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FOREIGN DIRECT INVESTMENT AND ECONOMIC GROWTH: HOW IMPORTANT IS GOVERNMENTATTITUDE AND FINANCIAL DEVELOPMENT IN NIGERIA?

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Abstract: - Financial sector development and the quality of governance of an economy will determine the amount and productivity of incoming finances. This study investigated the effect of foreign direct investment (FDI) on economic growth given the government quality and financial development in Nigeria with a data span of 1981 to 2013. The findings suggested an insignificant effect of FDI on growth. Governance quality and the financial sector do not help the situation as seen in the interactions. Repositioning the governance structure and quality, and broader development of the financial sector, including monitoring and ensuring adequate use of credits by the financial sector will ensure positive and significant relationship between FDI and growth.

Keywords: FDI, Government Quality, Economic Growth, GDP, ECM

Introduction: The necessity of achieving growth in the process of development attainment is rigid; achieving economic growth is prerequisite to development. However, the discussion of growth theory is not without the mention of capital accumulation, it is an important factor that determines the extent a nation can go in its production adventure. It is therefore an important reason among others why many developing nations remain developing.

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The ability to mobilize adequate capital is a challenge to many developing nations, this is however not totally surprising since a hungry population will not think of saving or investment while consumption necessities are there to be met. With these, comes the importance of rich versus poor capital transfer. To be able to stand on a solid rock of capital accumulation for a better economic transformation, the third world require transfer of capital from the rich economies.

Though, the capital transfer paradigm involve several forms of capital in its nature of transfer, which include official development assistance, remittances, portfolio investment, foreign direct investment among others, but the “above all” importance of foreign direct investment cannot be neglected. For example, foreign direct

investment accounted for about half of the total resource flow to developing countries in 2004, while other sources of capital flow share the remaining half (World Bank, 2011). This is however not surprising, given that the foreign direct investment is directly involved in the productivity process of the search for growth.

Complementing the large empirical evidences supporting the close positive ties between foreign direct investment and real growth is the close positive relationship perceived from the negative real output growth experience of most Sub – Saharan Africa countries around the early 1980's with the attendant decline in investment rates until around 1990 in some cases (Osinkoya, 1994, Adeniyi *et al.* 2015). However, despite this evidence of close relationship between foreign direct investment and growth, many still argue that the channel through which foreign direct investment affects the economy matters. The financial absorptive capacity of the economy into which capital is being transferred will determine the effect of foreign direct investment on its growth level. It is in the search for the appropriate channel through which FDI positively influence growth that Borensztein *et al.* (1998) agrees with Balasubramnyan *et al.* (1996) that the domestic economy's trade and the human capital policies are necessary for foreign direct investment to have a positive effect on economic growth, while the focus of De Mello (1997) was on the importance of physical capital accumulation.

However, the qualities of governance, in terms of corruption, rule of law, system of government among others are important ingredients in attracting foreign investors and ensuring effectiveness of investment by safeguarding contracts. A government with clear policy focus will create a peaceful atmosphere in the imagination of foreign investors. Also, financial development of the nation in the form of readymade availability and efficient channeling of capital will as well reinforce the efficiency of the new foreign capital and will picture promising to the investors. Though, an inventive work by Adeniyi *et al.* (2015) considered the financial development of the capital flow recipient economy as the prerequisite for the FDI – growth promoting effect, but no study as known to this work has considered both the quality of governance and financial development together as a prerequisite for FDI – growth promoting effect, also the data span is more than that of Adeniyi *et al.* (2015) and this study is Nigeria specific.

Following section one is section two which deals with the literature and empirical review. In section three, the methodology is developed, empirical results are presented and discussed in section four and section five concludes the paper.

Theoretical and Empirical Review: The modernization school as pointed out by Adeleke (2014) argued that there exists a natural order by which nations can rise to what can be termed higher development stages. To them, as the developing nations tread the path of the advanced economies they tend to overcome the endogenous impediments and move to more exogenously directed and motivated development through their liberalization, international trade and industrialization. However, achieving the capability for overcoming these impediments depends on the factor endowment of such economy. This theory agrees that foreign direct investment (FDI) is a necessity as a development rock upon which domestic savings must stand for support and promotion of domestic capital accumulation which will then result into growth of the economy. The modernization theory finds its bedrock from the Solow growth model, the augmented Solow growth model and the endogenous growth model or new growth models (details in Wilhelms, 1998; Mengistu and Adams, 2007).

