

**FINANCIAL DEVELOPMENT AND ECONOMIC GROWTH: EVIDENCE AND INSIGHTS****IFEANYI S. MGBATAOGU**

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**Abstract**

*The study examines the effects, nature and direction of possible long run relationship between financial development and economic growth in Nigeria. The financial development variables considered in the study are Gross Fixed Capital Formation as a ratio of GDP, Market Capitalization to GDP, Domestic Credit to Private Sector as a ratio of GDP and Ratio of bank deposits to GDP over the period 1981 to 2016. Gross Domestic Product Growth Rate is used to proxy economic growth. The study employs secondary data sourced from the Central Bank of Nigeria and the Augmented Dickey – Fuller, (ADF), Johansen’s Cointegration, Error Correction Model (ECM) and Granger Causality tests are executed. The results confirm the prevalence of significant long run relationship between variables of financial development and economic growth in Nigeria. Again, the ECM results reveal that all the financial development variables are significant in explaining variations in Gross Domestic Product. The results of the pair-wise Granger Causality reveal a significant uni-directional relationship between bank deposit as a ration of GDP and GDP growth rate with causality flowing from GDP growth rate to bank deposit. Also a uni-directional relationship exists between credit to the private sector and GDP growth rate. Causality flows from GDP growth rate to credit to the private sector. Still a uni-directional relationship is recorded between market capitalization and GDP growth rate, with causality flowing from GDP growth rate to market capitalization. On the other hand, significant bi-directional causality is observed between gross fixed capital formation and GDP growth rate. It is concluded that financial development especially the banking system and equity development in Nigeria is still driven and sustained by the economic growth. Consequently, it is recommended that Nigerian banking system and stock market operations should be repositioned to contribute effectively to economic growth. Credit extension should be rightly and efficiently channeled to the productive sector of the economy to boost output generation in the country.*

*Keywords: Gross Fixed Capital Formation, Market Capitalization, Bank deposits, Credit to Private Sector, Economic Growth.*

**Introduction**

The relevance of financial development has over the years featured significantly in finance and economics literature. Financial markets and institutions all over the world fundamentally function to facilitate this process in order to guarantee efficient financial resource mobilization and allocation in the economy and ultimately ensuring economic growth.

However, there still exist divergent views as per the nature of relationship that actually exists between financial deepening and economic growth. Two schools of thought share in this divergence, with one highlighting the importance of financial development in stimulating growth of the economy, while the other holds a contrary view contending that finance follows where (enterprise) economy leads. The position of the former is strongly supported by the findings of Garcia and Liu (1999), Ikoku (2010) and Nnamdi (2015). Also, supporting this argument are the studies of Adenuga (2010) and Ighodaro and Oriakhi (2011). These studies highlight the many beneficial roles of financial markets and institutions in financial development and in turn the economy. These include Efficiency in financial intermediation which translates into efficient allocation of financial resources to the productive sector of the economy (Adenuga, 2010; Ighodaro & Oriakhi, 2011) thus making access to funds easy and affordable, provision of improved liquidity for investments in long-term financial securities, efficiency of information flows and minimization of transaction costs.

On the other hand, studies of Schumpeter (1934), Robinson (1952), Lucas (1988), Gulley and Shaw (1955) argue that financial deepening plays a limited role in stimulating economic growth. These studies constitute the second school of thought and they all play down the importance of the financial system in economic growth and development. They contend on the contrary that financial deepening depends on the level entrepreneurial development of the economy. Following this line of thought, Schumpeter (1934) aptly put “where enterprises lead, finance follows” and also in the words of Lucas (1988), economists “badly over-stress” the role of financial factors in economic growth. The author emphasizes that that economists “badly overstress” the importance of the financial system and financial deepening on economic growth and development. Giving further support to this line of argument, Gurley and Shaw (1955) contend that, if income grows at a warranted pace, then the demand for financial assets also grows at a specifiable pace. It appears that recent development in some economies around the world seems to provide further support for this school of thought. Specifically, the rapid growth of many Asian economies was accomplished despite a domestic financial sector that could not be regarded as developed (Shan, Morris & Sun, 2001).

