The Influence of Investments on Economic Growth: The Case of Nigeria

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Abstract: The study dwells on the effect of domestic investment, foreign direct investment and economic openness on the economic growth of Nigeria from 1970-2012. The approach of vector error correction model was adopted after some descriptive statistics, series of tests of the time series property and diagnostic tests. The study found amongst others the insignificant effect of the domestic investment in promoting growth at the period of study. The response of the foreign direct investment on growth was not satisfactory and was envisaged to be due to Nigeria is dominantly agrarian economy with insufficient technology and weak manufacturing sector needed to enhance sophisticated foreign production. Openness result seems inconclusive and unsatisfactory but further analysis depicted desirable effect in the long-run of its operation. Consequently, among the policy implications made were: fiscal and monetary incentives should intensively be pursued to encourage and stimulate domestic investments in small, medium and large scale industries especially in the rural areas dominantly occupied by the large proportion of the populace; acceleration of technological innovation needed by foreign investors and institutional reforms, elimination of double taxation, high import tariffs in some sectors of the economy should be avoided.

Keywords: Economic, growth, investment, openness.

Jel Classification: E22, O40, F43

I. INTRODUCTION

Nigeria is really an oil rich nation but the leadership over the years could not diversify the economy. So, the country relied heavily on the proceeds from oil as a major source of financing the social, economic and political activities. However, the myopic perception of the political power holders or the resource managers impeded effective use of realised income for investment which culminates to the ugly experience and low living standard of today (Index Mundi, 2014 and CIA World Fact-Book, 2013). Deficiency of public investment in infrastructure and the snail speed implementation of reforms constitute the major key debility to growth and advancement.

Actually, countries engage in varieties of activities aimed at accelerating economic development and growth. Public investment is usually employed as a veritable engine of development and growth. This is because improvement in the living standard of the people depends on efforts geared toward increasing aggregate economic activities which involves enough investment, effective and efficient utilisation of the resources of the society and increase in aggregate productivity. Investment is the intentional increase in the stock of capital. In the view of Keynesians, investment depends on income. In Nigeria, low income has played unqualified role in inability to raise sufficient capital for investment. So, lack of and improper utilisation of available capital has contributed adverse influence in investment in capital overheads, developmental infrastructure and other productive ventures. Besides, the skewed investment in the urban with little or nothing in the rural areas dominantly occupied by Nigerians has large negative effects. Consequently, the acceleration of economic growth is seriously damnified.

Economic growth as conceived by Abiola and Egbuwalo (2010) is the ability of a country to expand her production possibility curve to rise above its previously operating level. In addition, growth is perceived to imply a sustained rise in real per capita income of a nation. It can specifically be stated that economic growth involves a long term rise in the capacity of a given nation to continuously supply various economic goods to her populace such that the citizenry has sufficiency for consumption. But suffice it to note that economic development is synonymous to growth. Meier (1980) posits that economic development is the process whereby the real per capita income of a country increases over a long period of time-subject to the stipulations that the number of people below an "absolute poverty line" does not increase, and that the distribution of income does not become more unequal. This implies improvement of lives of the people beyond what it was in the past, and what can specifically guarantee this noble

attainment are investments. The rates of investment and population growth in Nigeria given the present high level of resource unemployment do not correspond to output and income growth capable of adequate living standard.

The situation has been demoralising considering the fact that very few people at the helm of affairs are becoming wealthy and wealthier everyday while the majority of the people are deteriorating in all ramifications. The critical situation of insufficient public infrastructural investment has to a great extent discourages domestic and foreign private investment. Lack of conducive and favorable investment environment is inimical to the desired economic acceleration capable of repositioning declined low productivity and low per capita income. Consequently, the level of overall development and living standard of the people is below expectation, and so the average Nigerians live below poverty line. Besides, other social, economic and political factors in Nigeria led to classifying the country as one of the poorest economies in the global community of nations, notwithstanding her richly endowed with mineral and manpower resources.