Refusing to tie agreement with the position of the modern school, the Dependency school considered depending on external or foreign investment as dangerous and may spell bad for the economic growth and result in income inequality in the future long run. This school seems to be more protective and exercising caution in the FDI – growth optimism by claiming that underdevelopment, income

inequality and some other woes of the third world countries developed from the exploitative activities by the advanced nations. FDI builds up, while foreigners or foreign projects take hold; they reasoned. Their conclusive assumption is based on believe that any economy controlled by foreigners is not developing organically but in a non-proportionate style (details in Tsai, 1994; Adams, 2006; Adeleke, 2014).However, more considerate and balance is the integrative school, by integrating the modernization and the dependency concepts of the former two schools. (See, Moosa, 2002).

In the spirit of discussing the importance of FDI, empirical studies have tried to decipher the channels through which FDI promotes economic growth. Asiedu (2002) found that the elements that drive capital inflow and its efficiency in the host country are return on investment, infrastructural development and trade openness. Dutt (1977) observed that the sector pattern is a factor in determining the FDI – growth effect, Borenztein (1998) accounted for the importance of human capital while De Mello (1999) and Alfaro *et al* (2004) found the degree of complementarities and substitution between FDI and domestic investment as well as local financial markets to be important components.

With the truck of empirics on FDI – growth nexus, not so many have considered the importance of domestic economies' financial development. Hermes and Lensink (2003) argued on the necessity of financial system development of the FDI recipient economy, to them, the financial system is a precondition for positive impact on growth, the financial system is expected to promote and enhance the efficiency of resource allocation at the same time improving the absorptive capacity of the economy with respect to the inflow of FDI. Ljungwall and Li (2007) also emphasized how improved domestic financial intermediation can promote economic growth through its effects on the accumulation of capital in china. They found out that the level of financial system development in china which can be revealed in its ability to exercise functions such as savings mobilization, helping to allocate capital and facilitating risk management will likely affect the rate or level at which the economy of china responds to FDI and the inflows of capital in general. Adeniyi *et al*. (2015) also confirmed the necessity of financial system development for a positive economic promoting FDI effect in the Sub – Saharan Africa. On the importance of governance, a few literatures are also available. The quality of government and the condition of the state are interdependent; the outcome of all efforts in a democratic nation will depend on the rule of law. Many will agree that when interdependency appears addition and subtraction between variables break down. This is the aim of the continuous clamor for researchers to consider the quality and system of governance when growth behaviour is concerned.

Evidences exist on the positive relationship between growth and governance (see Knack 2002; Fayissa and Nsiah 2013; Adeleke 2014). However, empirical studies have been challenged with the availability of data, the current effort to make available some data set by the World Governance Indicator is commendable and has added quality to researches.It is worth noting that this study is inventive in its style. Though Adeniyi *et al* (2015) considered financial development as a prerequisite while Adeleke (2014) considered the importance of governance, but no study (known to the author) has considered both governance and financial development importance once and in a country specific style. The reason for being country specific is not far from the fact that countries have differing political atmosphere, cultural characteristics and some other features that differentiate them from others, paneling them may undermine these characteristics. Though Adeniyi *et al* (2015) tried to solve this problem by introducing a dummy variable, comparing the countries with a single country. That cannot be referred to as addressing the differences among the countries rather, different between one country and "others". This study then limits the study to a

country specific, leaving the vacuums of other countries to be filled in other researches.

Brief Graphical Description: Figure 1 describes the relationship between the growth rate of real GDP and growth rate of the inflow of foreign direct investment in Nigeria calculated in a discrete approach by subtracting current from previous divided by previous. The graph shows that no definite or straight pattern has been maintained by these two variables, rather, fluctuations are evident. Although the real economic growth rate has majorly been below the growth of FDI until recently (around 2010 to 2013), the growth of the former seems to be relatively stable compared to the latter. However, joint movement is not totally close as some large deviations in the variables are clearly seen in the 1991 to 1994 periods.

It must be pointed out that since after the repositioning of government (re-emergence of democracy) in 1999, close tie in movement is obvious and large deviations in the previous periods are not the case. But is this good for the nation? The economic crisis of 2008 did not leave the FDI inflow to Nigeria unaffected, a negative growth is evident in this period but after which FDI inflow fairly became positive around 2009. Since this period of world recession, the growth rate of FDI inflow has been only a little different from zero until around 2013 when it is actually negative.

