quad (5)$$

$$M_2/GDP_t=\sum^{n}_{i=}1\lambda iM2/CPS/GDPt_{-i}+\sum^{n}_{j=1}\partial_j GDP_{t-j}+U_{2t} \quad (6)$$

$$GDP_t=\sum^{n}_{i=1}\alpha_i^{*}CPS/GDP_{t-1}+\sum^{n}_{i=1}\beta_j^{*}GDP_{t-1}+U_{3t} \quad (7)$$

$$CPS/GDP_t=\sum^{n}_{i=1}\lambda_i^{*}CPS/GDP_{t-1}+\sum^{n}_{j=1}\partial_j^{*}GDPt_{-j}+U_{4t} \quad (8)$$

$$GDP_t=\sum^{n}_{i=1}\alpha_i^{'}AMC_{t-1}+\sum^{n}_{j=1}\beta_j^{'}GDP_{t-j}+U_{5t} \quad (9)$$

$$AMC_t==\sum^{n}_{i=1}\lambda_i^{'}AMC_{t-1}+\sum^{n}_{j=1}\partial_j^{'}GDP_{t-j}+U_{6t} \quad (10)$$

Where, it is assumed that the disturbances $U_{1t}$ and $U_{2t}$,$U_{3t}$ and $U_{4t}$ , $U_{5t}$ and $U_{6t}$ are uncorrelated.

Equations (5) and (6) postulate that current GDP is related to past values of GDP as well as those M2/GDP and that current M2/GDP is also related to past values of M2/GDP and GDP. Equations (7) and (8),(9) and (10) indicate a similar behavior between GDP and CPS, GDP and AMC. Note that $\alpha_i$, $\beta_j$, $\lambda_i$, $\partial_j$, $\alpha_i^{*}$, $\beta_j^{*}$, $\lambda_i^{*}$,$\partial_j^{*}$, $\alpha_i^{'}$, $\beta_j^{'}$ $\lambda_i^{'}$, and $\partial_j^{'}$ are parameters to be estimated.

The apriori expectation here is that the sets of $M_2/GDP_t$, $CPS/GDP_t$, $AMC_t$ and $GDP_t$ would be statistically significantly different from zero in the regression of the above models. Thus, if $\sum\alpha_i\neq0$ and $\sum\partial_j\neq0$, it implies a feedback or a bilateral causality between economic growth (GDP) and financial deepening in terms of the ratio of broad money supply to GDP.

The Granger technique involves estimating the equations in (4) and (5); (6) and (7); (8) and (9); Therefore, as a pair wise test, the null hypotheses for these models become:

- $H_0$: $\sum\alpha_i=0$, that is, lagged M2/GDP terms do not belong in the regression.
- $H_0$: $\sum\partial_j=0$, that is, lagged GDP terms do not belong in the regression.
- $H_0$:$\sum\alpha_i^{*}=0$, that is, lagged CPS/GDP terms do not belong in the regression.
- $H_0$:$\sum\partial_j^{*}=0$, that is, lagged GDP terms do not belong in the regression.
- $H_0$:$\sum\alpha_i^{'}=0$, that is, lagged AMC terms do not belong in the regression.
- $H_0$:$\sum\partial_j^{'}=0$, that is, lagged GDP terms do not belong in the regression.

This implies that the alternative hypothesis in each case is that the lagged terms belong in the regressions. To test these hypotheses, we apply the F-test given by:

$$F=\frac{(RSS_R-RSS_{UR})/t-1}{RSS_{UR}/n-k} \quad (11)$$

Where $RSS_R$= the restricted residual sum of squares and $RSS_{UR}$= the unrestricted residual sum of squares which follows the F-distribution with (t-1) and (n-k) degree of freedom; t= the number of lagged terms and k= the number of parameters estimated in the unrestricted regression. This follows that when we regress current GDP on all lagged GDP terms and other variables if any but do not include say, the lagged M2/GDP variables, we obtain the $RSS_R$. While when we regress including the lagged M2/GDP terms, we obtain the $RSS_{UR.}$

**Decision Rule:** If the computed F value exceeds the critical F value at a chosen level of significance, we reject the null hypothesis, in which case, the lagged terms belong in the regression.

