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Estimating the Causal Relationship Between Financial Development and Economic Growth in Nigeria: Variance Error Decomposition

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Abstract: This study is an estimation of the relationship between financial development and economic growth in Nigeria covering the period from 1970 – 2012. This study attempts to include all variables that measure financial development sector and explain their effects on economic growth proxied by real GDP. The study used standard econometric method of VECM to test the long run relationship and direction of causality among the variables of interest. The results show that all the variables except RGDP and RINV have unit root, however, they became stationary at first difference and they were integrated of order one I(1) which implies that there exist a long run relationship between financial development and economic growth in Nigeria. The result also shows a mutual independent relationship between financial development and economic growth. This implies that given the period of the study, financial development and economic output grow independently. The study reveals that the independent variables of credit to private sector, domestic saving and foreign direct investment (FDI) accounted about 65 per cent variation of real GDP in Nigeria. Foreign direct investment (FDI) play significant roles in economic growth in Nigeria. Also, the shock in RGDP is attributed to about 8.5 per cent of its own shock and shocks due to other variable in the model. There is need for the government to strengthen its financial sector regulations to ensure that financial institutions increase their credits to private sector so as to boost investment and output.

Key words: Economic Growth · Financial Development · Granger Causality · Nigeria

INTRODUCTION

The plan to achieving economic growth has preoccupied the policy thrust of all countries of the world. Nigeria as a developing country suffers the consequences of low level of economic activities evidenced by low productivity. Researchers discern strongly that financial sector development holds significantly the key to economic growth. Schumpeter [1], McKinnon [2] and Shaw [3] in what is termed Schumpeter and Mckinnon-Shaw hypothesis introduced finance variable into the growth factors. Since, factors of capital, labour and technology are the major ingredients that lubricate the wheels of economic growth therefore adequate quantum of finance is needed to procure these resources to increase the output of goods and services.. Thus, improvement on them propels economic activities. Studies by Romar [4] and Lukas [5], on endogenous growth model recognized the role of human capital development and technological development as propeller of economic growth.

Economic theories espouse a positive correlation between financial development and economic growth. Shaw [3], Mckinnon [2] Levine and Zervos [6], Goldsmith [7], Bekaert *et al*.[8], in a finance-growth hypothesis show convincing evidence of positive correlation between finance development and economic growth.

In Nigeria, empirical studies of Adelakun [9], Odeniran and Udeaja [10], Nkoro and Uko [11], Chigbuh and Osuji [12] and Anieken and Sikiru [13], find evidence of positive relationship between financial development and economic growth.

However, some other studies report mixed and contradictory results on the nature of correlation. Some studies find negative relationship between finance development and economic growth. Deficiency in bank credit allocation to private sector negatively affects economic growth [14],[15].

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Furthermore, conflicts exist among researchers in this field on the direction of causality of the variables under study; studies of Bangake and Eggoh [16], Chang, Candill [17] echo a pass through from financial development to economic growth. On the other hand, the studies of Candida [18]; Aye [19]; Checheti [20] and Blanco [21], show that economic growth spurs financial development. Besides, Hassan and Yu [22] find a two-way causation between financial development and economic growth.

Empirical studies in recent times have identified a two-way causation between financial development and economic growth in Nigeria. Nkoro and Uko [11] in a study of the direction causality between financial development and economic growth of Nigeria found that financial development impacts positively on economic growth. Chigbuh and Osuji, [12] in a similar study on Nigeria identify a two-way causation of the variables under study. This suggests that economic growth accelerates financial development as finance propels economic growth. Increase in the production of goods and services through advancement in technology pushes-up productive resources which translates and makes available financial resources to the economy. Given the increase in investible funds, productive investments as well as economic activities certainly will increase.

Nigeria's financial sector is still evolving but profoundly sustains the role of saving mobilization from the surplus spending units and canalizing same to the deficit spending units for investment purposes. The reward of efficient and effective financial system is increase in output of the economy through increase in investment. The economy needs a sustained boost in economic activities to further create employment, increase in income and rise in aggregate demand of goods and services.