Actually, investment implies intentional expenditure that is channeled to raising or maintaining the stock of capital. In this respect, the stock of capital includes tangible assets or products, plants and machines and so on which support production (Dornbusch & Fischer, 1981). Human capital training and provision of infrastructure which are relevant factors needed for encouraging economic activity depend on investment.

Investment can be inform of domestic, foreign private and public investment. Bakare (2011) points out that public investment consists of government, and public enterprises capital expenditure on social and economic assets. This aspect of investment is imperative and fundamental for other aspects of investment. Many scholars argued and disagree with the role allotted to investment in the economic growth process. Whatever view held about the impact of investment in development and growth of an economy, the effect of investment in machinery and equipment is considered as a main determinant of growth (De Long and Summers, 1991 and 1993). Further studies have established positive correlationship between private investment and growth, and the envisaged complementarities between private investment and public investment (Kahn and Reihart, 1990; Serven and Solimano, 1992; Kahn and Kumar, 1997). Other studies have stressed on the positive effect of foreign direct investment and infrastructure on growth and development (Lim, 2001; Olosfsdotter, 1998; Easterly and Serven, 2003).

The role assigned to investment in the process of economic growth is relevant to growth theory and policy making. Relevant questions are should Nigeria focus on investment of capital overhead only? Can private and foreign investment perform well without adequate monetary and fiscal incentives? The infrastructure level in Nigeria is it sufficient for investment encouragement? We hope to answer these questions in this study.

The Central Bank of Nigeria (2012) indicates that the percentage of average manufacturing capacity utilization (AMCU) has been unstable over the years due to insufficient public investment. In the year1981, the average manufacturing capacity utilization stood at 73.3%, by 1985, it fell to 38.3%, in 1990, it rose to 40.3%, but fell to 29.29% in 1995. By 2000, it rose slightly to 36.1% and 54.8% in 2005 and fell slightly to 53.8% in 2008. The level of resources utilisation capable of accelerating productivity has to a great extent been hampered by low investment situation in the country. Many resources are idly unemployed due to insufficient capital over heads, lack of long term industrial investment and the attitude of many Nigerians who usually opt for investment in services industries such as hotels and filling stations instead of extractive and manufacturing industries. The latter aspect of industry is capital intensive but it has the ability to absorb large number of workers, utilise domestic raw materials and has a multiplier effect due to uprising of interdependent industries and small and medium scale businesses establishment.

A country like Nigeria that is highly populated supposed to have a befitting investment capable of harnessing the abundant resources, but the reverse is the case owing to shortsightedness, corruption, selfishness, improper monitoring of policies implementation and poor targeting of public expenditure. In addition, low investments over the years have not been favourable to the level of productivity capable of ensuring adequate employment of inputs of production and bring about growth. For instance, CBN annual statistics of various issues show that investment in millions of naira between 1981-1995, was N5662.5, it rose to N10,397.42, and N36,138.82 between 1986-1990 and 1991-1995 respectively. By 1996-2000, investment stood at N142,964.3 and by 2001-2004, it got to N188,943.1. Although, investment is rising over the period, but it is far below the required level needed in harnessing the resources of the country and improving poor economic situations. Consequently, Nigeria imports heavily and exports more of raw materials. So while total non oil import is continuously rising, the total non oil export is moving at Tortoise speed. For instance, CBN (2012) data show that total non oil import in 2005 and 2010 stood at N2,800,856.3 and N5,857, 515.5 million respectively whereas the total non-oil export was respectively N105,955.9 and N40, 585.6.1 million. In 2012, total non-oil import rose to N6, 020, 198 while total non-oil export

rose slightly to N4, 761, 10.7. Excessive importation buttresses the lack of required industries due to low investment. Hence, more import and less export.

From the ongoing, it is seems that the desires of Nigerians with respect to industrialisation which is one of the results of sufficient investments and creation of employment opportunities have not been met owing to inadequate investments in every facet of the economy. Be it as it may, the broad objective of this study is to ascertain the influence of investments in promoting economic growth and development of Nigeria. Specifically, it is our intention to examine the impact of domestic investment, foreign private investment and economic openness on the real gross domestic product (a proxy for economic growth).