It is pertinent to point out here that the Granger causality test is sensitive to the number of lags used in the analysis. That is why Gujarati (1995) suggested using more than fewer lags. This enables us to have more confidence in our conclusions.

To statistically ascertain the extent to which recent dimensions of financial deepening impacts on the growth of the economy, we derive a multiple linear regression model from the models above with $M_2$/GDP, CPS/GDP and AMC as explanatory variables and GDP as dependent variable. The econometric model is specified thus:

$$GDP_t = b_0 + b_1 M_2/GDP_t + b_2 CPS/GDP_t + b_3 AMC_t + U_t \quad (12)$$

Where $b_0$ is the intercept; $b_1$, $b_2$, and $b_3$ are the coefficients to be estimated; $M_2/GDP_t$, $CPS/GDP_t$ , and $CPS/GDP_t$ represent financial deepening in terms of broad money supply, credit to private sector and annual market capitalisation respectively; while $U_t$ is the disturbance term which is N $(0, \partial^2)$. The signs of $M_2/GDP_t$, $CPS/GDP_t$ , and $CPS/GDP_t$ are expected to be positive to show that they contribute positively to economic growth.

## 4. ASSESSMENT OF FINANCIAL DEEPENING, ECONOMIC GROWTH AND DEVELOPMENT IN NIGERIA AND EMPIRICAL RESULTS

This section documents recent patterns of financial deepening in Nigeria. Looking at markets as well as financial institutions, it sheds light on how funds are intermediated, the efficiency of their allocation, and how broadly they can be accessed. It also assesses empirically the impact of the recent pattern of financial deepening on economic growth of Nigeria.

### 4.0. An Overview of the Nigerian Financial System/Markets/Instruments

The Nigerian financial system is a conglomerate of institutions, markets, instruments and operators that interact to provide such financial services as resource mobilization and allocation, financial intermediation and the facilitation of foreign exchange transactions. It is categorized into money and capital markets (formal institutions) where short term and medium term financial instruments or securities are intermediated and traded respectively; and informal institutions such as local money lenders, thrift and saving societies.

Some of the most striking changes in the financial system have occurred in the money markets. These markets have had to adapt to changes in short term borrowing and lending patterns by different economic sectors and to the introduction of new market instruments. The instruments of the Nigerian money market include treasury bills (most pronounced), treasury certificates , money at call, commercial papers, certificate of deposits, bankers' unit fund, stabilization securities and ways, means and advances with each having its maturity date, thereby determining the volume of credit in circulation in the economy.

The capital market is made up of institutions that facilitate the issuance of secondary trading of medium and long term financial instruments. The financial instruments in use in the Nigerian capital market could be classified into: equity, preference shares, debts instruments, government bonds, debenture loans and stocks, bonds and derivatives.

In general, the Nigerian financial system comprises the regulatory authorities such as the Central Bank, Federal Ministry of Finance, Securities and Exchange Commission and so on; banks and non-banks financial institutions. All these participants amongst others play the vital roles of financial intermediation, effecting good payment systems, as well as assisting in monetary policy implementation. The process of financial intermediation involves the mobilization and allocation of resources through the financial (money and capital) markets by financial institutions (banks and non-banks) and by the use of financial instruments. Thus, the efficiency and effectiveness of the intermediation process largely depends on the development of the financial markets. This accounts why several financial sector reforms such as recapitalization of financial institutions and the National Financial Inclusion Agenda are being pursued by the government.

### 4.1. Recent Dimension in Financial Deepening in Nigeria

Table I summarizes some recent selected financial deepening indicators in Nigeria.

