

An Investigation into the Impact of Domestic Investment and Foreign Direct Investment on Economic Growth in Nigeria

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Abstract: *It is a general consensus that foreign direct investment and domestic investment benefits poor countries like Nigeria. This paper investigates the impact of both foreign direct investment and domestic investment on economic growth in Nigeria. The time series data were derived from various secondary sources such as: the Central bank of Nigeria statistical bulletins, Economic and Financial Review and Annual reports and statement of accounts and Federal Office of Statistics (FOS). The macroeconomic data cover real gross domestic product (RGDP), foreign direct investment (FDI) domestic investment, total foreign exchange rates, and trade liberalization from 1992-2013. The estimated techniques include the Ordinary Least Square (OLS) method, Augmented Dickey- Fuller (ADF) and Phillips Perron (PP) unit root test, Error Correction Method (ECM), Breusch-Godfrey serial correlation test, after which Breusch-Pagan-Godfrey test of heteroskedasticity, was used. The results of the OLS revealed that foreign direct investment (FDI), domestic investment (DIN), total foreign exchange rate (TEX) and trade liberalization (TP) impacted positively on economic growth (RGDP) in the Nigeria. Unit root results suggest that all the variables in the model are stationary at first difference d(1). The ECM result revealed the existence of long run relationship between economic growth (INRGDP), foreign direct investment (FDI), domestic investment (DIN), total foreign exchange rate (TEX) and trade liberalization (TP). The speed of adjustment was found to be at least two years for the long run equilibrium. This paper found that, there is no serial correlation among the error values. The result further revealed the absence of heteroscedasticity in the error term. This makes it possible for the results of this paper to be used for policy purposes. This paper found a positive and significant relationship between economic growth, domestic investment and total foreign exchange rates in Nigeria, but the paper found positive and insignificant relationship between foreign direct investment and trade liberalization. Therefore, this paper recommends that concerted effort be made by government and relevant authorities to formulate policies aim at creating a conducive investment environment so that Nigerians and non-Nigerian investors alike will be encourage to increase their propensity to invest in the country. They should also take step to ensuring foreign exchange stability and improve trade liberalization (openness of the economy) so as to achieve meaningful economic growth.*

Keywords: *Foreign direct investment, domestic investment, openness, and economic growth.*

1. INTRODUCTION

For the growth of any society, there is always the need for substantial resources to sustain it. Investment being the most important part of an open and effective economic system also serves as a major factor that facilitates economic growth of most economy. Over the years, emphasis has been placed on foreign direct investment (FDI) for economic sustainability, particularly in developing countries of Africa, Asia and Latin America (Abdulmumini and Tukur, 2012). To them the broad issue is that, most increase in the economic growth of the host countries by FDI always affect the size of host country's domestic investment, this concern emanates from the fact that foreign direct investment reduces the output, employment and as well worsen the balance of payment of those countries concerned (Agosin and Mayer, 2000). This is because benefits of those Foreign Direct Investors are not automatically accruing into host countries, but rather crowding out domestic investment by forcing the local investors out of market. It is to this end that, Akanbi (2010) argued that a reduction in the widespread poverty which is a major feature of the Nigeria economy can be achieved through a sustained increase in domestic investment, because domestic investment provides more employment opportunities for indigenes than the FDI. The extent of want of a nation is numerous such that the means to satisfy the investment drive of those activities for its growth are so

limited due to shortages of resources. Domestic investment seems not to be enough to stimulate economic growth in Nigeria but studies revealed that domestic investment has more effect on economic growth than FDI. To bridge the gap, sources have to be sought from outside the nation where it is in surplus to argument the available domestic resources of the nation. This is foreign direct investment (FDI).

Foreign direct investment has been described as investment made so as to acquire a lasting management interest (for instance, 10% of voting stocks) and at least 10% of equity shares in an enterprise operating in another country other than that of investors' country (Mwillima, 2003; World bank, 2007). FDI as an issue of economic policy is an integral part of economic development policies of most countries. FDI helps in bridging the capital shortage gap and complement domestic investment especially when it flows to high risk areas of new firms where domestic resources are limited. (Noozoye, 1979).

