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Financial Development and Economic Growth in Nigeria: A Reconsideration of Empirical Evidence.

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Abstract
This paper empirically investigated the impact of financial development on economic growth in Nigeria during the period 1986 – 2012.To achieve the purpose of this research, we estimated the real GDP as a function of the gross fixed capital formation, financial development (the ratio of private sector credits to GDP), liquidity ratio, and the interest rate. The methods used are: the Ordinary Least Squares (OLS) techniques, Augmented Dickey-Fuller unit root test, Johansen cointegration test, error correction technique, and the Granger causality test. The empirical results revealed that: all the variables used are integrated of the same order, I(1); there is evidence of the existence of a long run relationship among the variables used; the normalized cointegration coefficients revealed that financial development affects economic growth negatively in the long run. However, the short run impact of financial development on economic growth is positive. This goes to show that the finance-led growth hypothesis is valid in Nigeria only in the short run. There is also evidence of stability of both long run and short run relationship between the real GDP and financial development in Nigeria and the adjustment process to restore equilibrium after disturbance is effectively slow (6.50 percent of discrepancies is corrected in each period). Also, causality runs from economic growth to financial development and there is no bi-directional causality between growth and finance which lends support to the demand-leading hypothesis. Based on these findings, the study therefore recommends among other things that: the government should device a means to energise the micro finance sector so as to make credits available and accessible to micro entrepreneurs who are often deprived of credits by the conventional credit markets. This will help boost the private sector development and investment which is the engine of growth.
Keywords: Financial Development, Economic Growth, Unit Root, Cointegration, Causality.

1. Introduction

Conventional wisdom holds that economic growth cannot be possible without the combined role of investment, labour and financial development (Ndebbio, 2004). The role of money and finance in economic growth has been examined by economists from different dimensions and with varying degrees of emphasis (Ndebbio, 2004). As further noted by Ndebbio (2004), the writings of Gurley and Shaw (1967) and Goldsmith, (1969) stress the role of financial intermediation by both banks and non-banks in the saving-investment process, where money, whether defined narrowly or broadly, forms part of a wide spectrum of financial assets in the portfolio of wealth-holders. Thus, a well-developed financial system engenders technological innovation and economic growth through the provision of financial services and resources to entrepreneurs who have the highest probability of implementing innovative products and processes (Schumpeter, 1911 cited in Oriavwote and Eshienake, 2014). Long term capital is deemed crucial for economic development as evidenced by the positive relationship between long term capital and economic growth (Demirguc and Levine, 1996).

The Nigerian financial sector, like those of many other less developed countries, is highly regulated leading to financial disintermediation which retarded the growth of the economy (Adekunle et al, 2013). They also argued that the link between the financial sector and the growth of the economy has been weak, stressing that the real sector of the economy, most especially the high priority sectors which are also said to be the economic growth drivers are not effectively and efficiently serviced by the financial sector. As further revealed in Adekunle et al, (2013), the banks are declaring billions of profit but yet the real sector continues to weaken, thereby reducing the productivity level of the economy.

Consequently, a good number of studies have attempted the study of the relationship between financial development and economic growth. However, these studies continued to produce conflicting results, thus making the topic a great research burden. The impact of financial development on economic growth has generated heated debate among economic researchers especially in the recent times. While some studies such as Nieh, *et al*, (2009); and Shittu, (2012), opined that financial development drives economic growth, others Odhiambo, (2011); and Odeniran and Udeaja, (2010), have argued that economic growth drives financial

development. However, there are studies, which have argued that a bi-directional causality exists between financial development and economic growth with many of these studies applying causality test and error correction mechanism (see Shittu, 2012). This lack of consensus on the nature and the direction of the relationship between financial development and economic growth lend credence to the relevance of this study. Therefore, this study intends to make a modest contribution to the literatures. In particular, this study tests the validity of the so-called finance-led growth hypothesis as proposed by McKinnon, (1973) using the Nigerian data.