*Table I. Recent Selected Financial Deepening Indicators for Nigeria (1990-2013)*

| Year | Nominal GDP Growth (%) | Financial Deepening (M2/GDP) (%) | Financial Deepening (CPS/GDP) (%) | Annual Market Capitalization On the Stock exchange (%) |
|---|---|---|---|---|
| 1990 | 23.4 | 19.8 | 12.5 | 27.7 |
| 1991 | 16.7 | 24.2 | 13.2 | 41.7 |
| 1992 | 70.6 | 20.9 | 10.9 | 35.1 |
| 1993 | 28.4 | 24.2 | 18.6 | 52.2 |
| 1994 | 31.6 | 25.6 | 15.9 | 39.6 |
| 1995 | 114.8 | 15.0 | 9.3 | 172.1 |
| 1996 | 39.8 | 12.8 | 8.8 | 58.4 |
| 1997 | 3.7 | 14.7 | 11.3 | -1.4 |
| 1998 | -3.3 | 18.0 | 13.0 | -6.9 |
| 1999 | 17.9 | 21.9 | 14.3 | 14.3 |
| 2000 | 43.5 | 22.6 | 13.0 | 57.4 |
| 2001 | 3.1 | 27.8 | 18.1 | 40.3 |
| 2002 | 46.3 | 23.1 | 13.8 | 15.5 |
| 2003 | 22.8 | 23.4 | 14.3 | 77.7 |
| 2004 | 34.5 | 19.8 | 13.4 | 55.4 |
| 2005 | 27.7 | 19.3 | 13.8 | 37.3 |
| 2006 | 27.4 | 21.7 | 14.3 | 76.6 |
| 2007 | 11.3 | 28.1 | 24.5 | 159.6 |
| 2008 | 17.6 | 37.7 | 33.2 | -28.1 |
| 2009 | 1.7 | 43.6 | 41.3 | -262.5 |
| 2010 | 2.3 | 32.5 | 43.4 | -2.3 |

| | | | | |
|---|---|---|---|---|
| 2011 | 11.7 | 32.4 | 28.4 | 22.94 |
| 2012 | 8.38 | 16.39 | 6.83 | -0.18 |
| 2013 | 4.57 | 1.2 | 8.96 | 54.83 |

*Source: Researchers' Computation using data obtained from CBN Bulletin & Reports, Various Issues*

From table I, it is evident that while financial deepening in terms of credit to private sector (CPS/GDP) has increased from 12.5% in 1990 to 14.3% in 1999, 43.4% in 2010 and further nosedived to 8.96% in 2013, annual market capitalization (AMC/GDP) decreased from 27.7% in 1990 to14.3% (1999) and steadily increased over the same period and decreased to -2.3% in 2010 but an alarming increase of 54.83% was recorded in 2013. Money supply as a ratio of GDP dwindled over the years and a record decrease of 1.2% was recorded in 2013. However, economic growth in nominal terms also dwindled over the period under study. Recently, it increased from 17.9% in 1999 to 46.3% in 2002, and decreased thereafter to 2.3% in 2010 but increased marginally to 4.57% in 2013. The trend in figure I below confirms that the rate of growth in GDP is not as much as the rates of growth in the financial markets, even though the markets, particularly the money markets have grown steadily over the past recent years. This corroborates the findings of Aku (2004) that postulated the short run impact of financial deepening on economic growth with an underlying effect through feedback mechanism and the position of Ofanson, Aigbokhaevbolo and Enabulu (2010) that the Nigerian financial system is dominated by banks, that is, it is largely bank-based. However, from 2012 the economy seems to have picked up in terms of nominal growth in output. This would be sustained if clear-cut policies are pursued to further enhance financial deepening.