Giving these divergences in position and in the light of recent development in Nigerian economy, this study intends to empirically ascertain the nature of relationship that exists between financial deepening and economic growth in Nigeria using recent data.

The remaining part of the study is organized as follows: section two provides an insight into theoretical framework and also presents review of related empirical literature on the subject of financial development borrowing and economic growth. Section three discusses the materials and methodology adopted for the study. Section four presents the empirical results and findings while discussion, conclusion and recommendation are the main focus of the last section which is section five.

### **Theoretical Framework and Empirical Literature**

Theories that address financial development and growth of the economy largely stem from the prevailing financial and economic environment of the proponents. These happenings range from economic boom and recession, as well as repression and liberalization. For instance, Financial repression represents economic conditions in which the government’s regulatory and discretionary policies distort financial prices or interest rates, discourage saving, reduce

investment, and misallocate financial resources. Typical policies that constitute financial repression and that are motivated by the government's fiscal needs include interest rate ceilings, liquidity ratio requirements, high bank reserve requirements, capital controls, restrictions on market entry into the financial sector, credit ceilings or restrictions on directions of credit allocation, and government ownership or domination of banks. Economists have commonly argued that financial repression prevents the efficient allocation. Financial repression also takes the form of government directives for banks to allocate credit at subsidized rates to specific firms and industries to implement industrial policy.

McKinnon (1973) and Shaw (1973) were the first to explicate the notion of financial repression. While theoretically an economy with an efficient financial system can achieve growth and development through efficient capital allocation, McKinnon and Shaw argue that historically, many countries, including developed ones but especially developing ones, have restricted competition in the financial sector with government interventions and regulations. According to their argument, a repressed financial sector discourages both saving and investment because the rates of return are lower than what could be obtained in a competitive market. In such a system, financial intermediaries do not function at their full capacity and fail to channel saving into investment efficiently, thereby impeding the development of the overall economic system. The key reason for the government to implement financially repressive policies is to control fiscal resources. By having a direct control over the financial system, the government can channel funds to itself without going through legislative procedures and more cheaply than it could when it resorts to market financing.

Aside financial repression theory, there is the issue of Financial Liberalization Theory. Prior to financial liberalization, the government of developing countries practiced financial repression thereby subjecting the administrative framework of the financial system to its whims and caprices, such that financial policies formulated and implemented suit its desires (Sulaiman, et al, 2012). Their developmental strategies were designed such that the government or its agencies were vested with the responsibility to make decisions regarding the allocation of resources thereby giving the market forces a less important role to play in economic development. From the layman's perspective, financial liberalization is the removal or loosening of restrictions imposed by the government on the domestic financial market. Johnston and Sundararajan (1999) viewed financial liberalization as a set of operational reforms and policy measures designed to deregulate and transform the financial system and its structure with the view to achieving a liberalized market -oriented system within an appropriate regulatory framework. Financial liberalization refers to measures directed at diluting or dismantling regulatory control over the institutional structures, instruments and activities of agents in different segments of the financial sector. These measures can relate to internal or external regulations (Chandrasekhar, 2004).

From the above definitions, it is obvious that financial liberalization focuses on abolishing controls that restrict financial activities and allowing the market forces (interplay of the forces of demand and supply) to serve as the price mechanism for financial services. Financial liberalization can be termed to mean the deregulation of the financial system. Liberal economists like McKinnon (1973) and Shaw (1973) are advocates of financial liberalization. They argued that financial liberalization can promote economic growth by increasing investment and productivity. According to them, the developing countries are characterized by the government

intervention and interference in the financial system. These countries suffer from poor performance in respect of saving, investment and growth due to financial control, regulation, repression by authorities. Financial liberalization includes interest rate liberalization, elimination of credit ceilings, easing of entry for foreign financial institutions, development of capital markets, and enhanced prudential regulation and supervision (Loayza et. al, 2000). Financial liberalization will result in increase in interest rates on variety of financial assets as they would adjust to their competitive free-market equilibrium level, increase in saving, reduction in the holding of real assets, expansion in the supply of real credit, increase in investment, increase in allocative efficiency of investment.