2. Literature Review

2.1 Conceptual – Theoretical Framework

One of the oldest debates in economics has remained the relationship between financial development and economic growth (Aye, 2013). Its root can be traced to Schumpter (1912), when he posits that finance is paramount for economic growth. However, Robinson (1952) argues that economic growth promotes financial development. Financial markets provide an economy with vital services comprising, for example, the management of risk and information, and the pooling and mobilization of savings (Gries et al., 2011). Theoretically, the linkage between finance and economic growth may take different forms. On the one hand, the financial sector may affect growth through the accumulation channel and the allocation channel. The accumulation channel emphasizes the finance-induced growth effects of physical and human capital accumulation (Pagano, 1993). The allocation channel focuses on the finance-induced efficiency gains in resource allocation that enhances growth (King and Levine, 1993).

Following these considerations, causality runs from finance to growth, hence the "supply-leading hypothesis". On the other hand, financial development may also be stimulated by economic growth. For instance, in a growing economy, the private sector may demand new financial instruments and an improved access to external finance. Financial activities then simply expand in step with general economic development (Robinson, 1952), positing the so-called "demand-following hypothesis". Additionally, finance and growth may be mutually dependent. The real sector may provide the financial system with the funds necessary to enable financial development, eventually allowing for a capitalization on financial economies of scale which in turn facilitates economic development (Berthelemy and Varoudakis, 1996).

The latter hypothesis postulates "bi-directional causality". Countries with better-developed financial systems are therefore expected to grow faster over long periods of time. Following more sceptical views (Lucas, 1988), noted that the financial and real sector may also be independent of each other, thereby naturally putting emphasis on other factors that may determine economic development (insignificant causation).

2.2 Empirical Literatures

Over the years, a good number of empirical studies have emerged on the relationship between financial development and economic growth following the pioneering work of Mckinnon, (1973). We shall briefly review some of these empirical studies especially those that have much relevance to our study. Studies such as Tokunbo, (2001); Dimitris, (2004); Ndebbio, (2004); Nnanna, (2004); Olofin and Udoma, (2006); Dwivedi, (2008); Gugelielmo et al, (2009); Nzotta and Okereke, (2009); Nieh et al, (2009); Osuji and Chigbu, (2009); Saibu et al, (2009); Adelakun, (2010); Odeniran and Udeaja, (2010); Samson and Elias, (2010); Muhammad and Hasan, (2011); Odhiambo, (2011); Maduka and Onwuka, (2012); Kuipou et al, (2012); Oriavwote and Eshenake, (2012); and Shittu, (2012) are reviewed in this work.

Adelakun, (2010) empirically investigated financial sector development and economic growth in Nigeria. The Ordinary Least Squares (OLS) was applied. The result showed that financial sector development has a substantial positive effect on economic growth in Nigeria. Dimitris (2004) investigate the long-run relationship between financial depth and economic growth, using panel data, unit root tests and co-integration and OLS techniques of analysis. The results show that there is no single equilibrium relation between financial depth, growth and auxiliary variables and that causality runs only from financial depth to economic growth. Gugelielmo et al (2009) reviewed the features of the banking and financial sector in ten new EU members and as well examined the relationship between financial development and economic growth in these countries by estimating a dynamic panel model over the period 1994-2007. The results show that the stock and credit market are still underdeveloped in these economies, and that their contribution to economic growth is limited owing to a lack of financial depth. Granger causality tests indicate that causality runs from financial development to economic growth but not in the opposite direction. Kuipou et al (2012) examined the relationship that exists between financial development and the growth rate per capita real GDP in CEMAC countries using panel data estimation techniques for the period 1980 -2006. The variables used are the liquidity rate and the growth rate of per capita