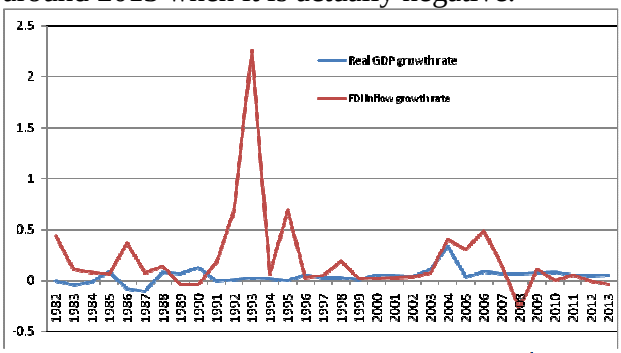

Figure1: Relationship between FDI Inflow and Real GDP Growth Rates (1981 to 2013)

Source: Drawn by Author (Data collected from the World Bank Data Base) Model, Data and Variable Description

Based on the ongoing discussion, Adeniyi *et al.* (2015) measured financial development in a non-aggregative dimension, considering the liquid liabilities, domestic credit to the private sector and total domestic credit provided by the financial sector, each as a ratio of real GDP. Some of these are adopted. Data were collected for the periods of 1981 to 2013 from the World Bank data base (WDI).The world government indicator (WGI) data on government quality is used in measuring governance, though this data begins from 1996, this study assumes that the periods before the 1999 democratic constitution cannot be considered to be of quality, this is more so because of the absence of rule of law, insecurity of human right, political instability, violence, high corruption and non-transparency all of which contributed to poor regulatory quality of governance during these periods, several government administrations that emerged to remove all these impediments where either overthrown by coup or disrupted by civil war (see, Ogbeidi, 2012), the absence of democracy translates into the presence of decree, a government by command, this is why it is difficult to score these periods and are hence scored 0. The data given in term of percentile is used and it ranges from 0 to 100 percentile. Periods before 1999 are score zero while periods after this are scored according to World Governance Indicator.

Government quality indicator, after collecting its data from the world governance indicator in form of percentile rank on corruption, government effectiveness, political stability and absence of violence, regulatory quality, rule of law and voice and accountability, these six indices are added together and divided by six(6) to obtain an aggregate representative for government quality.

$$GQI = \frac{\text{corruption} + \text{government effectiveness} + \text{political stability and absence of violence} + \text{regulatory quality} + \text{rule of law} + \text{voice and accountability}}{6}$$

The model for the study is specified as

$$Growth_t = f(GFCF_t, FDI_t, FD_t, GQI_t, CONTROLS_t) \quad (1)$$

$$Growth_t = f(GFCF_t, FDI_t{}^{*}FD_t, FDI_t{}^{*}GQI_t, CONTROLS_t) \quad (2)$$

Where $Growth_t$ is the real GDP and $GFCF_t$ is the gross fixed capital formation, FD_t refers to measures of financial development, measured by $\frac{M_2}{GDP_t} * 100$ (liquid liabilities to GDP), $\frac{CPS}{GDP_t} * 100$ (Credit to the private sector as a ratio of GDP), $\frac{FSC}{GDP_t} * 100$ (total Domestic credit by the financial sector to GDP). FDI_t Refers to foreign direct investment, while GQI_t means government quality index. The financial development indices and the indices of government quality are then interacted with foreign direct investment to measure their importance in the FDI – growth promoting effect, given as $FDI_t{}^{*}FD_t$ and $FDI_t{}^{*}GQI_t$ respectively, bearing in mind that FD_t contains three measures of financial development.

$CONTROLS_t$ refers to other important economic variables that are known from theory and literature to affect the Nigerian economic growth. Those included inflation (INF_t) and government consumption expenditure GCE_t. The first model is the model without interactions, while in model two; the financial development measures and the governance quality index are interacted with FDI. Some of the variables that are not yet in percentage are naturally logged to reduce their order of integration and possibly impose normal distribution.

Pre Estimation Analyses: In the process of selecting the appropriate model estimation technique and advertently avoiding a spurious result, it has become more than traditional to check the statistical probabilities of the series of interest. This involves knowing the order of integration of these variables and then differentiating where necessary. In order to carry out this test of order of integration referred to as unit root test; several tests have been used and suggested by literature. The Augmented Dickey fuller test and the Phillip Perron tests of unit root are employed simultaneously in these work (see Dickey and Fuller, 1979, 1981 and Phillips and Perron, 1988).