The enormous increase in FDI flows across countries is clearest sign of globalization of the world over the past 20 years and it offers an unprecedented opportunity for developing countries to achieve faster economic growth through trade and investment. In the period 1970s, international trade grew more rapidly than FDI, and thus international trade was by far than most other important international economic activities. This situation changed dramatically in the middle of the 1980s, when world FDI started to increase sharply. In this period, the world FDI has increased its importance by transferring technologies and establishing marketing and procuring networks for efficient production and sales internationally through FDI, foreign investor's benefits from utilizing their assets and resources efficiently, while FDI recipients benefits from acquiring technologies and from getting involved in international production and trade networks. While global FDI flows increased by 25% during 1991-2009, developing countries as a group show an FDI increase of 22% at constant prices (world developing report 2010). FDI flows to poor countries increased to almost 5% of GDP. Nwanko (1991) observed that the world recession in the late 1970s that led to a fall in the terms of trade and high interest rate in the international capital market were partly responsible for the increased need for FDI by developing countries.

Since 1990, the Nigerian governments have taken measures necessary to woo foreign investors into the country in order to augment domestic resources to finance planed growth. The measures include the repeal of laws that are inimical to foreign investment, promulgation of investment laws, various over sea trips for image laundry by presidents. Foreign direct investment has been described as investment made so as to acquire a lasting management interest (for instance, 10% of voting stocks) and at least 10% of equity shares in an enterprise operating in another country other than that of investors' country (Mwillima, 2003; World Bank, 2007). The amount of foreign direct investment inflow into Nigeria according to Ayadi (2002) has reached US\$ 2.23billion in 2003 and it rose to US\$ 5.3 billion in 2004 (9.13% increase) the figure rose again to US\$9.92 billion (87% increase) in 2005. The figure however declined slightly to US\$ 9.44 billion in 2006. Although most works were based on the impact of FDI on economic growth, (Ayanwale, 2007; Ayorinde, 2002), it is upon this premise that this study is designed to fill this gap in the body of literature, by investigating the impact of domestic investment, foreign direct investment on economic growth (RGDP) in Nigeria.

2. THEORETICAL ISSUES AND LITERATURE REVIEWS

Studies into the nature of the relationship between domestic investment, foreign direct investment and economic growth reveal mixed results. However, most studies emerged with findings that support of the exogenous growth theory. Exogenous growth theory is belief that growth occurring within an economy is influence by what is happening outside that economy. Or the belief that economic growth arises due to influences outside the economy or company of interest. The same general concept can be applied to an individual company, with the understanding that factors outside the direct control of that company will have some influence on the economic growth that experienced by that company.

The general idea of exogenous growth was develop during the middle of 20th century, and takes into consideration the basics of the Neoclassical Growth Theory while expanding the concept to allow for events and scenarios relevant to economic growth in contemporary settings. Neo-classical researchers regard FDI and international capital flows as closing the savings gap in developing countries (e.g. Chenery and Bruno, 1962). We would expect capital to flow from capital rich to capital poor countries, as is suggested by developments in the Heckscher-Ohlin approach to trade by Mundell (1957), because capital is scarce in developing countries which should lead to profitable investment opportunities for capital in developing countries.

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However, FDI represents control of production as well as a flow of capital, and it is influenced by other factors as well. In the traditional trade approach, trade and FDI might be seen as substitutes, but as other factors affect FDI, such as technology and firm-specific assets, they may also be complements (Markusen, 1984, 1995).

The debate which has taken a long period of time is whether foreign direct investment and domestic investment direct to economic growth or not.

According to traditionalist, the inflow of foreign investment improves economic growth by increasing the capital stock where a recent literature points to the role of foreign direct investment as a channel of international technology transfers.

According to Markusen (1995) there is growing evidence to foreign direct investment enhance technological change through technological diffusions, Kinshasa (1997) and