real GDP and the static panel model using OLS technique of analysis were applied. The results show that financial development negatively impacted on growth, while the Granger tests show that there exists unidirectional causality running from economic growth to financial development in the CEMAC economies. Maduka and Onwuka, (2012) investigated the long-run and short-run relationship between financial structure and economic growth using time series data. The study applied Johansen and Juselius (1990) maximum likelihood procedure while the error correction model was used to estimate the short-run dynamic coefficients. The results revealed that financial market structure has a negative and significant effect on the economic growth of Nigeria. Muhammad and Hasan (2011) conducted a comparative analysis of selected Asian country's (Pakistan, China and India) financial sector liberalization and its impact on macroeconomic performance, using co-integration tests. The results show that there is a long-run relationship between financial openness and macroeconomic performance of the three countries. Financial liberalization has a positive and significant impact on Pakistan economic growth, but has a negative and significant impact on China, while it has a positive but insignificant impact on India. Ndebbio (2004) studied the relationship between financial deepening and economic growth and development using selected sub-Saharan African countries for just one decade (from 1980-1989). He used M2/GDP and growth rate of per capita real money balances (PCRMB) to represent financial deepening and other control variables which affect economic growth such as the rate of inflation, human capital and the growth rate of labour as explanatory variables as against real per capita GDP which is the dependent variable. His regression results showed that financial deepening does positively affect per capita growth of output in these selected SSA countries, even though his parameter estimate of the variable of financial deepening was insignificant in one of his equations and he attributed this to shallow finance and the absence of well-functioning capital market in most SSA countries. Nnanna (2004) examined financial sector development and economic growth in Nigeria. Using the OLS, the study shows that financial sector development did not significantly affect per capita growth of output. Nzotta and Okereke, (2009) studied financial deepening and economic development in Nigeria. Using data covering the period between1986 and 2007, the study found that financial deepening did not support economic growth in Nigeria. Oriavwote and Eshenake (2012) examined the implications of financial development on economic growth in Nigeria, using time series data for the period of 1990-2011. The study applied the co-integration analysis with its error correction mechanism; the variables included Real Gross Domestic Product, Financial deepening (ratio of money supply to GDP, liquidity ratio, interest rate and the credit to private sector). The findings show that financial sector development has not significantly improved private sector development, while the capital base and liquidity ratio has improved the level of economic growth in Nigeria.

Osuji and Chigbu (2009) investigated the impact of financial development variables on economic growth in Nigeria, using time series data for the period 1960-2008. The research utilized co-integration analysis, causality test and error correction mechanism for analysis of the data; using variables such as money supply and credit to private sector and GDP. The results showed that money supply and credit to private sector positively impacted on economic growth in Nigeria and were as well co-integrated with GDP for the study period. The Granger test shows a bi-directional causality existing between GDP and all the explanatory variables. Odeniran (2010) researched on the relationship between the financial sector development and economic growth in Nigeria, using time series data for the period of 1960-2009. Using the Granger causality tests; the variables used were ratio of broad money stock to GDP, growth in net domestic credit to GDP, used to proxy financial development. The results showed a bi-directional causality between financial development and economic growth. Olofin and Udoma (2006) investigated the role of financial structure in economic development of Nigeria using aggregate annual data from 1970 to 2005. Three stage least square estimation techniques were adopted while counterfactual policy simulations were conducted. The findings show that financial structure has no independent effect on economic growth. Samson and Elias (2010) studied financial sector development and economic growth in Nigeria. Their study covered the period between 1960 and 2009. They tested the competing finance-growth nexus hypothesis using Granger causality test in a VAR framework. They found that various measures of financial development granger cause output even at 1 percent level of significance with the exception of ratio of broad money to GDP. They also found that net domestic credit is equally driven by growth in output, indicating unidirectional causality. Saibu et al (2009) investigates whether changes in the financial structure or the overall financial systems explain economic growth dynamics in Nigeria using vector error correction model. The result shows that changes in financial structure in Nigeria have no significant consequential effects on its real growth rate. The result shows further that despite the negative effect of financial market on economic growth, financial market has positive effect on stock market development hence suggesting that neither the financial market nor stock market based system is dominant factor on economic growth in Nigeria. Shittu (2012) investigated the impact of financial intermediation on economic growth in Nigeria using co-integration tests and error correction techniques. The results show that financial intermediation has a significant impact on economic growth.