Empirical literature on the nature of relationship that prevails between financial development and economic growth and development has produced divergent evidence and conclusions. There is no unanimity among researchers on the nature and direction of influence between the two phenomena. While some authors support the supply-leading axiom, others find evidence that supports demand-following function. For instance, in their study, Durusi-Ciftci, Ispir and Yetkiner (2017) argue that debt from credit markets and equity from stock markets are two long run determinants of GDP per capita. In their findings, the long-run relationship is estimated for a panel of 40 countries over the period 1989–2011 by means of Augmented Mean Group (AMG) and Common-Correlated Effects (CCE), both of which allow cross-sectional dependencies. While the cross-sectional findings vary across countries, the panel data analyses reveal that both channels have positive long-run effects on steady-state level of GDP per capita, and the contribution of the credit markets is substantially greater. The authors recommend that policy makers place special emphasis on implementing policies that result in the deepening of financial markets, including institutional and legal measures to strengthen creditor and investor rights and contract enforcement. Thus, by fostering the development of a country's financial sector, economic growth will be accelerated.

Levine et al., (2000) utilize the panel data regressions and a GMM estimator that enhances the work in cross-section. The authors examined the relationship that prevails between financial development and economic growth, while Beck et al., (2000) examine the nature of possible link between financial development and the sources of growth (productivity growth, the physical capital accumulation and savings). The authors investigate a set of indicators of financial development and also have used a set of control variables as Levine and Renelt (1992). The results show that the regression coefficients suggest an economically significant impact of financial development on economic growth. For instance, the value of Mexico for private credits, covering the period 1960-1995 is 22.9% of GDP. An exogenous increase in private credit that would have reduced the sample median, which is about 27.5% and would result in an increase of 0.4% GDP real growth per year.

In Nigerian and African economic environment, Karimo and Ogbonna (2017) examine the nature of causal relationship between financial deepening and economic growth in Nigeria for the period 1970–2013. Utilizing the Toda–Yamamoto augmented Granger causality test, their findings reveal that the growth-financial deepening nexus in Nigeria follows the supply-leading hypothesis implying that it is financial deepening that leads to growth and not growth leading financial deepening. Other studies in Nigerian front that follow this line of argument include Ohwofosa and Aiyedogbon (2013), Nzotta and Okereke (2009), Odeniran and Udejaja (2010) as well as Ndebbio (2004). Odeniran and Udejaja (2010) for instance examine the

relationship between financial sector development and economic growth in Nigeria. The study utilizes the econometric method of VAR framework Granger causality tests. Four variables, namely; ratios of broad money stock to GDP, growth in net domestic credit to GDP, growth in private sector credit to GDP and growth in banks deposit liability to GDP were used to proxy financial sector development. The empirical results suggest bi-directional causality between some of the proxies of financial deepening and economic growth variable. Still using Granger causality framework and extending beyond the shores of Nigeria, Ndebbio (2004) on selected sub-Saharan African countries (SSA) adopts the ratio of M2 to GDP and growth rate per capital real money balances as indicators of financial deepening. The results reveal positive and statistically significant influence on growth rate in per capital real money balances on real per capital GDP growth.

In contrast, Levine et al., (2000) investigate linear models, recent research suggests that the impact of financial development on capital accumulation, productivity growth and overall growth of GDP, may depend on more importantly other factors. For the same econometric methods and data, Rioja and Valev (2004) found that financial development boosts growth in rich countries, primarily by accelerating productivity. However, financial development promotes growth in developing countries, mainly by accelerating the accumulation of capital. In addition, Rioja and Valev (2004) find that the impact may be nonlinear. They conclude that a country with very low levels of financial development accelerates growth slightly by a marginal increase in financial development, while the impact is more important for rich countries and means for middle-income countries. In addition, Rousseau and Wachtel (2002) show that the positive impact of financial development on growth diminishes inflation rates higher. Nnamdi (2015) argues that majority of the financial markets sectors largely exist to service the economy supporting the demand following roles. Also, the study presents evidence that shows prevalence of significant level of disconnect between government and private sector programs in Nigeria as indicated by insignificant causality between equity and government securities as well as between GDP and bank credits to the private sector.