In line with these, table 1, first describes the statistical properties of the variables estimation. The mean (average) of real GDP (growth), gross fixed capital formation (GFCF), foreign direct investment (FDI) and government consumption expenditure (GCE) are in million, while other variables except GQI (which is percentile rank) are in percentage of real GDP. The table revealed that the average gross fixed capital formation of about 1.7 billion naira remains above the average inflow of FDI of about 177.1million.The standard deviation, skewness and kurtosis provide information that are better confirmed by the Jarque Bera statistic which suggests that only FDI inflow, credit by the financial sectors ($\frac{FSC}{GDP_t}$ (%)) and government quality index (GQI_t) are normally distributed. Nevertheless, it is the distribution of the error term that is more important. Table 2, shows that all the variables are integrated of order 1 and needs to be differentiated once before they are stationary using 5% level of significance. The Phillip Perron statistics simply complements the result of the Augmented Dickey Fuller. With the presence of unit root, this suggests that the mean of variables today may differ tomorrow and hence not constant; this may result in a non-stationary mean and generate spurious estimates. The changes in mean may suggest that the relationship between these variables does not end in the short run but extends to a long run relationship. Since the variables are all of the same order, the Johansen co integration test is an acceptable way of checking for the presence of possible long run relationships.

Table 1. Descriptive Statistics

	Descriptive Statistics								
	$Growth_t$	$GFCF_t$	FDI_t	$\frac{FSC}{GDP_t}$ (%)	$\frac{CPS}{GDP_t}$ (%)	$\frac{M2}{GDP_t}$ (%)	GQI_t	INF_t(%)	GCE_t
Mean	29365468	1691807	177062.5	25.97	12.44	17.10	6.66	20.392	1311862.
Maximum	63942846	11723098	552498.6	48.67	36.90	38.00	17.72	72.836	5053150.
Minimum	15242628	8799.480	3757.900	4.90	5.92	8.60	0.00	5.382	216264.0
Std. Dev.	15031885	3403939	181255.8	12.35	6.53	5.99	7.53	18.262	1786212.
Skewness	1.085103	2.179913	0.728901	0.43	2.14	1.72	0.27	1.531	1.296977
Kurtosis	2.691375	6.094221	2.051363	2.14	7.87	6.85	1.17	4.080	2.926452
Jarque−Bera	6.606933	39.30064	4.159511	2.02	57.77	36.70	5.04	14.646	9.259257
Prob	0.036756	0.000000	0.124961	0.36	0.00	0.00	0.08	0.001	0.009758
Sum	9.69E+08	55829633	5843063	857.05	410.45	564.30	219.84	672.938	43291444

Source: Computed by the Author (Data collected from the World Bank data base using World Development Indicator)

Table 3, presents the result of the Johansen co integration test, the result suggests the presence of at least 6 co integrating equations. This confirms the presence of long run relationship among the variables. With unit root and the presence of co integration, the error correction model is then used to estimate the coefficients (that represent the short run) as well as the speed of adjustment to equilibrium. The error correction model for model one specified, is given in equation

Table 2. Unit Root Test

	Augmented Dickey Fuller			Phillip Perron		
Variables	Level	1st Difference	Order of Integration (5%)	Level	1st Difference	Order of Integration (5%)
$lnGrowth_t$	1.7253	−4.1878		1.7253	−4.1734	
	(0.9995)	(0.0027***)	I(1)	(0.9995)	(0.0028***)	I(1)
$lnGFCF_t$	1.1317	−4.4848		1.0111	−4.3794	
	(0.9969)	(0.0013***)	I(1)	(0.9957)	(0.0016***)	I(1)
$lnFDI_t$	−1.5115	−4.3738		−1.5115	−4.3738	
	(0.5151)	(0.0016***)	I(1)	(0.5151)	(0.0016***)	I(1)
$\frac{FSC}{GDP_t}$ (%)	−2.0791	−5.1921		−1.8634	−9.0479	
	(0.2539)	(0.0002***)	I(1)	(0.3445)	(0.0000***)	I(1)
$\frac{CPS}{GDP_t}$ (%)	−1.8913	−5.6195		−1.8109	−8.5808	
	(0.3322)	(0.0001***)	I(1)	(0.3687)	(0.0000***)	I(1)
$\frac{M2}{GDP_t}$ (%)	−2.0394	−5.2850		−2.1032	−5.7442	
	(0.2694)	(0.0001***)	I(1)	(0.2448)	(0.0000***)	I(1)
GQI_t	−0.9258	−5.4425		−0.7352	−5.9309	
	(0.7668)	(0.0001***)	I(1)	(0.8235)	(0.0000***)	I(1)
INF_t(%)	−2.6870	−5.1715		−2.5982	−8.0377	
	(0.0873)	(0.0002***)	I(1)	(0.1038)	(0.0000***)	I(1)
$lnGCE_t$	0.0346	−5.9805		0.0806	−5.9659	
	(0.9550)	(0.0000***)	I(1)	(0.9591)	(0.0000***)	I(1)