Despite numerous financial sector reforms since independence, the Nigerian economy as well as the financial sector still grapples with growth. The financial development indicators are uncorrelated with economic growth. For instance, in 1970, 1973, 1977 the GDP stood at 11 per cent, 7 per cent and 8 percent and declined negatively to -7 per cent, -2 per cent and -1 per cent in 1978, 1982 and 1984. It has fluctuated except in 2002, 2003 and 2004 when it marginally increased from 10 per cent, 10.5 per cent and 10.9 per cent. Inspite of the policy of financial reforms the GDP growth rate of Nigeria could not be sustained, rather it declined to 6.5 per cent and 5.9 per cent in 2007 and 2008 respectively. It dropped again from 7.9 per cent to 7.4 per cent in 2010 and 2011 regardless of development of financial indices.

Heoretical Literature: Economic growth is the quantitative increase in a country's output of goods and services. It refers to sustainable increase in the output of goods and services. It reflects on the material well being of the people of a country. It is usually measured by the rate of change of real gross domestic product (GDP). Economic growth is important because it measures the welfare and quality of lives of the people. Unarguable as a nation's economic growth increases the welfare of the people is improved (better health-care, higher nutrition, better housing and quality education). More so, higher levels of per capital income translate to higher aggregate demand for goods and services (Mankiw, 2007)[23]. Economic growth is determined by the quantity and quality of natural endowment, capital, technology and efficiency as well as cultural factors [24].

Review of Theories: Theoretical work in this field is limited. However, attempt has been made in this study to x-ray and review some of the theories in this field to give theoretical support to the study.

Schumpter Theory of Finance Growth: The correlation of financial development and economic growth has been copiously discussed by modern economists. Bagehot [25], Schumpeter [1] and Goldsmith [7] were the early economists that advanced argument on the positive nexus between financial development and economic growth. They recognized the intermediation role of the financial sector as a channel in providing investible funds for economic growth. They argue that financial provisions were critical to technological progress as well as industrialization. This is plausible because effective direction and utilization of funds for the acquisition of new technology to replace inefficient techniques of production is germane for economic growth.

Candida [18] identified the channels through which the financial sector can enhance economic growth. First the financial sector mobilizes fund from surplus spending unit and canalizes it to deficit spending unit for investment purpose. Apart from domestic saving mobilization function, the financial sector offers access to international inflow of funds, to the domestic economy; this is done through the auspices of foreign direct investment (FDI), direct remittance and foreign capital inflows. Providing adequate regulatory framework that assures proper allocation of funds to productive sectors and mitigating risks associated with Loans and advance uncertainties will also facilitate financial transmissions.

Mackinnon-Shaw Hypothesis of Financial Repression and Economic Growth: The works of Shaw [3], Mackinnon [2] referred to as Mackinnon- Shaw financial Liberation hypothesis argued that financial repression stifles economic growth. Lack of investible funds constraints access to physical assets and inadequate acquisition of new technologies stagnate economic growth.

Financial repression refers to saving apathy by the surplus spending unit caused by low interest rate. Low level of interest on saving discourages savers, thus reduces the volume of loanable funds for investors and reduces the acquisition of new and better production equipment for increase in output of goods and services and consequently economic growth whereas, higher interest rate encourages savers to substitute the acquisition of physical asset (gold, diamond) for saving in brokerage forms. In effect a sizeable loanable funds required to sustain the financial requirement of the investing is created to give the needed technological impetus for economic growth.

Levine and Zervos, [26] supply – leading hypothesis. The theory holds that causality runs from finance to economic growth. The theory also holds that financial development impacts positively on the economy. Improvements in financial sector and financial system indicators stir-up economic activities. This is achieved through increased acquisition and accumulation of inventories, new techniques of production, etc that expand output of goods and services. Furthermore, efficient allocation of capital and attractive saving instruments stimulates mobilization of funds from surplus unit to deficit spending units.

Beck, [27] and Kuznets, [28] demand following hypothesis. This theory posits a uni-directional link between financial development and economic growth. The relationship runs from economic growth to financial development. Finance may expand given increases in economic activities. Economic growth spurs financial development through greater demand for financial services.

Mutual Dependency Hypothesis: Lewis (1995) postulates a bi-directional causality between financial development and economic growth. There is a feed- back effect between finance and growth. This implies that the development of the financial market indicators as a consequence of economic growth would in turn accelerate real growth ceteris parebus. The real sector may muster sufficient funds through household and business firms' savings that can deepen the financial sector. In the same vein, financial expansion deepens economic growth through efficient allocation and low risk investible funds to investment units.

Mutual independent hypothesis [29]. The theory posits that finance and economic growth may be mutually independent. Increase in finance may not propel economic growth and increase in activities in the real sector would also not induce financial development. Thus, there is no causality between finance and economic growth.