Helpman and Kingman (1985) argues that the impact of trade performance adopted by multinational enterprise in the case of vertical investment theoretical imperfect competition models predict complementary relationship between FDI and trade. Ariyo (1998) studied the investment trend and its impact on Nigeria's economic growth over the years. He found that only private domestic investment consistently contributed to raising GDP growth rates during the period considered (1970-1995). Furthermore, there is no reliable evidence that all the investment variables included in his analysis have any perceptible influence on economic growth. He therefore suggested the need for an institutional rearrangement that recognizes and protects the interest of major partners in the development of the economy. Examining the contributions of foreign capital to the prosperity or poverty of LDCs, Oyinola (1995) conceptualized foreign capital to include foreign loans, direct foreign investments and export earnings. Using Chenery and stout's two-gap model (Chenery and Stout, 1966) cited in Adeolu (2007), he concluded that Foreign Direct Investment (FDI) has a negative effect on economic development in Nigeria. Soyohalom (1999) stated that technological change plays a pivot role in economic growth. Multinational co-operation is one of the major channels in providing developing countries with access to advanced technologies, they stated further that the knowledge spill over may take place via imitation, completion linkages and training, although it is in practice but rather difficult to distinguish between their form channels, the underlying theory. Both above writers provided the analysis that imitation channel is based on the view that domestic form may become more productive by imitating the more advanced technologies or managerial practices of foreign firms. They argue that in the absence of FDI lower the cost of technological availability to local firms on the competition channel, they emphasise that the entrance of foreign firms intensifies local firms to become more efficient by upgrading their technology base.

Goldberg and Klein, (1998) asserted that FDI may encourage export promotion, import substitution, or greater trade in intermediate inputs which often exist between parent and affiliate producers. The orientation of most investments by multinational firms is towards exports and this may most likely serve as a catalyst for the integration of the FDI host economy to a global production network in sectors in which it may formerly have had no industrial experience (OECD, 1998).

Beriassary (2000) argues that the influence of real exchange rate on direct foreign investment is ambiguous and depends on the motivation of foreign investors for instance depreciation make local assets and production cost cheaper leading to higher inflows of FDI.

Also empirical evidence from different countries suggests that FDI plays an important role in contributing to economic growth. However, most studies generally indicate that the effect of FDI on growth depends on other factors such as the degree of complimentarily and substitution between domestic investment and FDI, and other country -specific characteristics.

Zhang (2001) and Choe (2003) analyses the causality between FDI and economic growth. They use data for 11 developing countries in East Asia and Latin America. Using co integration and Granger causality tests, Zhang (2001) finds that in five cases economic growth is enhanced by FDI but that host country conditions such as trade regime and macroeconomic stability are important. According to the findings of Choe (2003), causality between economic growth and FDI runs in either direction but with a tendency towards growth causing FDI; there is little evidence that FDI causes host country growth. Rapid economic growth could result in an increase in FDI inflows.

Li and Liu (2005), by using a single equation and simultaneous equation techniques, examined the relationship between FDI and economic growth on a panel of data for 84 countries for the period 1970 – 1999, and found a positive impact of FDI on economic growth through its interaction with human capital in developing countries, but a negative impact of FDI on economic growth through its interaction with the technology gap.

According to the study done by Pardeep Agrawal (2000) on economic impact of foreign direct investment in south Asia by under talking time -series , cross- section analysis of panel data from five south Asian countries , India , Pakistan , Bangladesh , Srilanka , and Nepal , that there exist complementarily and linkage effects between foreign and national investment . Further he argues that, the impact of FDI inflows on GDP growth rate is negative prior to 1980, mildly positive for early eighties and strongly positive over the late eighties and early nineties. Ngow (2001) stressed that FDI can be an engine of economic growth in a host economy such investment can sustain and improve economics development in a country or region, he emphasized that given the economic condition of Africa countries and its level direct investment in the region cannot be over emphasized. The continent needs to increase its share of global FDI inflows as one of the most likely ways to increase the needed external capital for its development.

Interestingly Bende-Nabende (2002) found that direct long term impact of Foreign Direct Investment (FDI) on output is significant and positive for comparatively economically less advanced Philippines and Thailand, but negative in the more economically advanced Japan and Taiwan. Foreign Direct Investment could be beneficial in the short term but not in the long term. Bonojour (2003) support the spill over channel of technological transfer by arguing that most important benefit of FDI and multinational co-operation on the host country is the increase of domestic firms' productivity. Nunnenkamp and Spatz (2003) however criticized the view that developing countries should draw on FDI to create economic development. They concluded that the growth impacts of FDI are ambiguous because of highly aggregated FDI data. By disaggregating FDI and considering the compatibility of different types of FDI on economic conditions prevailing in the host country, the positive growth effects of FDI are doubtful. There are a number of ways through which Trade flows and FDI can be linked.