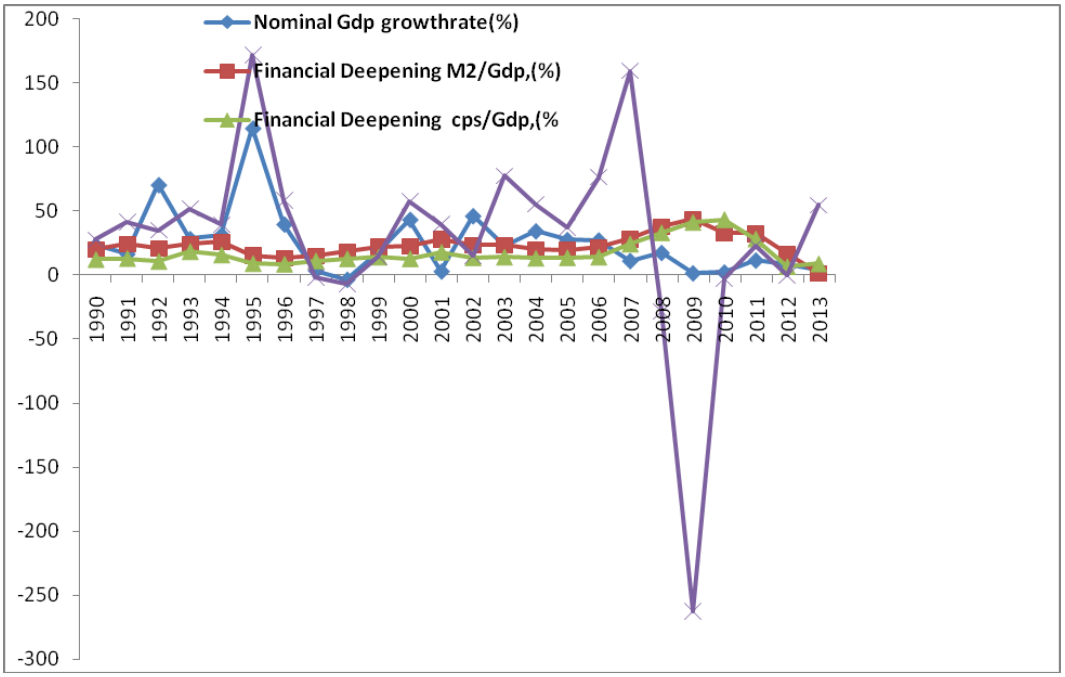


*Fig.1: Trend of Financial Deepening and Economic Growth in Nigeria*

### 4.2. Empirical Results

Having used the econometric software, Eviews to run the data analysis, the results are summarized and discussed using the tables below:

*Table II: ADF Unit Root Results*

| Variable/ADF | Level | | | First Differencing | | | Second Differencing | | |
|---|---|---|---|---|---|---|---|---|---|
| | Int. | Trend/Int. | None | Int. | Trend/Int. | None | Int. | Trend/Int. | None |
| GDP | 0.14 | -0.78 | -1.39 | -2.69 | -6.82 | -2.57* | - | - | - |
| M2/GDP | -1.13 | -1.61 | 0.49 | -1.38 | -2.17 | -1.44 | -1.12 | 0.72 | -1.23 |
| CPS/GDP | -0.09 | -0.83 | 1.11 | -1.04 | -2.21 | -0.84 | -1.51 | -0.76 | -1.56 |
| AMC | -5.37* | -4.90* | -2.87* | - | - | - | - | - | - |
| Critical Value (5%) | -3.21 | -3.99 | -1.98 | -3.27 | -4.05 | -1.98 | -3.34 | -4.19 | -1.99 |

From table II above, stationary series should be greater in absolute terms than the critical values. Thus, based on the results, while the 1999-2010 Nigerian annual data for GDP were stationary at first difference with no intercept and trend, AMC became stationary at level with no intercept. However, the results further show that $M_2$/GDP and CPS/GDP data series were non-stationary even after second differencing. This underlines the volatile nature of the Nigerian money market operations and statistics. Thus, it poses serious limitations to the results and the estimates of the parameters. This is why the results are interpreted with caution.

*Table III: Co-integration Result*

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Sample (adjusted): 1992 2010

Included observations: 19 after adjustments

Trend assumption: Linear deterministic trend

Series: GDPGR RCPS_GDP RM2_GDP AMC

Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

| Hypothesized | | Trace | 0.05 | |
|---|---|---|---|---|
| No. of CE(s) | Eigenvalue | Statistic | Critical Value | Prob.** |
| None * | 0.948550 | 80.87318 | 47.85613 | 0.0000 |
| At most 1 | 0.575674 | 24.49760 | 29.79707 | 0.1802 |
| At most 2 | 0.330113 | 8.209796 | 15.49471 | 0.4432 |
| At most 3 | 0.030959 | 0.597515 | 3.841466 | 0.4395 |