Tokunbo (2001) examined the impact of stock market on economic growth of Nigeria, using time series data from 1980 – 2000. The results show that there is a positive relationship between growth and all the stock market development variables used.

3. Methodology

3.1 Analytical Framework

The analytical framework of this study is built on the neoclassical model of economic growth which stresses capital, labour and technological progress as the main determinants of economic growth. According to the neoclassical model, the relationship between economic growth and these variables is expressed in the form of a production function, thus:

$$Y = f(K, L, T) \quad \text{- -} \; (3.1).$$

Where Y = gross domestic products (GDP),
K = stock of capital,
L = number of labour force and,
T = technological progress.

It is instructive to state here that while we implement the model above, our focus is restricted to technological progress in the form of financial development indicators.

3.2 Model Specification

The empirical analysis of this study is based on the augmented neoclassical model of economic growth as established in the analytical framework. The augmented econometric model specified the real GDP (RGDP) as a function of gross fixed capital formation (GCF), financial development (FID), liquidity ratio (LDR), and the interest rates (INT).

Following from the theoretical and empirical underpinning of this study, for a successful examination of the relative impact of financial development on economic growth in Nigeria, we therefore, explicitly specify our model as:

$$RGDP = f(GCF, FID, LDR, INT) \quad \text{- - - - - - - - - - - - - - - - - - -} \; (3.2).$$

Where RGDP = real gross domestic products (proxy for economic growth),
GCF = gross fixed capital formation (proxy for the stock of capital),
FID = financial development (measured as the ratio of private sector credit to GDP),
LDR = liquidity ratio,
INT = interest rates.

This can specifically be expressed in an explicitly econometric model as:

$$RGDP = \beta_0 + \beta_1 GCF + \beta_2 FID + \beta_3 LDR + \beta_4 INT + \mu \text{ - - - - -} \; (3.3)$$

Where β_0 = constant intercept term,
$\beta_1 - \beta_4$ = parameters,
μ = stochastic error term.

Adopting a semi-log specification, taking natural logarithm of variables in millions to obtain realistic results, we have:

$$lnRGDP = \beta_0 + \beta_1 lnGCF + \beta_2 FID + \beta_3 LDR + \beta_4 INT + \mu \text{ - - - - -} \; (3.4)$$

Where ln = natural logarithm.

3.2.1 A priori Specification: $\beta_1 > 0$, $\beta_2 > 0$, $\beta_3 > 0$, $\beta_4 < 0$.

3.3 Data Source

Annually time series data were extensively utilized to investigate the relative impact of financial development on economic growth in Nigeria. All data patterning to the chosen variables were obtained from the CBN statistical bulletin over the period 1986 – 2012. The choice of this 28 year data-covering period is purposely conceived to

concisely reflect the periods within which there was financial liberalisation in Nigeria which came under the auspices of the Structural Adjustment Programme (SAP).

3.4 Estimation Procedure

This paper employs the Ordinary Least Squares (OLS), cointegration and error correction techniques. These methods are believed to overcome the problem of spurious regression while at the same time provide consistent and good estimates of both long run and short run coefficients that satisfy the properties of the classical regression method. The techniques are also unique and preferred to the traditional adaptive expectation and partial adjustment models because the latter are associated with the problems of spurious regression, inconsistent, and indistinct short run and long run elasticity estimates.

The first stage of cointegration and error correction technique is the test for unit root. The whole analysis then proceeds from it. The followings are the methods people use in testing for the stationarity of economic variables: Dickey-Fuller (DF) test; the Augmented Dickey-Fuller (ADF) test; Philip-Person (PP) test; and the Sargan-Bhagara cointegration Regression Durbin-Watson (CDRW) test. This study uses the Augmented Dickey-Fuller (ADF) test.