For this reason, the paper is streamlined thus: section two is the literature review (theoretical and empirical); section three is the methodology, data analysis and presentation of results while the last section is policy implications and conclusion.

The study is expected to expose the extent of growth and development of Nigeria economy resulting from openness of the economy, domestic and foreign investment which the country has aspired over the years. The study will also help in the design of relevant policy that will promote development and growth.

Justification/Need of the Study

Since after independence, Nigerian leaders have focused on development and growth. Fiscal and monetary incentives put in place to encourage both domestic and foreign investment. This is because investment is known to be a vital tool for increasing input use that has the capability to increase output, income and employment, thereby raising living standard. In view of the poor living standard of the people in spite of the pursued level of investment, it becomes necessary to empirically ascertain the effects on growth over the years with a view to come up with a desirable change or otherwise.

II. LITERATURE REVIEW

Theoretical Literature

Undoubtedly, they have been various arguable and disagreement perceptions over the choice of approaches and strategies for proper resources allocation necessary for economic growth. Keynes (1936) focused on investment as an indispensable driving force for propelling aggregate demand and short-run fluctuations in economic activity. His perception is that investment is an engine of economic development and growth. Besides, evident in the theory is that financial and monetary conditions affect firms' capital spending. Fazzari (1989) points that the neoclassical tradition questioned whether purely financial factor can really have an impact on a phenomenon like investment. This is because such a result contradicts the optimizing basis for microeconomic decision-making that characterizes the neoclassical view. The neoclassic, Jorgenson (1963) has his base that capital accumulation is imperative, and its optimal investment in the fundamental preferences and technology that characterize the economy. To him, purely financial condition does not affect investment.

In a related perspective, Ozoh (2010) asserts that the neoclassical economists attach importance to technological progress and innovation in checking economic stagnation caused by economic and non-economic factors. Keynes also advocates states involvement in increasing the growth of an economy through investment. It is so imperative since capital overheads provision by the government is a way of making the economic milieu conducive for further investment and effective resources utilization. Rodan (1947) in his "Big Push thesis" insists on sufficient quantum of investment in various strategic sectors capable of sustaining the necessary interdependence among various sectors of an economy so as to enhance aggregate production and consumption which invariably will bring about income generation that will encourage economic development and growth. In his consideration of tackling the vicious circles of poverty usually experienced in developing economies, Nurkse (1961) stressed on the necessary condition which is a wave of capital investments in a good number of different industries which will encourage production that will raise aggregate supply and aggregate demand, thereby promoting income generation, savings, consumption and investment. In a similar vein Hirschman (1964) posits that investments in strategically chosen sectors of a country will significantly lead to further investments opportunities, hence giving room for economic development.

The endogenous growth theorists have different views from the Keynesian and the neoclassical. The endogenous growth theory focused so much on investment in human capital as an indispensable facet of production. The endogenous growth models value human capital development as an imperative for growth and development of an economy. It implies the existence of a variety of endogenous mechanisms involving improvement of human productivity ability and aids to human labour that is essential in fostering economic growth and opines the need for

public policy makers to incorporate it. These endogenous perspectives can be seen in the works of Romer (1986), Lucas (1988),Mankiw, Romer, Weil (1992).

For instance, Romer (1986) analysis assumes that technological change is endogenous and that private investment raises the level of technology for the whole economy. This is because the positive externalities emanating from or associated with private investment brings about a type of production function that exhibits increasing returns to scale. Besides, increase in private investment raises growth in a steady-state. In a similar vein, Lucas (1988) has the conception that investment in human capital has spillover effects that promotes sustained growth. Suffice it to note that actually, changes in economic policies and accumulation of physical and human capital stocks have influence on growth. Grossman and Helpman (1991) posit that private investment brings a unique linkage between imported technology and economic growth. Importation here involves the acquisition of developmental gadgets required for increased production which is increasing of capital stock.