Trace test indicates 1 cointegrating eqn(s) at the 0.05 level

*denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

| Hypothesized | | Max-Eigen | 0.05 | |
|---|---|---|---|---|
| No. of CE(s) | Eigenvalue | Statistic | Critical Value | Prob.** |
| None * | 0.948550 | 56.37558 | 27.58434 | 0.0000 |

| | | | | |
|---|---|---|---|---|
| At most 1 | 0.575674 | 16.28781 | 21.13162 | 0.2085 |
| At most 2 | 0.330113 | 7.612281 | 14.26460 | 0.4195 |
| At most 3 | 0.030959 | 0.597515 | 3.841466 | 0.4395 |
| Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level<br>*denotes rejection of the hypothesis at the 0.05 level<br>**MacKinnon-Haug-Michelis (1999) p-values | | | | |

*Source: Authors' computation using Econometrics-View*

The con-integration result confirms that even though $M_2$/GDP and CPS/GDP data series were non-stationary even after second differencing, the trace test and the maximum Eigen value indicate one co-integrating equation at 0.05 levels. This means that financial deepening and economic growth in Nigeria are co-integrated. Thus, they have both short-run and long-run equilibrium relationships.

*Table IV: Pairwise Granger Causality Tests*

| Date: 07/22/14 Time: 20:18<br>Sample: 1990 2013<br>Lags: 2 | | | | |
|---|---|---|---|---|
| Null Hypotheses | Obs | F-Statistic | Prob | Decision |
| M2/GDP does not Granger Cause GDP | 22 | 0.00814 | 0.9919 | Accept |
| GDP does not Granger Cause M2/GDP | | 1.94276 | 0.1800 | Accept |
| CPS/GDP does not Granger Cause GDP | 22 | 0.52138 | 0.6029 | Accept |
| GDP does not Granger Cause CPS/GDP | | 0.55048 | 0.5866 | Accept |
| AMC does not Granger cause GDP | 22 | 0.35807 | 0.7042 | Accept |
| GDP does not Granger Cause AMC | | 0.64890 | 0.5351 | Accept |

*Source: Authors' computation using Econometrics-View; Note: $\alpha$=0.05 level of significance, $F_\alpha$=4.38*

The Granger Causality Test result as shown in Table IV reveals that independence exists between M2/GDP and GDP. This is because the null hypothesis that GDP does not Granger Cause M2/GDP was accepted at 5% level of significance, implying that economic growth in Nigeria does not cause broad money supply and vice versa. The result further shows that independence is suggested between CPS/GDP and GDP as well as between AMC and GDP. This means that there is no causal relationship between private sector credit and economic growth, as well as between annual market capitalisation and economic growth. On the whole, this finding implies that the recent trend in financial deepening in Nigeria does not cause economic growth.

*Table V:Estimated OLS Result*

| | | | | |
|---|---|---|---|---|
| Dependent Variable: GDPGR | | | | |
| Method: Least Squares | | | | |
| Date: 07/23/14 Time: 10:50 | | | | |
| Sample (adjusted): 1991 2013 | | | | |
| Included observations: 21 after adjustments | | | | |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
| C | 57.72572 | 17.71717 | 3.258180 | 0.0046 |
| LOG(RCPS_GDP)^2 | -4.441794 | 2.312064 | -1.921138 | 0.0716 |
| DLOG(RM2_GDP) | -33.08866 | 22.02284 | -1.502470 | 0.1513 |
| (AMC)^2 | 0.000422 | 0.000366 | 1.153564 | 0.2646 |
| R-squared | 0.358730 | Mean dependent var | | 26.80810 |
| Adjusted R-squared | 0.245565 | S.D. dependent var | | 27.22544 |
| S.E. of regression | 23.64753 | Akaike info criterion | | 9.334038 |
| Sum squared resid | 9506.495 | Schwarz criterion | | 9.532994 |
| Log likelihood | -94.00739 | Hannan-Quinn criter. | | 9.377216 |
| F-statistic | 3.169971 | Durbin-Watson stat | | 1.320907 |
| Prob(F-statistic) | 0.051198 | | | |

*Source: Authors' computation using Econometrics-View*
*Note: ^2 implies a non-linear relationship*