The aim of the cointegration analysis is to establish long run equilibrium relationship between variables. In the Engle-Granger cointegration analysis, variables of consideration are said to be cointegrated if in the regression of one variable on the others, their residuals as the proxy for their combination are integrated less than original variable. Example, if the variables are integrated of order one I(1), then, their residuals should be integrated of order zero, I(0). Also, cointegration exists among variables if they are integrated of the same level. The implication of this analysis is that deviation or drift may occur between the variables, but this is temporary as equilibrium holds in the long run for them. When the cointegration of these variables is confirmed, it portends that a non-spurious long run relationship exist. When this is combined with the error correction model (ECM), consistent estimates of both long run and short run coefficients is evident. This research work employs the Johansen, (1988) reduced rank procedure in cointegration analysis.

The Error correction models (ECM) represent an alternative way of presenting long run equilibrium relationship between variables. It shows the dynamic error analysis of the cointegrated variables. Thus, in this paper, the first step to the ECM analysis is the estimation of the static real GDP function given by equation (3.4). Upon rejection of the null hypothesis of no cointegration, the lagged residuals from the cointegration equation are imposed as the error correction term ECM(-1) in an error correction equation. This is given thus;

$$\Delta lnRGDP = \beta_0 + \beta_1 \Delta lnGCF + \beta_2 \Delta FID + \beta_3 \Delta LDR + \beta_4 \Delta INT + \delta ECM(-1) + \varepsilon \text{ - - - - - - (3.5).}$$

Where Δ is the difference operator; ECM(-1) is the vector of stationary residuals from the cointegration equation (3.4); δ is the coefficient of error correction term measuring the speed of adjustment from one period to another; ε is a pure white noise error term.

It is also the aim of this paper to determine the causal relationship between financial development and economic growth (RGDP). To do this, the Granger causality test will be employed. The null hypothesis underlying the Granger causality test is that the variable under consideration does not Granger-cause the other while the alternative is that it Granger-causes it. Thus, in this paper, our decision will be based on the F-statistic and its associated p-values at 5% level of significance.

4. Empirical Results and Discussion

4.1 Unit Root Testing

It is necessary to verify the stationarity properties of variables included prior to attempting the multivariate cointegration analysis. To determine the order of integration of these variables, the ADF unit root test has been carried out on levels and differences of the relevant variables. The specification of the ADF equation assumes intercept and no trend. The null hypothesis underlying unit root testing is that the variable under investigation has a unit root and the alternative is that it does not. The ADF unit root results are reported in table 4.1 below. The results show that all the variables have unit root at levels and are stationary at first differences, implying that they are integrated of the same order, I(1).

Table 4.1 Results of ADF Unit Root Tests

Variable	ADF Stat	Order of Integration
LRGDP	-2.960819*	I(1)
LGCF	-4.882492**	I(1)
FID	-5.069235**	I(1)
LDR	-4.488519**	I(1)
INT	-6.923783**	I(1)

NB: **(*) implies significant at 1%(5%) levels.
Source: Author's Computation.

4.2 Cointegration Test

The results from the unit root testing imply that all the variables are non-stationary and are integrated of the same order, I(1), giving rise to the possibility of the existence of a long run relationship among the included variables. To identify the long run relationship among the included variables, the Johansen (1988) multiple cointegration test has been employed by using a lag length of one year suggested by Schwarz Information Criterion (SIC) criteria.

Table 4.2 Results from Cointegration Tests

H_0	H_1	Trace Statistic	5% Critical Value
r = 0	r > 0	110.7507*	95.75366
r ≤ 1	r > 1	76.61479*	69.81889
r ≤ 2	r > 2	44.40937	47.85613
r ≤ 3	r > 3	24.45995	29.79707
r ≤ 4	r > 4	3.311604	3.841466

NB: * denotes rejection of the null hypothesis at 5% level.
Source: Author's Computation.

The results given in table 4.2 denote the trace statistics and their associated critical values at 5% level. These test statistics help evaluate the null hypothesis of r = 0, against the general alternatives of r = 1, 2, 3, 4 or 5. These tests make us accept that there are two cointegrating equations since the trace statistics do not lead to the rejection of the null hypothesis of r ≤ 2. Based on these results, it can be argued that a long run relationship exists among LRGDP, LGCF, FID, LDR and INT.