Neo – Keynesian Growth Theory: The Neo – Keynesian growth theory was modified by the works of Solow 1956. This theory is based on micro economic analysis of Cobb-Douglas production function which specified that capital and labour interact to bring about changes in output performance.

The Cobb-Douglas production function is specified thus:

$$Q = k^{\alpha} (AL)^{1-\hat{a}}$$

Where Q=output
K= Capital
L= Labour
B= the output elasticity of capital.

This model has been modified by Solow-Swan, [31] by introducing technology (technical progress) into the original model (Cobb- Douglas), the inclusion of technology to labour and capital according to Solo- Swan in what is needed to bring about change in output, holding technological progress constant and labor force growing at a steady state. It assumes that in the long run, increases in per labor; output can be maintained only by growth in productivity.

Endogenous growth model is an off shoot and a modified version of the Solow-Swan new classical model, Romar [4], Lukas, [5] popularized the endogenous growth model. They de-emphasized the influence of the physical input of the labor, capital and technological progress on productivity but recognized that growth can take place without increase in exogenous variables of physical capital and capital accumulation. Growth is seen to be self sustaining since it cannot be inhibited by capital accumulation. However, the theory adduced that government policy framework (Financial Sector reforms, tax action subsidy and grants, regulatory framework) also have direct effects on output. Government policy can distort or improve output. For instance, increase in tax rate

on manufacturing output definitely will result to increase in production cost, ultimately reduces output of manufactured goods. On the other increase in incentive in the form of subsidies to firms translates to increase in investment and long run economic growth if sustained. Thus, endogenous growth model offers modern governments the theoretical space to evaluate the roles of institutional frame work such as financial sector reforms (bail out, special credit allocations, interest rate policies, micro credit policy) laws and regulations to increase the speed of economic growth.

This study is anchored on the endogenous growth model. The model is unique and suitable in this work because it assumes that the variable and financial development and economic growth are complementary to each other, financial development can increase the speed of economic growth; also, increase the economic activities, gear-up financial development. This theoretical manifestation and evidence is the crux of the debate among economists on the direction of causality between financial development and economic growth.

Developed Country Empirical Analysis: The effectiveness and efficiency of a financial system and its impact on economic growth varies from country to country and most importantly from developed to developing economy. More developed financial systems are always common with more developed economy and vice versa. Recent empirical studies on developed countries for cross-country investigation by Levine and Zervos [26] employed different econometric estimation technique with different data set for each work to evaluate the link between financial development and economic growth. Each research using different estimation method produces significant and remarkable results. Since, developed countries already have developed and stable financial system, their result showed strong positive relationship between financial development and economic growth. A well developed financial system remains a catalyst for a sustained economic growth.

In a single country empirical analysis of Brirtish economy Greenwood and Javoniz [32], Lewis [33], Boulila and Trabelsi, [34], use ordinary least square (OLS) econometric estimation method and found a positive relationship between financial development and economic growth, Bagehot, [25] also finds a positive relationship between financial development and economic growth using ordinary least square (OLS) technique of estimation in a single country study of British economy.

Developing Country Empirical Study: Empirical studies on developing countries by Mckinnon-Shaw [2],[3] in a separate and single study of South-east Asia, India and Pakistan finds a link between financial repression and economic growth, low saving shrinks economic growth; low level of financial development impacts negatively on economic growth. In a cross-country study of Lain American countries Boulila and Trabelsi, [35] uses data set ranging from 1960-2003 applying OLS estimation technique observes that instability in financial system and rapid liberalization affects the empirical relationship between financial development and economic growth, but note that efficient and effective financial sector produces a positive and strong nexus between financial developments and economic growth.

In the same Vein Dabos and Gantman, [36] studied 77 developing countries for a single period of 20 years (1960-1989) examine the link between financial development and economic growth. The study employs ordinary least square (OLS) estimation technique with four financial development indicators such as broad money assets in ratio to growth domestic product M2/GDP domestic money assets in deposit money banks divided by domestic assets of both deposit money bank and the central bank, private sector credits divided by GDP PSC/GDP, domestic credit to private sector divided by aggregate domestic credit, as explanatory variables. The study creates four growth indicators as the dependent variables. These include proxies such as average rate of growth in per capita GDP, average rate of growth in the capital stock of gross domestic investment. The research finds strong positive relationship between financial development variables and economic growth.