From the estimates of the least squares result in Table V, the regression model that corresponds to equation (12) gives the fitted equation below:

$$GDP\hat{}_t=57.72572-33.08866M2/GDP_t-4.441794CPS/GDP_t+0.000422AMC_t \quad (13)$$

It is evident from the results that the a priori theoretical expectation regarding the sizes and signs of the $M2/GDP_t$, $CPS/GDP_t$ and $AMC_t$ estimates are not fully satisfied. This is because the parameters $b_1$ and $b_2$ are negative. This shows that the recent trend of financial deepening in Nigeria in terms of broad money supply and credit to the private sector impact negatively on economic growth. The negative impact on economic growth could be as a result of the inefficient allocation of funds and their mismanagement as well as financial indiscipline in the economy. However, the parameter $b_3$ is positive. This means that financial deepening in terms of annual market capitalisation impacts positively on economic growth in Nigeria. The $b_0$ is the autonomous component of GDP that does not change with changes in financial deepening. Its relatively large size of 57.72572 underscores the long-run cumulative impact of financial deepening on economic growth. More so, the standard error and t-statistic confirm the insignificance of the estimates.

Consequently, the insignificance of the estimates implies that economic growth in Nigeria in recent times could partly be explained by other non-financial factors such as basic infrastructure and stable business and macroeconomic environment. Thus, the co-efficient of determination of about 25% and the F-statistic of 3.169971further confirm this finding. In addition, the Durbin-Watson statistic of

1.320907 implies that there is fairly no evidence of serial autocorrelation. This underlines the robustness of the estimates.

Sequel to the findings above, it follows that while a long-run equilibrium relationship between financial deepening and economic growth may occur, the short-run equilibrium may not occur. The Error Correction Mechanism (ECM) is used as a result to correct or eliminate the discrepancy that occurs in the short-run.

The ECM Model runs as follows:

$GDP_t=c_0+c_{1\Delta}GDP_t+c_2U_{t-1}+e$ (14)

Where $_\Delta$ denotes the first difference, $U_{t-1}$ is the one period lagged value of the residual from the regression equation (12) and e is the error term

The co-efficient of error correction variable in Table VI (-97%) gives the percentage of discrepancy between the variables that can be eliminated in the next period whereas, the co-efficients of the financial deepening variables in the error correction model measure the short-run relationships which are predominantly negative as shown in Table VI. This further implies that 97% of disequilibrium in the previous period is corrected every year by the changes in economic growth in Nigeria.

*Table VI: Error Correction Result*

| | | | | |
|---|---|---|---|---|
| Dependent Variable: D(GDPGR)<br>Method: Least Squares<br>Date: 07/23/14 Time: 11:02<br>Sample (adjusted): 1992 2010<br>Included observations: 19 after adjustments | | | | |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
| C | 7.580038 | 7.226046 | 1.048988 | 0.3120 |
| D(RCPS_GDP) | -3.122841 | 2.299751 | -1.357904 | 0.1960 |
| D(RM2_GDP) | -1.145963 | 2.341870 | -0.489337 | 0.6322 |
| D(AMC) | -0.033778 | 0.089190 | -0.378721 | 0.7106 |
| ECM(-1) | -0.973339 | 0.402427 | -2.418674 | 0.0298 |
| R-squared | 0.530554 | Mean dependent var | | -0.757895 |
| Adjusted R-squared | 0.396427 | S.D. dependent var | | 36.87484 |
| S.E. of regression | 28.64805 | Akaike info criterion | | 9.768982 |
| Sum squared resid | 11489.95 | Schwarz criterion | | 10.01752 |
| Log likelihood | -87.80533 | Hannan-Quinn criter. | | 9.811044 |
| F-statistic | 3.955601 | Durbin-Watson stat | | 1.641352 |
| Prob(F-statistic) | 0.023685 | | | |

*Source: Authors' computation using Econometrics-View*

### 4.3. Implications for Economic Growth and Development

The deepening of the financial system is expected to enhance the growth of the economy and consequently drive economic development given that funds are allocated and intermediated efficiently. However, Table VII below further reveals that the recent rates of economic growth in real terms could not reduce poverty and unemployment rates significantly. For instance, as it is evident from the table, while economic growth in real terms increased from 1.9% in 1998 to 7.36% in 2011, poverty decreased only steadily from 67% to 62.8% during the same period but unemployment increased from 13.7% in 2006 to 23.9% in 2011. Table VIII below further confirms Nigeria's recent human development index trend in terms of income, education and health.