Durharm (2004) for example, failed to establish a positive relationship between Foreign Direct Investment (FDI) and growth but instead suggests that the effects of Foreign Direct Investment (FDI) are contingent on the absorptive capability of host countries. Obwona (2001)notes in his study of the determinants of Foreign Direct Investment FDI and their impact on growth in Uganda that macroeconomic and political stability and policy consistency are important parameters determining the inflow of Foreign Direct Investment (FDI) into Uganda and that Foreign Direct Investment (FDI)affects growth positively but insignificant. There is further study done by Chowdhury and Mavrotas (2003) which examine the causal relationship between FDI and economic growth by using an innovative econometric methodology to study the direction of causality between the two variables. The study involves time series data covering the period from 1969 to 2000 for three developing countries, namely Chile, Malaysia and Thailand, all of them major recipients of FDI with different history of macroeconomic episodes, policy regimes and growth patterns. Their empirical findings clearly suggest that it is GDP that causes FDI in the case of Chile and not vice versa while for both Malaysia and Thailand, there is a strong evidence of a bi-directional causality between the two variables.

Jerome and Ogunkola (2004) assessed the magnitude direction and prospects of Foreign Direct Investment (FDI) in Nigeria. They noted that while the FDI regime in Nigeria was generally improved, some serious deficiencies remain. These deficiencies are mainly in the area of the corporate environment and institution of uncertainty as well as the rule of law.

Ricardo, Hwang and Rodrick (2005) argued that Foreign Direct Investment (FDI) provide a path for emerging nations to export the products developed economies usually sell, in effect increasing their export sophistication. Many developing countries pursue FDI as a tool for export promotion, rather than production for the domestic economy. Typically foreign investors build plants in nations where they can produce goods for export at lower costs. There have been some studies on investment and growth in Nigeria with varying results and submissions. For example, Odozi (1995) reports on the factors affecting Foreign Direct Investment(FDI) flow into Nigeria in both the pre and post structural adjustment programme (SAP) eras and found that the macro policies in place before the SAP were

discouraging foreign investors. This policy environment led to the proliferation and growth of parallel markets and sustained capital flight.

(FDI) is pro-consumption and pro-import and negatively related to gross domestic investment. Akinlo (2004) found that foreign capital has a small and not statistically significant effect on economic growth in Nigeria. However, these studies did not control for the fact that most of the Foreign Direct Investment (FDI) was concentrated in the extractive industry. In other words, it could be put that these works assessed the impact of investment in extractive industry (oil and natural resources on Nigeria's economic growth). On firm level productivity spill over, Ayanwale and Bamire (2001) assess the influence of Foreign Direct Investment (FDI) and firm level productivity in Nigeria and report a positive spill over of foreign firms on domestic firm's productivity.

Ayanwale (2007) investigated the empirical relationship between non-extractive FDI and economic growth in Nigeria, using OLS estimates he found that FDI has a positive link with economic growth but continued that the overall effect of FDI on economic growth may not be significant.

Loizi and Abadi (2011) also submit an econometric result which shows that FDI inflows do not exert an independent influence on economic growth and that domestic investment and trade linearization is found to be positive. Based upon these results the objective of the Jordan government is to attract FDI for development an appropriate policy mix is necessary to be in future. Maji and Odoaba (2011) investigated the impact of FDI on economic growth in Nigeria using linear regression and granger causality test and found that FDI has a positive impact on gross domestic product. In a related development, Moses (2011) reveals that non oil FDI and oil FDI effect on the Nigerian economy showed substantially valid and statistically significant values as both probabilities of t and the f statistic are significant. However, the finding revealed that nonoil FDI is more statistically significant and has high positive effect on the Nigerian economy on the average compared to oil FDI. He concludes that on the contrary, the extractive sector that has higher FDI in the Nigerian economy has less impact to economic growth.