It is a standard practice to normalize the cointegrating vectors with respect to the variables of interest to get a better interpretation. Since we are interested in examining the effect of financial development on economic growth in Nigeria, the cointegrating vector is normalized with respect to LRGDP. The normalized cointegrating vector is reported in table 4.3.

Table 4.3 Normalized Cointegrating Vector

	LRGDP	LGCF	FID	LDR	INT
LRGDP	1.0000	-0.8058	0.0982	-0.0407	0.0204

We can now write the above cointegrating vector in the form of an equation as shown below:
LRGDP = 0.8058LGCF – 0.0982FID + 0.0407LDR – 0.0204INT

This equation shows that the gross fixed capital formation (LGCF), and liquidity ratio (LDR) affect the real GDP positively in the long run, whereas financial development (FID) and the interest rate (INT) have negative impact on the real GDP in the long run. The individual coefficients represent the effect of the explanatory variables on the real GDP. The negative sign associated with the financial development variable (the ratio of private sector credit to GDP) suggests that increase in financial development leads to decrease in economic growth in the long run. The positive coefficients of liquidity ratio show that increase in it increases the real GDP in the long run. The positive coefficient of the gross fixed capital formation shows that increase in it leads to increase in the real GDP in the long run. The interest rate has negative impact on the real GDP in the long run, thus increase in the cost of credit discourages investment and hence retards economic growth in the long run.

4.3 Error Correction Model

Having confirmed the existence of a long run relationship between variables of interest whose order of integration have been determined, in this section, an error correction model is formulated. The error correction model represents an alternative way of presenting long run equilibrium relationship between variables. It shows the dynamic error analysis of the cointegrated variables. The results of the error correction model are reported in table 4.4. Here, the model was regressed on the first differences of all variables plus the lagged value of the residuals from the cointegrating equation.

Table 4.4 OLS Error Correction Regression Results

	Constant	ΔLGCF	ΔFID	ΔLDR	ΔINT	ECM(-1)
Coeff.	0.0604**	0.0594**	0.0112*	0.0034*	-0.0052*	-0.0650**
t-stat.	(6.943)	(3.026)	(2.091)	(2.650)	(-2.709)	(-3.204)
prob.	[0.0000]	[0.0047]	[0.0347]	[0.0237]	[0.0158]	[0.0062]

NB: **(*) implies significant at 1%(5%) levels.

Source: Author's Computation.

The results in table 4.4 denote the OLS error correction regression. The differenced variables' coefficients represent short run effect of these variables on the dependent variable. The results in table 4.4 show that our model has a high coefficient of determination. This can be seen from the R-squared of about 80 percent and the adjusted R-squared of about 75 percent. The R-squared measures the percentage of variations in the dependent variable that was accounted for by variations in the explanatory variables. Thus, it can be argued that our data is well fitted in our model.

The value of the F-statistic is 20.79847 and its associated probability value is 0.000007 which is less than 1%. This implies that our overall regression model is statistically significant at 1% level. Thus, all the explanatory variables jointly explain variations in the dependent variable (LRGDP).

The estimated coefficients of the explanatory variables show that all the explanatory variables conform to a priori specification and are all individually statistically significant at the conventional 1% or 5% levels. This implies that increase in gross fixed capital formation; financial development; and liquidity ratio will lead to increase in the level of real GDP in Nigeria. However, increase in the interest rate leads to decrease in the level of real GDP in Nigeria. This means that financial development have played active role in economic growth in Nigeria during the period covered by the study.

The value of the Durbin-Watson statistic is 1.874322 and is close to 2. It is known that when the value of Durbin-Watson is 2, there is no autocorrelation in the residuals; when DW approaches 0, there is evidence of positive autocorrelation (first order autocorrelation) in the residuals. However, when DW approaches 4, there is problem of negative autocorrelation (2^{nd} order autocorrelation) in the residuals. With this in mind, we can safely argue that our model is not plagued by autocorrelation of any order. This implies that our model is reliable for making inferences.