*Table VII: Selected Macroeconomic Indicators/Indices of Growth and Development in Nigeria for Selected Years.*

| Year | Indicator/Index | Value (%) |
|---|---|---|
| 1998 | 1.Economic Growth | 1.9 |
| | 2.Poverty | 67 |
| | 3. Unemployment | n. a |
| 2006 | 1.Economic Growth | 6.3 |
| | 2.Poverty | 68 |
| | 3. Unemployment | 13.7 |
| 2010 | 1.Economic Growth | 7.98 |
| | 2.Poverty | 69 |
| | 3. Unemployment | 21.1 |
| 2011 | 1.Economic Growth | 7.36 |
| | 2.Poverty | 62.8 |
| | 3. Unemployment | 23.9 |

*Source: Researcher's compilation from NBS, 2011*

*Table VIII: Human Development Index Trend for Nigeria (2008-2010)*

| **Index** | | **2008** | **2009** | **2010** |
|---|---|---|---|---|
| **GNI** | | $1,977 USD | $2,057 USD | $2,156 USD |
| **Life Expectancy (Health)** | | 47.93 | 48.17 | 48.4 |
| **Education** | **Mean** | 4.96 | 4.96 | 5.0 |
| | **Expected** | 8.9 | 8.9 | 8.9 |
| **HDI value** | | 0.416 | 0.419 | 0.423 |

*Source: UNDP Human Development Report 2010*

It is evident that Nigeria recorded little improvements in key human development indicators during the past few years as shown in Table VIII, in particular measured by health, education and income indices. The quality of life of Nigerians generally improved only marginally between 2008 and 2010. The Life

Expectancy at birth increased marginally by 0.9% from 47.93 years in 2008 to 48.4 years in 2010. This is well below the present Administration's target of 55 years as contained in the Transformation Agenda. This is an indication that the growth and development supported by the deepening of the financial sector in terms of credit allocation to the private sector and annual market capitalization is grossly inadequate in the country.

From the foregoing, the main challenges facing the Nigerian financial sector-real sector growth range from misplaced priorities in credit allocation to the private sector in recent times, inappropriate government regulation of the financial system, dominance of short term financing over long term financing, the activities of unscrupulous borrowers, lack of private sector awareness of capital market activities and the manipulations therein as well as increasing poverty and unemployment levels in the country.

## CONCLUSION AND RECOMMENDATIONS

In conclusion, although the Nigerian financial system has undergone substantial changes over the past few decades in terms of credit allocation to the private sector and the number and breadth of instruments in the money and capital markets which also holds good for the economic environment and regulatory framework within which it operates, the system remains by and large under-developed since it is yet to achieve the degree of financial intermediation or financial deepening which the economy requires to foster growth and development. The study therefore, recommends that in credit allocation to the private sector, key sectors such as manufacturing and agriculture should be highly favoured through improved lending to investors in these sectors at a single digit interest rate to help grow the real sector, the monetary authority should encourage lenders of funds to bias the maturity period of loans towards the long end and devise reliable means of punishing chronic debtors in banks through legislation to ensure that public funds are not subjected to waste by unscrupulous borrowers. To improve the mobilization of funds through the capital market, the public should be enlightened more on its operation and the anti graft agencies as well as the regulatory authority should closely monitor its activities to avoid manipulations and encourage private sector participation .All these would enhance economic growth and development as more funds are channelled into productive investments.

Ultimately, poverty and unemployment in the country must be sincerely tackled by making funds available to young entrepreneurs who are willing to venture into small and medium scale businesses if the financial sector must deepen enough to cause economic growth. This would reduce the "hand to mouth" pattern of living in which case households are left virtually with nothing to save thereby causing serious impediment to financial deepening.

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