Ayadi *et al*. [14] study explores the relationship between financial development and economic growth using a sample of northern and Mediterranean countries within the period 1985 – 2009. They employed panel data analysis and the result shows that credit to private sector and bank deposits are negatively associated with growth. The result also reveals that domestic investment and foreign direct investment (FDI) significantly contribute to economic growth. Venancio, [15] study of the relationship between financial development and economic growth, finds negative correlation between financial indicators and economic growth in developing countries who suffer inefficient credit allocations. The study employed modified OLS and the research covered the period of 1980 – 2011 and 2000 – 2011 for 17 and 19 countries respectively. This shows that some financial development indications are negatively related to growth given his findings.

Bangake and Eggoh, [16] deploy panel data methods and Granger causality on 71 countries for developed and developing countries within the period 1960 – 2004. The result shows bi-directional causality between financial development and economic growth across country.

Anieken and Sikiru, [13] in a study of banking sector credit and economic growth in Nigeria for the period 1970 – 2008 deploys two-stage least square estimation technique finds evidence of positive relationship between financial development and growth. The study also finds a uni-directional relationship; causality runs from growth to finance development. Also, Aye [19], in an empirical study of the causal relationship between financial depending, economic growth and poverty in Nigeria. The study covers the period 1960 – 2011. The technique of estimation is Johansen cointegration, vector error correction model and Granger causality test. The result shows evidence of unidirectional causality between economic growth and financial development, causality runs from growth to poverty conditional and finance.

Chigbuh and Osuji, [12] investigated the direction of causality between financial and economic development in Nigeria for the period 1960 and 2008. The work adopts Granger causality test statistics, cointegration and error correction model on time series data. From the report, there is evidence bi-directional causality between finance and growth. There is mutual dependence of the variables of finance development and economic growth. Also, Odeniran and Udeaja, [10] in a study of financial sector development and economic growth in Nigeria from 1960 – 2009 uses a Granger causality test statistics to determine the direction of causality. The result shows bi-directional causality between some of the proxies of financial development and economic growth. There is empirical evidence of feed-back effect of finance and growth.

Methodology: The study is a time series data analysis of a single country limited to Nigeria. It uses ex-post factor design which explores cause and effect relationships, where data cannot be manipulated to the desire of the researcher. The data set used for the work covers the period 1970-2012. The data is culled from CBN statistical bulletin of 2012, Vol. 22 and CBN annual report of 2012. In this study the dependent variable is GDP, which is used as proxy for economic growth, whereas the independent variables are the financial development indicators derived and suitable for a shallow financial sector as mentioned in the theoretical Literature and supported by endogenous growth model. The variables are the ratio of broad money to GDP (M_2/GDP); the ratio of domestic investment to GDP (INV/GDP), the ratio of private sector credit to GDP (PSC/GDP), the ratio of domestic saving to GDP (DS/GDP), as well as the error term (Ut).

RESULTS AND DISCUSSIONS

Unit Root: Data for the period of the study 1970-2012 was subjected to unit proof test, unit root test is a pre-test used to evaluate the stationarity of the series (dependant and independent variables) and the series is expected to possess the property of mean reversion (the data manifesting the characteristics of constant mean and constant variance). The Augmented Dickey Fuller (ADF) test statistics (Dickey and Fuller 1981) and Philip Perron were used to test the stationarity status of the series, the test results are presented in table 4.1, all the variables are stationary at first difference I (1) at 5% level except RGDP and RDINV that are stationary at level I(0). Consequently, a test of co integration was conducted to test whether there exist a long-run relationship between the variables understudy. This implies that if two or more time series are expressed to form an equilibrium relationship over the long run, even when the series are non- stationary, there will nevertheless move closely together overtime such that the difference between them will be stationary.

Table 4.1: Unit roots test

ADF t-statistics			
Variable	Levels	1st difference	Order of Integration
RGDP	-6.5744**		I (1)
INV	-5.7436**		I (1)
DS	-1.4383	-5.8395**	I (1)
PSC	-1.3448	-5.2667**	I (1)
M_2	-1.8455	-6.2660**	I (1)
FDI	-3.2774	-9.3234**	I (1)
1% -4.1923	5% -3.5207	10% -3.1912	

Source: Researchers computation.