The coefficient of the error correction term of about -0.0650 is statistically significant at 1% level with the expected negative sign. A significant error term with the right sign indicates a strong feedback effect of deviation of the real GDP from its long run growth path. The value of the coefficient of the error term represents the speed of adjustment from one period to another. The coefficient -0.0650 of the error term shows that about 6.50 percent of the discrepancies between the actual and the equilibrium value of the real GDP is corrected in each period. It is worthy of mention that this speed of adjustment is very low, meaning that the adjustment process to restore equilibrium after disturbance is effectively slow.

4.5 Causality Test

It is the aim of this study is to determine the causal relationship between financial development and economic growth in Nigeria. In other words, is it the financial development that causes economic growth? Hence, the supply-leading hypothesis. Or is it economic growth that causes financial development? Hence, the demand-leading hypothesis. To do this, the Granger causality test was carried out between the financial development variables and the real GDP in Nigeria. The null hypothesis underlying the Granger causality test is that the variable under consideration does not Granger-cause the other while the alternative is that it Granger-causes it. The results of the Granger causality test are reported in table 4.5 below.

Table 4.5 Granger Causality Test

Direction of Causality	F-statistic	Prob.	Decision
LGCF → LRGDP	8.81590*	0.0018	Reject H_0
LRGDP → LGCF	2.01770	0.1591	Do not reject H_0
FID → LRGDP	0.08145	0.9221	Do not reject H_0
LRGDP → FID	5.09186*	0.0163	Reject H_0
LDR → LRGDP	5.63362*	0.0115	Reject H_0
LRGDP → LDR	0.24552	0.7848	Do not reject H_0
INT → LRGDP	1.40251	0.2691	Do not reject H_0
LRGDP → INT	4.49725	0.0244	Reject H_0

NB: * means rejection of the null hypothesis of non-Granger causality.
Source: Author's Computation.

The results in table 4.5 show the Granger causality test between financial development and economic growth in Nigeria. It is instructive to point out here that the cointegration test carried out earlier indicate the existence of a long run relationship between variables but say nothing about the direction of the causal relationship. Execution of the Granger causality test makes it possible for us to determine the direction of the Granger causality. In the Granger causality approach, causality exists if the F-statistic is statistically significant given its associated probability value. Thus, in this study, causality is established up till 5% level.

The results reported in table 4.5 revealed that causality runs from gross fixed capital formation to economic growth and not in reverse direction. There is evidence of unidirectional causality running from economic growth to financial development and no bi-directional causality exists between them. Also, causality runs from liquidity ratio to economic growth and from economic growth to interest rate.

In general, we can safely conclude that there is evidence of a long run unidirectional causality running from economic growth to financial development in Nigeria. This result lends support to the demand-leading hypothesis in Nigeria and is consistent with the findings of Odhiambo, (2011) and Odeniran and Udeaja, (2010).

5. Conclusion

This study investigated the effect of financial development on economic growth in Nigeria during the period 1986 – 2012. Following the objectives of this study, we estimated the real GDP as a function of gross fixed capital formation; financial development (ratio of private sector credits to GDP); liquidity ratio; and the interest rate using Nigeria data.

The empirical results confirmed the existence of a long run relationship between the real GDP and the aforementioned explanatory variables. There is also evidence of stability of both long run and short run real GDP function in relation to these variables. The study therefore revealed that financial development has played a significant role in economic growth in Nigeria during the period covered by the study. Causality runs from economic growth to financial development during the period covered and there is no bi-directional causality between them.

The implication of these results from the stand point of policy is that the government should device a means to energise the micro finance sector so as to make credits available and accessible to the micro entrepreneurs who are often deprived of credit by the conventional credit markets. This will help boost the private sector development and investment which is the engine of growth.

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