From the studies reviewed above, it is obvious that there still exist variations in the nature of empirical relationships between financial development and economic growth especially in a developing economy like Nigeria's. Hence, the prevalence of these observed discrepancies in conclusions from the empirical results given various prevailing economic settings therefore, implicates the need for such a vital study in Nigeria using current and more elaborate data. This forms the crux of this study.

## **Materials and Methods**

To ensure clarity, this section has been further divided into subsections as presented below:

### **Data and Variables Description**

The data presented in table 1 below shows the annual Values of Nigeria's Gross Domestic Product growth rates (GDP\_GR), Gross Fixed Capital Formation as a ratio of GDP (GFCF\_GDP), **Market Capitalization to GDP (MCAP\_GDP)**, Domestic Credit to Private Sector as a ratio of GDP (DCPS\_GDP) and Ratio of bank deposits to GDP (BDEP\_GDP) over the period 1981 to 2016.

**TABLE 1: Gross Domestic Product Growth Rate (GDPGR), Gross Fixed Capital Formation as a ratio of GDP (GFCF\_GDP), Market Capitalization to GDP (MCAP\_GDP), Domestic Credit to Private Sector as a ratio of GDP (DCPS\_GDP) and Ratio of bank deposits to GDP (BDEP\_GDP) over the period 1981 to 2016**

YEAR	GDP_GR	BDEP_GDP	DCPS_GDP	MCAP_GDP	GFCF_GDP
1981	2.87	0.719215311	9.1	5.3008204	6.96
1982	2.49	1.045032363	10.6	4.94994488	7.44
1983	5.17	0.736116951	10.6	5.17880353	8.58
1984	4.72	0.488852952	10.7	4.73028015	9.45
1985	11.33	0.252701636	9.7	4.90394237	9.30
1986	1.89	0.7207103	11.3	5.05188129	10.35
1987	-0.69	0.847580478	10.9	4.24592823	9.67
1988	7.59	0.581136422	10.4	3.79802903	8.83
1989	7.15	0.292469956	8.0	3.34849323	6.23
1990	11.36	0.450334423	7.1	3.4486498	6.27
1991	0.01	0.832092645	7.6	4.23330913	6.92
1992	2.63	3.615698783	6.6	3.56431903	6.30
1993	1.56	3.853127532	11.7	4.35907903	7.80
1994	0.78	3.009820764	10.2	4.7367184	7.93
1995	2.15	1.848844602	6.2	6.20494582	3.73
1996	4.13	1.301327837	5.9	7.08776569	3.34
1997	2.89	1.081322765	7.5	6.72912849	4.24
1998	2.82	1.115046853	8.8	6.58236051	5.01
1999	1.19	1.599857254	9.2	6.41133586	5.93
2000	4.89	1.793872834	7.9	7.03500015	5.74
2001	4.72	2.064842594	11.1	9.60813553	7.08
2002	4.63	1.645535869	11.9	9.81174589	7.60
2003	9.57	1.880240937	11.1	13.7115802	6.61
2004	6.58	1.634442288	12.5	18.5127299	6.99
2005	6.51	0.824042002	12.6	19.8486314	9.01
2006	6.03	1.053886494	12.3	27.5842273	9.37
2007	6.45	1.135178856	17.8	63.8112373	13.04
2008	5.98	1.620650071	28.6	39.3597316	16.95
2009	6.96	1.904950814	36.9	28.3567489	23.25
2010	7.98	0.856181477	18.6	18.1611404	10.90
2011	5.31	1.93396524	16.9	16.3151476	10.37
2012	4.21	2.89032584	20.4	20.638868	11.24
2013	5.49	4.13750229	19.7	23.8192129	10.81
2014	6.22	4.641508633	19.2	18.9515022	13.49
2015	2.79	4.200758631	19.8	18.0608631	12.13