Table 4.2:

PP t-statistics			
Variable	Levels	1st difference	Order of Integration
RGDP	-37.2184		I (1)
INV		-4.1985**	I (1)
DS		-5.8395**	I (1)
PSC		-5.1038	I (1)
M_2		-6.2660	I (1)
FDI		-10.4785	I (1)
1% -4.1985	5% -3.5236	10% -3.1929	

Cointegration Test: The Johansen's tests were conducted to test for co integration. The results of the co integration test are extracted and presented in table 3.

Table 4.3: Johansen co integration/ Unit roof ratio statistics for RGDP, RINV, RDS, RPSC, RFDI.

Trace Test K=2				*Maximum Eigen values k=2*			
Ho	Hi	λ trace	Critical value (5%)	Ho	Hi	λ max	Critical values (5%)
r ≤ 0	r > 0	101.40	95.75	r ≤ 0	r > 0	39.30	40.07
r ≤ 1	r > 1	62.10	69.81	r ≤ 1	r > 1	26.37	33.87
r ≤ 2	r> 2	35.72	47.85	r ≤ 2	r> 2	20.17	27.58
r ≤ 3	r > 3	15.54	29.79	r ≤ 3	r > 3	9.41	21.13
r ≤ 4	r > 4	6.13	15.49	r ≤ 4	r > 4	6.05	14.26
r ≤ 5	r > 5	0.07	3.84	r ≤ 5	r > 5	0.07	3.84

r represents number of co integrating vectors and k represents the number of lags in the unrestricted VAR model.

From results in table 3, the test statistics indicate that the hypothesis of cointegration, Ho, among the variable can be rejected. The results reveal that three cointegrating vectors exist among the variables of interest. Since the variables are cointegrated, there is therefore, a long-run relationship among the variables. The short-run dynamics of the model was determined by using the residuals from the cointegrating regression as Error correction model (ECM). The ECM was determined first from over parameterized model. This was tested until we arrived at a preferred parsimonious model by dropping insignificant variables, Here, variables with t-statistics were dropped below.

The parsimonious result which is simplified and interpretable result shows R^2 value of 0.65, which means that all the variables can explain about 65 percent of economic growth, F-statistics 2470($P > 0.05$) shows that the variables are jointly significant and the Durbin-Watson value is approximately 1.8. This implies that the model conforms with the OLS assumption of no autocorrelation. The results of overparameterized and parsimonious model are represented in table 4.4 and 4.5 below.

The parsimonious model reveals the significance of the individual variables. it is observed that real domestic investment ratio to GDP, RINV/GDP, ratio of real credit to private sector to GDP (RPSC/GDP) and domestic saving ratio to GDP (RDMS/GDP) are indicators and determinants of financial development in Nigeria for the period of this study. All the other variables are correctly signed, therefore, conform to a priori expectation but are not significant. For instance, the result shows real interest of rate having negative sign but not significant at 5 percent level. The ECM has the correct sign of negative and it is significant meaning that only about 16 percent of the errors is adjusted yearly.

Table 4.4: OVERPARAMETERIZED

Dependent Variable: D(GDP)
Method: Least Squares
Date: 10/17/14 Time: 08:34
Sample (adjusted): 1974 2012
Included observations: 39 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2.230763	4.195482	-0.531706	0.5993
D(INV)	0.083035	0.028092	2.955781	0.0064
D(INV(-1))	0.039734	0.026107	1.521975	0.1396
D(DS)	-11.28906	4.396335	-2.567833	0.0161
D(DS(-1))	3.678254	4.345908	0.846372	0.4048
D(PSC)	4.661558	2.556065	1.823725	0.0793
D(PSC(-1))	-1.292041	2.826585	-0.457103	0.6513
D(M2)	1.070628	2.301384	0.465211	0.6455
D(M2(-1))	1.185581	2.134745	0.555374	0.5832
D(FDI)	-1155.496	570.0198	-2.027115	0.0526
D(FDI(-1))	-173.9991	574.7170	-0.302756	0.7644
ECM(-1)	-0.753863	0.218606	-3.448502	0.0019

R-squared	0.716966	Mean dependent var	-0.299959
Adjusted R-squared	0.601655	S.D. dependent var	38.84640
S.E. of regression	24.51773	Akaike info criterion	9.484330
Sum squared resid	16230.22	Schwarz criterion	9.996195
Log likelihood	-172.9444	Hannan-Quinn criter.	9.667983
F-statistic	6.217705	Durbin-Watson stat	1.948660
Prob(F-statistic)	0.000053		