The important fact is that increase in physical stock of capital by either public or private sectors is essential for accelerating positive economic effects in an economy. However, a developing country such as Nigeria is confronted with greater actions in investment in capital overheads such as regular power supply, good road network, training centres, research and development, transportation sector, productive ventures, among others and investment in training and human capital development. This is because the existence of sufficient capital overheads promotes both domestic and foreign investments which are capable to absorb various inoperative resources of the country which will be converted into intermediate or finish products for domestic utilisation and international consumption, thereby raising aggregate supply and demand which invariable brings in income for further investment. Consequently, capital is expected to increase where there is abundant of capital.

Protagonists of trade openness such as Romer (1988), Lucas (1988), Grossman and Helpman (1991) have articulated the inflow of resources in form of physical and human capital into an economy due to openness, thereby promoting economic activity with its associated positive effects. However, the Keynesian proposition is the bed-rock of this study. This is on the ground that investment is taken as the key engine of economic growth. So, we intend to ascertain the effects of physical investment on the Nigerian economy over the years given the series of investments that have taken place by economic agents.

Empirical Literature

Economists and other scholars have delved into studies focusing on investments and overall economic growth and development. The main intention has been to unravel how sufficient investment is a pre-requisite for moving a country at a certain stationary or low economic status to a dynamic and progressive level needed to uplift the social, economic, political and the environmentof the people in order to live a better life devoid of poverty. It is believed by many scholars that there is serious infrastructural gap in third world economies and economic growth is attainable by sufficient close of the gap which will improve demand cum patronage by developed economies, thereby raising the needed capital for further investment.

On this note, Baghebo and Edoumiekumo (2012) empirically investigated domestic private accumulation and economic development in Nigeria using co-integration and error correction model of data analysis and found that the variables private investment, public investment, real interest rate and inflation rate impacts positively on real gross domestic product. The outcome of data analysis implies a high degree of macroeconomic stability and a low inflation rate are imperative to ensure desirable effect of private investment on economic progress. From the study, it can be inferred that giving adequate environmental, monetary and fiscal incentives to private investment to thrive, the expected and required economic development has a high rate of propelling the economy forward. In a related vein, Gutiérrez (2005) examined the role of investment and other growth sources in the economic growth in Latin America from 1960 to 2002 using growth accounting and regression analysis for data obtained from six largest Latin American countries: Argentina, Brazil, Chile, Colombia, Mexico and Venezuela. The study found among others that investment in machinery, equipment and private investment were most effective in increasing per capita gross domestic growth. The study also found evidence of policy on education as contributory to growth, causality relationship exist between private investment and growth and inconclusive evidence of growth coming from the incidence of foreign direct investment and infrastructure on private investment.

Okogun et al (2012) examine the economic value of investment in integrated communication technology (ICT) in Nigeria using ordinary least square method. They found the high increase in investment in ICT since 2001 due to liberalization of the telecommunication industry and also the investment in the telecom industry has promoted economic growth which raised private investment in the industry, thereby contributing significantly on the country's growth. This supports studies that investment in productive machines and equipments is a growth propelling factor (De Long and Summers, 1991 and 1993).

Umoh et al (2012) empirically investigated the relationship between foreign direct investment and economic growth in Nigeria between 1970-2008. The study found that there is bidirectional relationship between FDI and economic growth in Nigeria, that is, FDI contributes to growth which in turn promotes FDI. The study encourages further openness and increased Private participation is essential to ensure that Nigerian economy benefits from FDI and heightens economic growth rates.

Qin et al (2005) empirically examined the authenticity of growth due to investment in China. Among the findings are that market demand has been a regular propeller in driving investment. Besides, the study shows that government investments play a desirable role in intensifying investment cycles, and also effective in encouraging employment and rising consumption has the power to sustain growth, thereby promote constant-return –to scale in the long run effect on gross domestic product.