**Source: Central Bank of Nigeria (CBN)'s Statistical Bulletin 2015**

Based on the theoretical underpinnings and the empirical review made above, it is articulated that Gross Domestic Product, which serves a proxy for economic growth can be explained by the various indicators of financial deepening. The model thus, is specified in its functional form as follows:

$$GDP\_GR = f(GFCF\_GDP, MCAP\_GDP, DCPS\_GDP, BDEP\_GDP) \quad \text{---- (1)}$$

Where;

- *GDP\_GR* – Gross Domestic Product Growth Rate
- *GFCF\_GDP* – Gross Fixed Capital Formation as a ratio of GDP
- *MCAP\_GDP* – Ratio of Market Capitalization to GDP
- *DCPS\_GDP* – Domestic Credit to Private Sector as a ratio of GDP
- *BDEP\_GDP* – Ratio of Bank Deposit to GDP

For estimation purposes, equation (1) is restated as follows;

$$GDP\_GR_t = \alpha_0 + \beta_1 GFCF\_GDP_t + \beta_2 MCAP\_GDP_t + \beta_3 DCPS\_GDP_t + \beta_4 BDEP\_GDP_t + \varepsilon_t \quad (2)$$

### Justification for Use of Variables

#### Gross Fixed Capital Formation (GFCF) as a ratio of GDP

Gross fixed capital formation (GFCF) refers to the net increase in physical assets (investment minus disposals) within the measurement period. It is a component of expenditure approach to calculating GDP. Capital formation refers to the proportion of present income saved and invested in order to augment future output and income. It usually results from acquisition of new factory along with machinery, equipment and all productive capital goods. Capital formation is equivalent to an increase in physical capital stock of a nation with investment in social and economic infrastructure. The gross public investment includes investment by government and public enterprises while gross private domestic investment is investment by private enterprises. Economic theories have shown that capital formation plays a crucial role in the models of economic growth (Beddies 1999; Ghura and Thadji Michael 1996, Ghura, 1999). Growth models like the ones developed by Romer (1986) and Lucas (1988) predict that increased capital accumulation can result in a permanent increase in growth rates. Capital naturally plays an important role in the economic growth and development process. It has always been seen as potential growth enhancing player. Capital formation determines the national capacity to produce, which in turn, affects economic growth whereas deficiency of capital has been cited as the most serious constraint to sustainable economic growth.

#### Market Capitalization to GDP

A well-developed stock market should promote growth by encouraging increased savings and lowered transaction costs (Dicle & Dicle, 2010). The market capitalization over GDP ratio shows the growth of the stock market relative to the GDP. Market capitalization to GDP ratio and turnover to market capitalization ratio are higher in higher income countries (Filer et al. 1999). Higher income countries have more developed financial institutions, meaning a well-developed bond and equity market. With credit generally better available in such an economy, higher income countries generally experience more growth. This ratio apart from revealing the level of financial deepening is also used to determine if a stock market is overvalued or undervalued. It is equal to stock market capitalization divided by gross domestic product times

100. The result of this calculation is the percent of GDP represented by stock market capitalization. A result of over 100% is a sign the market is overvalued. A result of 50% or less is a sign the market is undervalued.

### **Domestic Credit to Private Sector as a ratio of GDP**

Domestic credit to private sector refers to financial resources provided to the private sector by financial corporations, such as through loans, purchases of non-equity securities, and trade credits and other accounts receivable, that establish a claim for repayment. For some countries these claims include credit to public enterprises. The financial institutions include monetary authorities and deposit money banks, as well as other financial institutions (including corporations that do not accept transferable deposits but do incur such liabilities as time and savings deposits). Examples of other financial corporations are finance and leasing companies, money lenders, insurance corporations, pension funds, and foreign exchange companies (World Bank, 2002). The credit-to-GDP ratio is the ratio of a country's national debt to its gross domestic product. The credit-to-GDP gap is a measure that provides advanced signals of banking system stress and can be used to as part of a set of central bank policy tools to mitigate banking system risk.