Table 4.5: PARSIMONIOUS

Dependent Variable: D(GDP)
Method: Least Squares
Date: 10/17/14 Time: 08:37
Sample (adjusted): 1974 2012
Included observations: 39 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.171413	4.017423	-0.291583	0.7724
D(INV)	0.079894	0.021915	3.645689	0.0009
D(DS)	-10.25822	3.509956	-2.922607	0.0062
D(PSC)	4.870164	2.236261	2.177815	0.0367
D(FDI)	-1083.461	507.1562	-2.136345	0.0402
ECM(-1)	-0.774772	0.172041	-4.503406	0.0001

R-squared	0.656656	Mean dependent var	-0.299959
Adjusted R-squared	0.604634	S.D. dependent var	38.84640
S.E. of regression	24.42589	Akaike info criterion	9.369802
Sum squared resid	19688.59	Schwarz criterion	9.625735
Log likelihood	-176.7111	Hannan-Quinn criter.	9.461629
F-statistic	12.62270	Durbin-Watson stat	1.796825
Prob(F-statistic)	0.000001		

Granger Causality Test Table 4.5

Table 4.6: Causality test results.

Null Hypothesis:	Prob.	Conclusion
D(INV) does not Granger Cause D(GDP)	0.7256	Accept
D(GDP) does not Granger Cause D(INV)	0.9673	Accept
D(DS) does not Granger Cause D(GDP)	0.3791	Accept
D(GDP) does not Granger Cause D(DS)	0.7654	Accept
D(PSC) does not Granger Cause D(GDP)	0.3562	Accept
D(GDP) does not Granger Cause D(PSC)	0.4055	Accept
D(FDI) does not Granger Cause D(GDP)	0.4894	Accept
D(GDP) does not Granger Cause D(FDI)	0.7000	Accept
D(DS) does not Granger Cause D(INV)	0.9831	Accept
D(INV) does not Granger Cause D(DS)	0.9075	Accept
D(PSC) does not Granger Cause D(INV)	0.3371	Accept
D(INV) does not Granger Cause D(PSC)	0.8802	Accept

Shows the result of the Granger Causality Test conducted. One of the objective of this study is to examine the causal relationship between economic growth and financial development. The F- Statistic (P > 0.05) for each variable was examined. The test result shows that there is causal relationship between economic growth proxies by RGDP and financial development indictor – domestic saving (RDS). On the other hand, there is no causal relationship between economic growth (RGDP) and domestic investment (RDINV), credit to private sector (RPSC) and real foreign direct investment (RFDI).

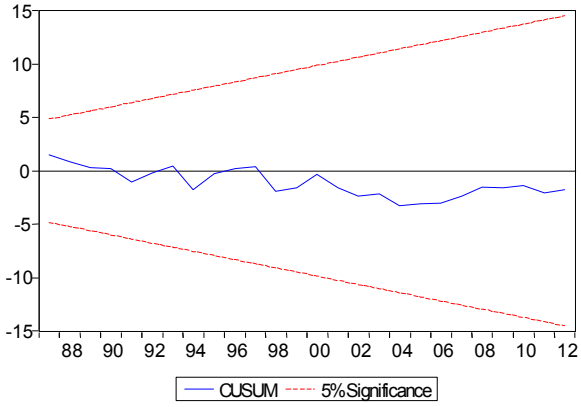
Diagonistic Test: Another stage is to check the goodness of fit and the validity of the model. Diagonistic test such as Lagrange multiplier (LM) test for serial correlation and the plot of cumulative sum of recursive residuals (CUSUM) and cumulative sum of square stability test was conducted. The test result is as follows:

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.036636	Prob. F(2,24)	0.9641
*Obs*R-squared*	0.121747	Prob. Chi-Square(2)	0.9409