Source: Computed by the Author

Note that the figures in brackets ( ) represent the probabilities and * ** and represent statistical significance at 1, 5 , and 10 percent respectively**

Table 3: *JohansenCointegrationTest*

UnrestrictedCointegrationRankTest (Trace)

Hypothesized No. ofCE(s)	*Eigenvalue*	*Trace Statistic*	0.05 *CriticalValue*	*Prob.***
None *	0.966480	369.8450	197.3709	0.0000
Atmost 1 *	0.936732	264.5806	159.5297	0.0000
Atmost 2 *	0.822037	179.0090	125.6154	0.0000
Atmost 3 *	0.741125	125.1471	95.75366	0.0001
Atmost 4 *	0.678351	83.25337	69.81889	0.0029
Atmost 5 *	0.535489	48.09022	47.85613	0.0475
Atmost 6	0.37746	24.32036	29.79707	0.1872
Atmost 7	0.238180	9.613746	15.49471	0.3116
Atmost 8	0.037361	1.180366	3.841466	0.2733

Source: ComputedbytheAuthor

Tracetestindicates 6 cointegratingeqn(s) atthe 0.05 level

** denotesrejectionofthehypothesisatthe 0.05 level*

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

$$D(lnGrowth_t) = k + D(lnGFCF_t) + D(lnFDI_t) + D(FSC_t) + D(CPS_t) + D\left(\frac{M2}{GDP_t}\right) + D(GQI_t) + D(INF_t) + D(lnGCE) + ECM_{t-1} \quad (3)$$

While equation two is re specified as

$$D(lnGrowth_t) = c + D(lnGFCF_t) + DlnFDI_t{}^{*}FSC_t + DlnFDI_t{}^{*}CPS_t + DlnFDI_t{}^{*}\frac{M2}{GDP_t} + DlnFDI_t{}^{*}GQI_t + D(INF_t) + D(lnGCE) + ECM_{t-1} \quad (4)$$

$$\mathbf{FSC} = \frac{FSC}{GDP_t}(\%), \qquad \mathbf{CPS} = \frac{CPS}{GDP_t}(\%)$$

Where ECM_{t-1} is a year lag of the error term generated from the static estimation of the variables in their level forms.

The relationship between the variables, i.e. correlation in term of size and sign is presented on table 4, the table indicates a positive and high correlation between real growth and real gross fixed capital formation, a degree of correlation of about 95% is witnessed. This is in conformity with theory as more capital is expected to generate more growth. Foreign direct investments are capital inflows; they are expected to boost real growth, with agreement, the result indicates a positive relationship of about 84% between foreign direct investment and real economic growth. Among the three financial development indicators, only credits provided by the financial sector (FSC) moves with economic growth negatively with about 44% degree of correlation, while liquid liabilities as a percentage of GDP ($\frac{M2}{GDP_t}$ %) and credit to the private sector ($CPS_t(\%)$) are positively related with growth with coefficient of joint movement of about 65% and 74% respectively. Government quality is also found to move positively with real economic growth with a degree of about 85%.

Inflation will of course be a drainer of real GDP, since the latter is calculated by the removal of the former from GDP at current prices, this is why the joint movement between inflation and real GDP is negative, and a negative relationship of about 37% is also revealed. Government consumption expenditure also exhibits a prime

positive movement with economic growth, an understanding of the Keynesian paradigm of the necessity of government spending for growth will confirm the agreement between theory and correlation result, a degree of co movement of about 97% exists between growth and government consumption expenditure.