### **Ratio of bank deposits to GDP**

A bank deposit is money placed into a banking institution for safekeeping. Bank deposits are made into deposit accounts at a banking institution, such as savings accounts, current accounts, or fixed deposits. The account holder has the right to withdraw any deposited funds, as set forth in the terms and conditions of the account. The "deposit" itself is a liability owed by the bank to the depositor (the person or entity that made the deposit), and refers to this liability rather than to the actual funds that are deposited. The ratio of broad money supply to GDP and Domestic credit ratio to GDP for instance, have been widely used to show the causal effects of financial development on economic growth. However, both measures have some limitations. Despite the wide usage of the variables, both measures do not capture the broad access to bank finance by individuals and firms, the quality of bank services and the efficiency of providing banking services. This limitation is solved by this indicator variable.

The a priori expectations are as follows;  
 $\beta_1 > 0$ ,  $\beta_2 > 0$ ,  $\beta_3 > 0$ , and  $\beta_4 > 0$

### **Analytical Tools and Test Specifications**

Given, the main objective of this study it becomes fundamental to examine the properties of the time series data to ascertain their stationarity properties or otherwise, the nature of long run relationship as well as correct any form of distortions that may arise in the short run and also examine the nature and direction of causal relationship. Thus, the following tests will be carried out to ensure that the key objectives are achieved – Stationarity test, Cointegration test, Error Correction Estimates and Granger Causality Test. Therefore, this subsection is further subdivided as follows:

#### **Stationarity Tests**

Stationarity or Unit root tests seek to evaluate the stationarity properties of the time series variables employed as both a necessary and pre-condition for estimating the co-integration equations. In this study, the Augmented Dicker-Fuller (ADF) tests are employed to



confirm; (a) stationarity of the time series data employed, (b) avoid spurious estimates as a consequence of (a) above and (c) confirm the order of integration of the time series variables. The decision rule is that the absolute values of the ADF-statistics should be higher than those of the Test Critical Values at 1%, 5% and 10% levels of significance for all the study variables employed.

### Cointegration Tests

Co-integration tests are carried out in order to ascertain the nature of long-run relationship between the variables of study. This is done through the Johansen's Co-integration test to confirm the existence of a long-run relationship between the variables. The decision rule is that the 'Trace Statistic' is greater than the 'Critical Value'.

### Error Correction Estimates

It is theoretically expected that some deviations from long run relationship could occur due to distortions in any of the variables in the short run. In this direction, Obamuyi (2009) suggest that these adjustments are necessary for policy implications. Consequently, the Error Correction Model (ECM) is employed.

### Test for Causality

The test for causality or feedback effects between the specified variables was executed through the employment of Granger Causality Technique in order to ascertain the extent to which the study variables do promote and/or support themselves in an economic or financial setting. A time series  $X$  is said to Granger-cause  $Y$  if in a series of regression equations, the inclusion of lagged values of  $X$  improves the explanations for  $Y$  and vice versa.

Granger Causality relationships are typified by equations (2) and (3) below;

$$(Y)_t = \alpha + \sum_{t=1}^m \beta_i (Y)_{t-1} + \sum_{t=1}^m \Gamma_j (X)_{t-j} + U_t \dots\dots\dots(2)$$

$$(X)_t = \psi + \sum_{t=1}^m \gamma_i (X)_{t-1} + \sum_{t=1}^m \chi_j (Y)_{t-j} + \varepsilon_t \dots\dots\dots(3)$$

Where  $Y_t$  and  $X_t$  are the time series variables under test, while  $U_t$  and  $\varepsilon_t$  are serially independent random vectors with zero mean and finite covariance matrix

## Presentation of Empirical Results

### Stationarity Tests

The result of stationarity (unit root) test is shown in the table 2 below;

**Table 2: Results of ADF (Unit Root) Tests:**

Variables	ADF t-statistics	Critical value			Order	Probability
		1%	5%	10%		
GDP_GR	-7.920403	-3.679322	-2.967767	-2.622989	I(1)	0.0000
BDEP_GDP	-4.344645	-3.679322	-2.967767	-2.622989	I(1)	0.0019
DCPS_GDP	-5.319605	-3.689194	-2.971853	-2.625121	I(1)	0.0002
MCAP_GDP	-5.603383	-3.679322	-2.967767	-2.622989	I(1)	0.0001
GFCF_GDP	-5.739963	-3.679322	-2.967767	-2.622989	I(1)	0.0001