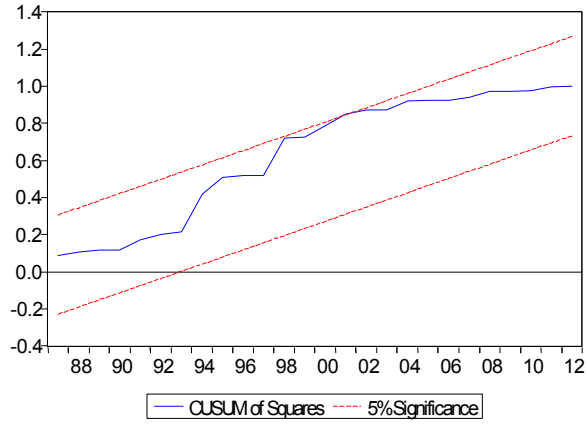
The null hypothesis of no serial correlation was not rejected. This implies that there is evidence of no serial correlation. Since P – value of F-statistics of 0.096 is greater than 5 per cent (0.05). The goodness of fit of the model is relatively high. Also, the CUSUM test show that the line lies within the two red lines which is a condition for stability. Thus, the condition for stability has been fulfilled.

The graph of CUSUM test is presented below



The two straight red lines represent the critical bounds.

Graph of Cumulative Sum of Squares of Recursive Residuals (CUSUMSQ)



The straight line represents critical bounds at 5% significance level (CUSUMSQ) graph of test of stability. From the findings the regression specification and estimation are significant and reliable having passed all diagonistic test.

Variance Decomposition: Forecast error variance decomposition measures the changes in a variable due to its own shock and how much due to shocks to other variable. From the estimated variance decomposition result presented in table 6, each variable explains the change in itself due to its own past values and percentage change due to other series. From the result, it is clear that the highest source of variation of all the series are own shocks. For instance, real investment (RINV) accounted about 24.2 per cent forecast error variance from its own shocks. This implies that the change in INV is caused by its past values (INV_{T-1}). This is however the highest in the series followed by real gross domestic product (RGDP)

which accounted about 4.56% variation from its own shock. The third is real domestic savings (RDS) which accounted for about 2.21% variation from its own shock, credit to private sector (RPSC) explain about 0.91%, real foreign direct investment (RFDI) is the lowest, accounted about 0.001% forecast error variance from its own shock.

Interestingly the result reveals that real domestic investment (RDINV) is a significant and major source of the forecast error variance in the real GDP (RGDP). The RDINV accounts for about 8.5% variation in the real GDP (RGDP). This means that domestic investment contributes significantly in Nigeria's economic growth. This conforms with economic a prior. This is followed by real domestic savings (RDS) which averages about 8.43% forecast error variance in the real GDP (RGDP), foreign direct investment (RFDI) contributes about 5.71% to GDP, this is also significant. The policy implication is that given the period of this study investment, domestic savings, credit to private sector and foreign direct investment can significantly propel capital formation and economic growth.

Table 4.7: Result of forecast error variance decomposition. (see attachment)

	LogRGDP	*LogINV*	*LogDS*	*LogPSC*	*LogFDI*
LogRGDP	4.56	8.5	8.43	4.90	5.71
LogINV	20	24.2	18.6	19.5	44.28
LogDS	0.07	1.23	2.21	0.91	
LogPSC	1.62	1.86	2.5	0.91	1.26
LogRFDI	0.002	0.003	0.001	0.001	1.50

CONCLUSION

The study aims at finding the impact of financial development on economic growth in Nigeria between the periods of 1970-2012 periods. It also aims at finding the causal relationship between this variable of interest. Financial development indicators were used to determine their effects on economic growth. The empirical result shows evidence of mutual independent causality between economic growth and financial development. Increase in finance does not propel economic growth and increase in activities in the real sector does not induce financial development. This result of no causality obtained is consistent with Lukas mutual independent hypothesis.

Also, the result indicates a strong positive relationship between economic growth and financial development. However, there is significant impact of financial development of economic growth. Financial development explains about 65% variation in GDP proxied by economic growth.

Furthermore, economic growth is significantly explained by its own shock whereas, some financial indicators outlined in this study where captured to measure the development of the financial, all the variables significantly contributed to economic growth.

Flowing from the finding of this study, the following recommendations are made as useful guide for policy makers and researchers. Since, investment significantly contributes to economic growth, it is therefore pertinent to formulate policies to boost adequate domestic saving that can power economic growth. Moreover, saving is identical to investment and additional capital is required to achieve a desired rate of growth. The finding is in support of Lukas mutual independent hypothesis.

Interestingly, real domestic investment has been identified in this study as a major source of economic growth. Government should formulate policies and create institutions that can boost domestic investment. This is achieved through increasing loans and credit s to the private sector. Furthermore, government should create a more conducive environment that can encourage more foreign direct investment, since it significantly contributes significantly to GDP growth rate.

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