Table 4: Correlation Result

	Correlation Coefficients								
	$lnGrowth_t$	$lnGFCF_t$	$lnFDI_t$	$\frac{FSC}{GDP_t}$ (%)	$\frac{CPS}{GDP_t}$ (%)	$\frac{M2}{GDP_t}$ (%)	GQI_t	INF_t (%)	$lnGCE_t$
$lnGrowth_t$	1								
$lnGFCF_t$	0.946	1							
$lnFDI_t$	0.833	0.938	1						
FSC_t(%)	−0.442	−0.583	−0.635	1					
CPS_t(%)	0.741	0.616	0.516	0.071	1				
$\frac{M2}{GDP_t}$ (%)	0.646	0.504	0.446	0.111	0.933	1			
GQI_t	0.851	0.854	0.821	−0.523	0.633	0.632	1		
INF_t (%)	−0.364	−0.271	−0.187	0.232	−0.289	−0.320	−0.449	1	
$lnGCE_t$ (%)	0.964	0.863	0.744	−0.337	0.788	0.675	0.784	−0.318	1

Source: Computed by the Author

The estimation of the first model revealed that the positive relationship between gross fixed capital formation and economic growth is maintained and a significant effect of about 0.07% on economic growth can be seen. A 1% increase (decrease) in gross fixed capital formation will result to about 0.07% increase (decrease) in real economic growth. However, the effect of FDI inflow on growth is unexpectedly negative but insignificant, although a 1% increase (decrease) in the FDI inflow will reduce (raise) real GDP growth by 0.012%, this coefficient however is not statistically different from zero.

Looking at the measures of financial development, only two measures are significantly affecting growth, domestic credit by the financial sector as a ratio of GDP (FSC_t) is not significantly influencing growth but has a positive relationship with growth. AlsoCPS_t, total credit to the private sector as a ratio of GDP, affects growth significantly but this effect on growth is negative and a 1% increase (decrease) in CPS_t results into about 0.011% decrease (increase) in real economic growth. $\frac{M2}{GDP_t}$, which is the ratio of liquid liabilities to real GDP is also significant and promotes growth with its positive relationship, a response of about 0.02% of economic growth to changes in $\frac{M2}{GDP_t}$ is recorded. The quality of governance also influences economic growth positively, a unit increase in the percentile rank of government quality will raise economic growth by about 0.002% and the result shows that government quality is a significant influence of the direction of growth. Inflation as expected is negatively related with real GDP and fairly significant, though the inflation elasticity of real GDP is found to be very low, a percent increase (decrease) in inflation is only generating close to zero response of about 0.002% decrease (increase) in real GDP.

Government consumption expenditure displays a better relationship with both significance and size, a percent increase (decrease) in the expenditure will lead to about 0.17% increase

(decrease) in real economic growth, and this coefficient is also highly significant.

The coefficient of the error correction mechanism is negative and significant, and suggests that about 79% of all errors or disequilibrium in the estimated short run is adjusted for in the long run.

Table 5: Result of the Error Correction Model

$\Delta lnGrowth_t$	*Estimation Result (A)*
C	0.009746 [0.01190] (0.4217)
$\Delta lnGFCF_t$	0.066957* [0.034165] (0.0628)
$\Delta lnFDI_t$	−0.012222 [0.034744] (0.7284)
ΔFSC_t (%)	0.000134 [0.001344] (0.9216)
ΔCPS_t(%)	−0.011243** [0.005228] (0.0428)
$\Delta \frac{M2}{GDP_t}$ (%)	0.012307* [0.006041] (0.0538)
ΔGQI_t	0.000172 [0.0022797] (0.9515)
ΔINF_t(%)	−0.001458** [0.000603] (0.0243)
$\Delta lnGCE_t$(%)	0.172574*** [0.025423] (0.0000)
ECM_{t-1}	−0.793033*** [0.243411] (0.0036)

Source: Computed by the Author

*Figures enclosed in [ ] are standard errors while figures housed in ( ) are probabilities ***,** and * represents significance level at 1,5 and 10 percent respectively*

Table 5.1 Diagnostic Result (A).

$R^2 = 0.71$
$\overline{R^2} = 0.60$
$F - Statistics = 6.05155\ (0.000277)$
$Durbin\ Watson = 1.89$
$Akaike\ Information\ Criterion = -3.182014$
$Schwarz\ Criterion = -2.7240$

Serial Corr LM Test	*Normalit*	*Heterosced Test*	*Ramsey Test*
0.7860 (0.4692)	3.9179 (0.1410)	0.5750 (0.8030)	1.1066 (0.2810)

Source: Computed by the Author

Figures in ( ) are probability values

With the estimates presented on table 5, there is need to diagnose the error term generated, so as to confirm the reliability of the coefficients. Table 5.1 contains the diagnostic result of the estimation. The adjusted R squared suggests that about 60% of all variations in the log real GDP are explained or captured by the exogenous variables included in the model. Better put 59% of changes or variations in log real GDP are predicted by the exogenous variables.