**Source:** Author's Computation using E-views9 software

The Unit root (ADF) results presented in table 2 above show that for all the variables GDPGR, GFCF\_GDP, **MCAP\_GDP**, DCPS\_GDP and BDEP\_GDP, the absolute values of the ADF

Test Statistics for all the study variables are relatively higher than all the associated critical values at various levels of significance (1%, 5% and 10%). Further, the variables are stationary at first difference and are consequently said to be integrated of order 1; i.e. I(1). Their associated probability values show that they are all significant at 0.05 level.

### Co-integration Test Results

The results of the Johansen's Co-integration tests are presented in table 3 below;

**Table 3: Results of Johansen's Co-integration Tests**

Date: 08/07/17 Time: 12:27				
Sample (adjusted): 1983 2011				
Included observations: 29 after adjustments				
Trend assumption: Linear deterministic trend				
Series: GDP_GR BDEP_GDP DCPS_GDP GFCF_GDP MCAP_GDP				
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 *	0.896791	108.1314	69.81889	0.0000
At most 1*	0.582165	72.27255	47.85613	0.0012
At most 2	0.332075	16.96513	29.79707	0.6426
At most 3	0.153922	5.261351	15.49471	0.7805
At most 4	0.014181	0.414194	3.841466	0.5198
Trace test indicates 2 cointegrating eqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				

**Source:** Extracts from E-views9 software

The results of Johansen's maximum likelihood co-integration above do not indicate any full-rank trend. They show that there are two co integrating equations. This is strong evidence to suggest that there exists a long-run relationship among the study variables. Therefore, the null hypothesis of no co-integration is rejected. Accordingly, the results provide compelling evidence that a significant long run relationship exists between the various variables of financial development and economic growth.

### Presentation of Error Correction Model Estimates

The results of the Error Correction Model are shown in table 4 below;

**Table 4: Results of the Error Correction Model (ECM)**

Dependent Variable: D(GDP_GR)				
Method: Least Squares				
Date: 08/07/17 Time: 12:32				
Sample (adjusted): 1982 2011				
Included observations: 30 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(BDEP_GDP)	-1.096291	0.784955	-1.396630	0.0048
D(DCPS_GDP)	-0.005510	0.369442	0.014913	0.0082
D(GFCF_GDP)	0.085557	0.574522	-0.148919	0.0028
D(MCAP_GDP)	-0.043532	0.063216	0.688616	0.0474
ECM(-1)	-0.837721	0.197427	-5.294964	0.0000
R-squared	0.640291	Mean dependent var		0.081333
Adjusted R-squared	0.566737	S.D. dependent var		3.884270
S.E. of regression	2.836482	Akaike info criterion		5.074018
Sum squared resid	201.1408	Schwarz criterion		5.307551
Log likelihood	-71.11027	Hannan-Quinn criter.		5.148727
F-statistic	1.911751	Durbin-Watson stat		2.092594
Prob(F-statistic)	0.000000			

**Source:** Extracts from E-views9 software

The ECM results shown in table 4 above reveal that the explanatory variables jointly account for 56.6 percent of the changes in output in the long run after adjusting for short run distortions. The Durbin-Watson statistics (2.09) is within the acceptable range and shows insignificant auto correlation. The error correction model (ECM) is of the expected negative sign and also statistically significant at 5% level of significance. The absolute value of the coefficient of the error correction term indicates that about 83.77% of the disequilibrium in the level of budget deficit finance offset by short run adjustment in each year. The implication of this is that the distortion or disequilibrium will be corrected by a little above twelve months.

The goodness-of-fit (as indicated by the significant F-statistics) of the estimated model indicates that the model is reasonably accurate in prediction. The results show that all the financial development variables included in the model are significant in explaining changes in output growth. On specific basis, gross fixed capital formation as a ratio of gross domestic product is significant and has a positive relationship with GDP growth rate. This conforms to a priori expectation. On the other hand, the other variables (BDEP\_GDP, MCAP\_GDP, DCPS\_GDP) against a priori show negative but significant relationship with GDP growth rate.