Ekperiwale (2011) examined the sectoral impact of oil and non-oil FDI on Nigeria economic growth using OLS technique using data from 1970 – 2008. The extractive FDI (OILFDI) sector's effect on the Nigerian economy showed substantiated valid and statistically significant values. However, there was positive autocorrelation of the variables. Findings revealed that NON-OIL FDI is more statistically significant and has more positive effect on the Nigerian economy on the average compared to OIL FDI. Contrary, the extractive sector that has higher FDI in the Nigerian economy has less impact to the economic growth. He research strongly advice government and all stake holders to encourage FDI into the non-oil sector that has more economic returns in the form of human capital, employment, local contents that extractive sector dominated by expatriates. The local content policy should be strengthened more in the extractive industry to annex the gains of that sector to economic growth.

Danja (2012) investigate the relationship between FDI and major economic indicators such as GDP, gross fixed capital formation (GFCF), foreign direct investment (FDI), to the growth and development of the Nigerian economy using OLS estimates and it reveals a positive relationship between FDI and those Variables but FDI has not contribute much to the growth and development of Nigerian economy and was evidence due to repatriation of profits, contract fees and interest payment on foreign loans.

Babalola, Dogon-Daji and Saka (2012), examined the relationship among exports, Foreign Direct Investment (FDI) and economic growth in Nigeria over the period 1960-2009. The time series properties of the variables were examined using the Phillips-Peron technique due to its robustness to a wide variety of serial correlation and heteroscedasticity. The results of Johansen co-integration test indicate existence of at least six co integrating vectors. The error correction coefficient shows that deviation from long run RGDP path is corrected by about 48% over the following year. As a way of correcting for multi co linearity, they re-estimate the models of the static regression using a Fully Modified Least Squares Method (FMOLS) and error correction coefficient. They find out that the removal of Degree of openness (DOP) variable may be detrimental even though the percentage deviation from equilibrium does not seem to change. They conclude by shedding more light on the relevance of the degree of openness and this can facilitate more FDI inflows capable of accelerating the growth process. They recommend immediate focus on more reforms/policies that will create

enabling environment for FDI inflows and export growth thereby reducing the growth and development barriers in Nigeria. Abdulmumini and Tukur (2012) investigate the relationship between domestic investment and economic growth in Nigeria. They used multiple regression technique and found that domestic investment impacted positively on economic growth in Nigeria. For the short run relationship they found a significant feedback causality running from domestic investment to economic growth and vice versa. Villa (2008) applies a multivariate time series analysis on output growth rate, investment and government consumption in Italy from 1950 to 2005, and found that the causality runs from domestic investment to economic growth. Qin et al (2006) investigate causal relationship between domestic investment and economic growth and found that the causality runs from economic growth to domestic investment. Tang et al (2008) investigate the causal link between foreign direct investment, domestic investment and economic growth for the period 1988 to 2003 in China through the application of multivariate VAR system with error correction model (ECM). They found that domestic investment and economic growth are positively correlated; as such great economic growth spurs large domestic investment. The implication of their result is that China's domestic investment has a greater impact on economic growth than foreign direct investment (FDI). Anti and Zhao (2013) establish on the impact of foreign direct investment and economic growth in Ghana that a long run equilibrium and causal relationship exists between FDI and GDP and GNI. They determined that short run effects of GDP and GNI volatility on are nearly imaginary. They conclude that these findings hold practical implication for policy makers, government and investors. There are very few studies conducted on the impact of domestic investment on economic growth in Nigeria. Kowalski (2000) argues that domestic investment is a fruitful indicator for economic growth. Thus, domestic investment can serve as a means of faster and sustainable channel for modern economic growth, particularly through capital formation, productivity, infrastructural development, export, thereby making the domestic investors to automatically seek out the most favourable investment opportunities.

3. METHODOLOGY

3.1. Sources of Data

The time series data were derived from various secondary sources such as: the Central bank of Nigeria statistical bulletins, Economic and Financial Review and Annual reports and statement of accounts and Federal Office of Statistics (FOS). Data were also extracted from Debt Management Office (DMO) publications and website. The macroeconomic data cover gross domestic product (GDP) and external debts between 1980-2013. The data gathered were subjected to various econometric tests with the aid of e-views.

The estimated techniques includes the Ordinary Least Square (OLS) method, Augmented Dickey-Fuller (ADF) unit root test, Johansen Co-integration test and Error Correction Method (ECM). The estimations follow three step modelling procedure.