The F-statistic suggests that at least one of the parameters significantly affect real GDP. The Durbin Watson coefficient agrees to the absence of serious autocorrelation since the threshold is 2. Serial Correlation LM test also confirms the absence of serial correlation. The heteroscedasticity test informs us that the variance of the error term is constant, while the Ramsey Reset test regard the model as not mis specified. The normality test commemorates other tests, revealing a normal distribution of the error term of the estimated model.

On table 6, after the interactions of the measures of financial development with FDI as well as FDI interaction with government quality index, the relationship among these variables are again checked to see if there will be difference in relationship with the interaction. In the real world, FDI inflow does not affect the economy

independently of financial development and quality governance, hence their interaction.

After the interaction of the variables, table 6 reveals that the relationship between growth and gross fixed capital formation remains unchanged as on table 4. The joint movement between growth and the interacted FDI – FSC (FDI and credit provided by the financial sector) is positive with a degree of 83% compare with the lower degree of FSC and its negativity on table 4. When FDI is interacted with the credit to the private sector ($lnFDI^{*}CPS_t$) a joint positive movement of 89% with real growth is also recorded, and with FDI interaction with $\frac{M2}{GDP}$ ($lnFDI^{*}\frac{M2}{GDP_t}$) the relationship of FDI with growth also becomes higher at a degree of 88%. The differences in joint movement of FDI with growth after the interactions are clear but very minute (by comparing table 4 with table 6).

The relationship between growth and inflation as well as growth with government consumption expenditure remains the same at – (37%) and 97% respectively.

Table 6: Correlation Result

		Correlation Coefficients						
	$lnGrowth_i$	$lnGFCF_t$	$lnFDI^{*}FSC_t$	$lnFDI^{*}CPS_t$	$lnFDI^{*}\frac{M2}{GDP_t}$	$lnFDI^{*}GQI_t$	INF_t	$lnGCE_t$
$lnGrowth_i$	1							
$lnGFCF_t$	0.946	1						
$lnFDI^{*}FSC_t$	0.830	0.914	1					
$lnFDI^{*}CPS_t$	0.893	0.954	0.971	1				
$lnFDI^{*}\frac{M2}{GDP_t}$	0.875	0.945	0.966	0.997	1			
$lnFDI^{*}GQI_t$	0.879	0.865	0.786	0.871	0.871	1		
INF_t	−0.364	−0.272	−0.125	−0.237	−0.232	−0.447	1	
$lnGCE_t$	0.964	0.863	0.758	0.823	0.796	0.811	−0.318	1

Source: ComputedbytheAuthor

The regression equation 4 is estimated and presented on table 7, the coefficient of gross fixed capital formation remains positive as on table 5, however, it is now insignificant, and meaning the effect of gross fixed capital formation is not different from zero.

Although all the financial development measures ($FSC, CPS, \frac{M2}{GDP}$) , when interacted with the foreign direct inflows, are positively related with growth but only one ($FDI^{*}CPS$) of the interactions influences or affects real economic growth significantly. When FDI inflow is interacted with credit to the private sector a significant but negative effect is revealed, suggesting a negative impact of FDI inflow on growth even when the channel of effect is credit to the private sector. It must however be noted that even on table 5, both credit to private sector and FDI inflow constitute a negative relationship on economic growth, the interaction is of no difference.

By interacting FDI inflow with government quality, the response is highly close to zero and the probability confirms that it is not significantly different from zero. Considering the effect of FDI on growth through government quality, the FDI inflow effect on growth though now positive remains insignificant as on table 5. Inflation remains negatively related with real

growth and significant while government consumption expenditure influences real growth more than on table 5 with a positive and highly significant coefficient.