#### **Presentation of Granger Causality Tests.**

The results of Granger Causality tests are presented below in table 5;

**Table 5: Results of Granger causality Tests:**

Pairwise Granger Causality Tests			
Date: 08/07/17 Time: 12:45			
Sample: 1981 2011			
Lags: 2			
Null Hypothesis:	Obs	F-Statistic	Prob.
BDEP_GDP does not Granger Cause GDP_GR	29	0.89013	0.4237
GDP_GR does not Granger Cause BDEP_GDP		1.95318	0.0037
DCPS_GDP does not Granger Cause GDP_GR	29	1.29559	0.2922
GDP_GR does not Granger Cause DCPS_GDP		0.55262	0.0026
GFCF_GDP does not Granger Cause GDP_GR	29	1.17529	0.0259
GDP_GR does not Granger Cause GFCF_GDP		0.90605	0.0175
MCAP_GDP does not Granger Cause GDP_GR	29	0.92891	0.4087
GDP_GR does not Granger Cause MCAP_GDP		0.23906	0.0892

**Source:** Extracts from E-views9 software

Table 5 above shows that there is a significant uni-directional relationship between bank deposit as a ration of GDP and GDP growth rate with causality flowing from GDP growth rate to bank deposit. Also a uni-directional relationship exists between credit to the private sector and GDP growth rate. Causality flows from GDP growth rate to credit to the private sector. Still a uni-directional relationship (significant at 10%) is recorded between market capitalization and GDP growth rate, with causality flowing from GDP growth rate to market capitalization. On the other hand, significant bi-directional causality is observed between gross fixed capital formation and GDP growth rate, implying that they significantly promote and/or support themselves.

### Discussions, Conclusions and Recommendations

In this study, we examine the effects, nature and direction of possible long run relationship between financial development and economic growth in Nigeria. The financial development variables considered in the study are Gross Fixed Capital Formation as a ratio of GDP, **Market Capitalization to GDP**, Domestic Credit to Private Sector as a ratio of GDP and Ratio of bank deposits to GDP over the period 1981 to 2016. Gross Domestic Product Growth Rate is used to proxy economic growth. All the variables are integrated at their first differencing, that is integrated at order 1, which necessitates the test for long run relationship using Johansen's Cointegration technique. The results confirm the prevalence of significant long run relationship between variables of financial development and economic growth in Nigeria. Again, the ECM results reveal that all the financial development variables are significant in explaining variations in gross domestic product. However, all the variables except gross fixed capital formation though significantly related to GDP show sign that confirms negative

relationship with GDP. This might not be unconnected with high level of disconnect between the operations of the banking system and economic growth. The results of the pair-wise Granger Causality analysis bring to fore the following implications;

- A significant uni-directional relationship between bank deposit as a ration of GDP and GDP growth rate with causality flowing from GDP growth rate to bank deposit. Also a uni-directional relationship exists between credit to the private sector and GDP growth rate. Causality flows from GDP growth rate to credit to the private sector. Still a uni-directional relationship (significant at 10%) is recorded between market capitalization and GDP growth rate, with causality flowing from GDP growth rate to market capitalization. The implication of this is that the banking system and the stock market operations are largely sustained and driven by growth in GDP in Nigeria supporting the proponents of demanding following maxim. Similar result is confirmed by Nnamdi (2015).
- On the other hand, significant bi-directional causality is observed between gross fixed capital formation and GDP growth rate, implying that they significantly promote and/or support themselves. This also shows the importance of gross fixed capital in stimulating output generation in the country thereby ensuring sustainable growth of the economy.

In view of the results, implications and/or conclusions above, it is concluded that financial development especially the banking system and equity development in Nigeria is still driven and sustained by the economic growth. Consequently, it is recommended that Nigerian banking system and stock market operations should be repositioned to contribute effectively to economic growth. Credit extension should be rightly and efficiently channeled to the productive sector of the economy to boost output generation in the country.

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