- Employing Augmented Dickey-Fuller Unit root test to make non-stationary variables stationary to overcome spurious results.
- After establishing stationary of the data, Johansen Co-integration test is applied to determine whether a long run relationship exist among the variables in question.
- When it is established that the variables are co-integrated, an over-parameterized model (ECM1) is developed which involves leading and logging of the variables after which parsimonious model (ECM2) is built in accommodate short-run dynamic in the model.

3.2. Model Specification

The econometric form of the model is specified as: $GDP = f(\text{fdi}, \text{din}, \text{tex}, \text{tp})$ and the econometric equation is thus:

$$gdp = \alpha + b_1 \text{fdi} + b_2 \text{din} + b_3 \text{tex} + b_4 \text{tp} + u_t, \text{ where};$$

RGDP = real Gross Domestic Product, fdi = foreign direct investment, din = domestic investment, tex = total export, tp = trade liberalization which is proxied by openness of the economy and measured by $(EXP + IMP) / GDP$, u_t = Error term

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α = Intercept of relationship in the model, b_1 - b_4 = Coefficients of independent variables and the a priori for the coefficients in the model are $b_1, b_2, b_3, > 0$

The error correction model (ECM) is as follows:

$$\Delta \text{LogRGDP}_{t-1} = \alpha + \sum \text{Log fdi}_{t-i} + \sum \text{Log din}_{t-1} + \sum \text{Log tex}_{t-1} \sum \text{Log tp}_{t-1} + + \sum \text{ECM}_{t-1}$$

Where: ECM_{t-1} = Error Correction term, $t-1$ = Variable Lagged by one period.

4. RESULT AND DISCUSSION

Table1. Regression Results

Dependent Variable: LOGRGDP				
Method: Least Squares				
Sample: 1992 2013				
Included observations: 22				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.741308	0.661346	2.632977	0.0174
LOGFDI	0.112842	0.076507	1.474912	0.1585
LOGDIN	0.685470	0.098905	6.930617	0.0000
LOGTEX	0.335817	0.121800	2.757122	0.0135
TP	0.082415	0.271059	0.304048	0.7648
R-squared	0.968443	Mean dependent var		9.159984
Adjusted R-squared	0.961018	S.D. dependent var		1.321537
S.E. of regression	0.260923	Akaike info criterion		0.347537
Sum squared resid	1.157378	Schwarz criterion		0.595502
Log likelihood	1.177089	Hannan-Quinn criter.		0.405950
F-statistic	130.4263	Durbin-Watson stat		0.969471
Prob(F-statistic)	0.000000			

4.1. E-Views 8 Output

Table 1 contains multiple regression results for economic growth proxy by RGDP, foreign direct investment, domestic investment, total exchange rates and trade liberalization proxy by openness (i.e. Export + Import/ GDP) in Nigeria. The results indicate that the constant, the coefficients of domestic investment (DIN) and total foreign exchange rates (TEX) are statistically significant while the coefficients of foreign direct investment (FDI) and trade liberalization (TP) were found to be statistically insignificant. Precisely, the constant, coefficients of domestic investment (DIN) and total foreign exchange rates (TEX) are found to be statistically significant at 5 per cent, 1 per cent, and 5 per cent level respectively as indicated by their probability values of 0.0174, 0.0000, and 0.0135 respectively. The coefficient of foreign direct investment (FDI) and trade liberalization (TP) were found to be statistically insignificant at 15.85 per cent and 76.48 per cent respectively as indicated by their probability values of 0.1585 and 0.7648 respectively. The coefficients foreign direct investment (FDI), domestic investment (DIN), total foreign exchange rates (TEX) and trade liberalization (TP) were rightly signed (positive) and consistence with theoretical expectation this study. The constant value of 1.741305 agrees with the Keynesian postulate that GDP has autonomous component. The regression results implies that 1 unit change in foreign direct investment (FDI), domestic investment (DIN), total foreign exchange rates (TEX) and trade liberalization (TP) raises economic growth rate (RGDP) by 0.12842, 0.68547, 0.33582 and 0.08242 units respectively. The F-statistics value of 130.4263, which measure the joint effects of the explanatory variables, was found to be significant at 1 per cent as indicated by the corresponding probability value 0.000000. This implies that the variables of the model are jointly and statistically significant affected economic growth (RGDP) in Nigeria for the period under study.