Table 7: Result of the Error Correction Model

$\Delta lnGrowth_t$	Estimation Result (B)
C	**0.011772** **[0.012500]** **(0.3561)**
$\Delta lnGFCF_t$	**0.049697** **[0.031470]** **(0.1280)**
$\Delta lnFDI^*FSC_t$	**0.011394** **[0.026931]** **(0.6762)**
$\Delta lnFDI^*CPS_t$	**−0.158103*** **[0.078405]** **(0.0556)**
$\Delta lnFDI^*\frac{M2}{GDP_t}$	**0.150183** **[0.090910]** **(0.1121)**
$\Delta lnFDI^*GQI_t$	**−4.59E − 05** **[0.000247]** **(0.8541)**
ΔINF_t	**−0.001207**** **[0.000570]** **(0.0452)**
$\Delta lnGCE_t$	**0.179552***** **[0.029004]** **(0.0000)**
ECM_{t-1}	**−0.547029**** **[0.200618]** **(0.0120)**

Source: Computed by the Author

*Figures enclosed in [ ] are standard errors while figures housed in ( ) are probabilities ***, ** and * represents significance level at 1, 5 and 10 percent respectively*

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The coefficient of error correction model is negative and significant, suggesting also that about 55% of all errors or disequilibrium in the estimated short run model 4 is adjusted for in the long run.

Table 7.1 Diagnostic Result (E

$R^2 = 0.66$

$\overline{R^2} = 0.54$

$F - Statistics = 5.5459\ (0.000567)$

$Durbin\ Watson = 1.76$

$Akaike\ Information\ Criterion = -3.0734$

$Schwarz\ Criterion = -2.6612$

Serial Correlat LM Test	Normality T	Heteroscedasti Test	Ramsey Res Test
0.6736	2.6647	0.5895	1.3769
(0.5205)	(0.2639)	(0.7763)	(0.1824)

Source: Computed by the Author

Table 7.1, presents the diagnostic checks on the estimated model on table 7, the adjusted R squared suggests that about 54% of all variations in real economic growth are explained by the variables included in the model while the F statistics confirms the predictive ability of the model suggesting that at least one of the parameters is significant.

The Durbin Watson (whose threshold is 2) suggests the absence of serious autocorrelation; this is also confirmed by the serial correlation test which suggests the absence of serial correlation. The Jarque Bera test on the error term pronounces it normally distributed while the heteroscedasticity suggests the constancy of the variance of the error term. The Ramsey Reset test on the other hand addresses the model as not mis specified.

Conclusion and Recommendations: As important as domestic capital mobilisation is in an economy, its foreign inflow is as important. In a developing nation like Nigeria, the technological development and the availability of capital to purchase the idea gaps is very scarce, this necessitates the need to attract investors and advance economies to consider the economy as a prospective market for their capitals. But in this adventure, the quality of government may help achieve this by creating a goodwill enough to cause investors rushing into the country, so also is the pattern of development of the domestic financial market.

This empirical analysis found a result that suggests that the inflow of foreign direct investment has not been significant in its influence on Nigerian economic growth. This conforms to the (OLS) findings of Adeniyi *et al* (2015). The reason for this is not farfetched as most of the foreign direct inflows into the economy are mostly into the extractive sector. Even after the interaction with the financial development, only interaction with the CPS (credit to the private sector) is significant but even negative. This significance still conforms to Adeniyi *et al* (2015).

The interaction with government quality is not left behind in this insignificance finding. This study then concludes that the government institution in Nigeria between the periods considered is not well positioned and structured to ensure the significant effect of FDI inflow on economic growth. The situation of corruption, disregard for human rights, violence and terrorism among others are ingredients of this poor governance which does not allow for a significant effect in the FDI – growth nexus. The financial development interaction with FDI inflow (except the interaction with credit to the private sector) does not also help the situation as insignificant effect is still evident. The only measure of financial development, credit to the private sector which seems to have a significant relationship is also negative in its influence on growth.

With the result and conclusion, this study recommends that, since FDI inflow does not operate alone and depends on some other variables in the economy, if then a positive and significant relationship between FDI inflow and economic growth is desired, the government quality must be improved upon, the rank of the Nigerian government quality majorly falls below the 20th percentile throughout the years considered, an indication of poor governance quality.

The financial sector's development will determine to a large extent, the influence of foreign capital or finances in the home economy. If the financial sector is wrongly positioned measured by the effectiveness of the credit allocated, the returns on liquid liabilities and other financial development measurement, the usefulness and effectiveness of external capital inflow may not materialize and may even be detrimental to growth because of its possibility of ruining the quality of other macroeconomic factors such as exchange rate and inflation. There is need for more strategic allocation of credits and its monitoring as well as a revision of financial sector' rules on the part of government to ensure proper management of financial sector asset. The apex bank has a larger responsibility to play in such rearrangement.

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