The R^2 value of 0.9684 implies that 96.84 per cent total variation in economic growth (RGDP) in Nigeria was explained by foreign direct investment (FDI), domestic investment (DIN), total foreign exchange rates (TEX) and trade liberalization (TP). Coincidentally, the goodness of fit of the regression remained high after adjusting for the degree of freedom as indicated by the adjusted R^2 ($R^2 = 0.9610$ or 96.10%). This implies that the model of this study is reliable for policy. The R-Square suggested that not only the included variables of the model that affect economic growth rate in Nigeria, but there are other variables, although their influence is highly insignificant than those

variables captured in the model. The Durbin-Watson statistics (0.969471) in table 1 is higher than R^2 (0.9684) indicating that the model is non-spurious and meaningful. The Durbin-Watson statistics value of (0.969471) is very low and less than 2 indicating the presence of/or positive autocorrelation. This provides the basis for conducting unit root test.

Table2. Unit Root Test Results for GDP, FDI, DIN, EXR and TP

VAR	CRITICAL VAL (1%)	ADF 1(1)	CRITICAL VAL (1%)	PP 1(1)	PROB. (ADF)	PROB. (PP)	REMARK
INRGDP	-3.8086	-4.3335	-3.8086	-4.4909	0.0033*	0.0023*	1(1)
INFDI	-3.8086	-4.5994	-3.8086	-4.5994	0.0018*	0.0018*	1(1)
INDIN	-3.8086	-4.9276	-3.8086	-5.6864	0.0009*	0.0002*	1(1)
INTEX	-3.8086	-3.9956	-3.8086	-3.9906	0.0067*	0.0068*	1(1)
INTP	-3.8086	-5.4936	-3.8086	-6.0169	0.0003*	0.0001*	1(1)

*Stationary at 1percent

ADF = Augmented Dicky Fuller Statistics

PP = Phillips-Perron Statistics

The results of unit root test were contained in table 2. The results of both ADF and PP revealed that all the variables of the model were stationary at 1percent as indicated by their probability values. The result further indicate that economic growth rate (RGDP), domestic investment (DIN), foreign direct investment (FDI), total foreign exchange rates (TEX), and trade liberalization (TP) were stationary at first difference 1(1). The ADF and PP statistics for all the variables are less than the critical values in negative direction. These results provide the basis for conducting Engel-Granger error correction test (ECM).

Table3. ECM Unit root test result

Null Hypothesis: ECM has a unit root				
Exogenous: Constant				
Lag Length: 0 (Automatic - based on SIC, maxlag=1)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-3.523059	0.0176
Test critical values:	1% level		-3.788030	
	5% level		-3.012363	
	10% level		-2.646119	

The results of ECM unit root test were contained in table 3. The results of ADF revealed that ECM residuals are stationary at 5percent as indicated by its probability value of 0.0176. The result further indicated that the ECM residuals are stationary at level 1(0). This result supports the adoption of ECM techniques in testing the speed of adjustment in the long run of the included variables.

Table4. Error Correction Model Parsimonious Results

Dependent Variable: RGDP				
Method: Least Squares				
Date: 04/01/15 Time: 09:20				
Sample (adjusted): 1995 2013				
Included observations: 19 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	8.918255	0.487555	18.29181	0.0000
D(RGDP(-1))	3.614299	1.971000	1.833739	0.0999
D(RGDP(-2))	2.338622	1.317485	1.775066	0.1096
D(FDI(-1))	0.144493	0.291815	0.495153	0.6324
D(FDI(-2))	-0.573933	0.447951	-1.281242	0.2321
D(DIN(-1))	-0.320481	1.274423	-0.251471	0.8071
D(TEX(-1))	-2.682377	1.302572	-2.059292	0.0696
D(TEX(-2))	-2.009094	1.134029	-1.771642	0.1102
D(TP(-2))	-0.818724	1.441765	-0.567862	0.5840
ECM(-1)	-0.559055	1.133927	-0.493025	0.6338
R-squared	0.590317	Mean dependent var		9.500389
Adjusted R-squared	0.180633	S.D. dependent var		1.065103

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S.E. of regression	0.964120	Akaike info criterion	3.070214
Sum squared resid	8.365739	Schwarz criterion	3.567287
Log likelihood	-19.16704	Hannan-Quinn criter.	3.154339
F-statistic	1.440910	Durbin-Watson stat	2.222851
Prob(F-statistic)	0.297535		

4.2. E-Views 8

The results of ECM were contained in Table 4. The coefficient of ECM shows the speed of adjustment to the deviation in the long run equilibrium. The negative value of the coefficient of ECM implies that there is a long run relationship between economic growth (RGDP), foreign direct investment (FDI), domestic investment (DIN), total foreign exchange rate (TEX) and trade liberalization (TP). The value of the coefficient of ECM (-0.559055) shows that the data will adjust by 55.91 per cent to go back to equilibrium in the long run. Precisely, -0.559055 implied that when there is a state of disequilibrium between economic growth (RGDP), foreign direct investment (FDI), domestic investment (DIN), total foreign exchange rate (TEX) and trade liberalization (TP) will be brought back to equilibrium in at least two years' time. The R^2 value of 0.5903 shows that 59.01 per cent variation in economic growth (RGDP) in Nigeria was explained by the included variables of model after the error in the model has been corrected; this further implies that the model is fit to explain the relationship between economic growth (RGDP), foreign direct investment (FDI), domestic investment (DIN), total foreign exchange rate (TEX) and trade liberalization (TP). The Durbin Watson statistics value of (2.222851) shows the absence of autocorrelation; hence the model is non-spurious and can be used for policy purpose.

Table5. Serial correlation results

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	1.744542	Prob. F(2,7)	0.2428
Obs*R-squared	6.320151	Prob. Chi-Square(2)	0.0424

The results of Breusch-Godfrey serial correlation LM test are contained in table 5. The results revealed that there is absence of serial correlation in the model which further confirmed the Durbin Watson statistics values in parsimonious ECM results. The null hypothesis of no serial correlation is accepted at 24.28 per cent level of confidence as indicated by the F-probability value of 0.2428 in Table 5.

Table6. Heteroscedasticity test results.

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	0.520421	Prob. F(9,9)	0.8276
Obs*R-squared	6.503461	Prob. Chi-Square(9)	0.6887
Scaled explained SS	2.313108	Prob. Chi-Square(9)	0.9855

The results of Breusch-Pagan-Godfrey Heteroskedasticity test are contained in table 6. The results revealed that there is absence of Heteroskedasticity in the model. The null hypothesis of no Heteroskedasticity is accepted at 82.76 per cent level of confidence as indicated by the F-probability value of 0.8276 in Table 6.

5. CONCLUSION AND RECOMMENDATIONS

This paper investigates the relationship between economic growth (RGDP), foreign direct investment (FDI), domestic investment (DIN), total foreign exchange rate (TEX) and trade liberalization (TP) in Nigeria. The properties of time series variables were examined through the application of Augmented Dickey-Fuller and Phillip-Perron technique in testing the unit root property of the series, Engel-Granger ECM technique in testing the long run adjustment speed of the model, Breusch-Godfrey serial correlation test, after which Breusch-Pagan-Godfrey test of heteroskedasticity, was used. The results of the OLS revealed that foreign direct investment (FDI), domestic investment (DIN), total foreign exchange rate (TEX) and trade liberalization (TP) impacted positively on economic growth (RGDP) in the Nigeria. The results of unit root suggest that all the variables in the model are stationary at first difference $d(1)$. The ECM result revealed the existence of long run relationship between economic growth (INRGDP), foreign direct investment (FDI), domestic investment (DIN), total foreign exchange rate (TEX) and trade liberalization (TP). The speed of adjustment was found to

be at least two years for the long run equilibrium. This paper found that, there is no serial correlation among the error values. The result further revealed the absence of heteroscedasticity in the error term. This makes it possible for the results of this paper to be used for policy purposes. In conclusion, this paper found a positive and significant relationship between economic growth, domestic investment and total foreign exchange rates in Nigeria. Therefore, this paper recommends that concerted effort be made by government, policy makers and relevant authorities to formulate policies aim at creating a conducive investment environment so that Nigerians and non-Nigerian investors alike will be encourage to increase their propensity to invest in the country. Policy makers should also take step to ensuring foreign exchange stability and improve trade liberalization (openness of the economy) so as to achieve meaningful economic growth.

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