Ghura (1997) investigated private investment and endogenous growth; evidence from Cameroon employing the ordinary least square method. The revelation of the result supports the endogenous growth model which include: the aggregate production function shows increasing returns to scale; private investment amplification have large, strong and significant effect on growth; government investments increase impact positively on growth; human capital advancement contributes meaningfully in output expansion; positive externalities are seriously derived from physical and human capital expansion and finally, growth is enhanced by economic policies which promotes external competitiveness and judicious fiscal position.

Warner (2014) empirically examined the role of big infrastructure and public capital in successfully propelling the economic growth in low income countries. The study revealed that on the average, the evidence denotes weak positive association between investment spending and growth, and there exists a little long run positive effects. But an exception to this situation is Ethiopia that its high public investment gave rise to high growth rate of gross domestic product. The study also brings up the issue of public investment funds was sourced from loans which requires proper and serious analytics so as to derive adequate benefits.

From the forgoing, it is undisputable that various investments by different economic agents such as the government, private sector and foreigners have played varieties of roles in revamping a depressed economy. Nigeria over the years has had such investments but the level of economic activity, development and growth seems lagging behind expectation. In this paper, it is our intention to empirically investigation the role of investments in revamping Nigerian economy.

III. METHODOLOGY

Data and Scope

The required variables for this study are domestic investment, foreign private investment, openness and real gross domestic product which are time series data obtained from Central Bank of Nigeria Statistical Bulletin(2009, 2012). Data availability is the major reason for the choice of these areas of investment. The scope of the study is mainly domestic, foreign private investment and trade openness from 1970 to 2012. The reason is that the different leaders of the country, ranging from the military to civilian have at different times embarked on some forms of investment that is creation of investment environment and promoting trade openness as a way of accelerating growth of the economy. Variables included are a vector of Real Gross Domestic Product (RGDP), ratio of imports and exports to real GDP (OPEN), domestic investment (DINV) and foreign private investment (FPINV). The RGDP will be used as a proxy for economic growth of which measure the overall economic performance of Nigeria over the years of study while DINV and FPINV reflects the Nigerian investment positions over the years. The control variable; OPEN, will basically measure the trade policy impacts on the economic growth of Nigeria. Furthermore, a robust trade openness policy and investment friendly environment above all things is expected to positively contribute to the economic growth of a typical developing country such as Nigeria. However, the relative magnitude of such an impact may have varying effects which is very much depends on the country's unique characteristics and economic framework (Makki et al 2004). All variables were in their natural log forms. Also, our statistical software used for the estimates so far has been a JMulTi4 Software while STATA 11 was used to depict the graphical characteristic of all variables.

Model Formulation and Data Analysis Approach

From Keynes theoretical analysis, investment is the engine for economic development and growth. Investments on infrastructure and industries for instance do show multiplier effect in the sense that many investors (domestic and foreign) are motivated by that to opt for investment. Consequently, there will be increase in inputs use and income generation. This also implies that various investments in an economy have the power to reposition resources utilisation, production and consumption in such a way to raise aggregate economic activity, thereby

changing positively the macroeconomic variables such as output, income and employment. On the basis of this, our model is stated thus: real gross domestic product(RGDP), a proxy for economic growth is a function of domestic investment (DINV), trade openness (open) and foreign private investment (FPI). Mathematically, Rgdp = f(Fpinv, Open, Dinv), that is $Rgdp = B_1 + B_2 Fpinv_t + B_2 Open_t + B_3 Dinv_t + U_t$

Where Rgdp = Real gross domestic investment in period $_t$

Fpinv= Foreign private investment in period $_t$

Dinv = Domestic investment in period $_t$

Open = Trade openness (import/real gross domestic product) in period $_t$

U_t= Error term or stochastic variable while $_t$ is time trend.

$\beta_1 - \beta_3$= Coefficients of the independent variables.

On apriori bases β_1, β_2 and β_3 are expected to be greater than one, that is have a positive relationship with economic growth if and only if they are having effects on Nigerian economy. β_0 is the intercept which shows the effect on the economic growth (proxied by real gross domestic product) when all the independent variables are constant. If investments are favourable to Nigeria, the independent variables should contribute positively to economic growth.

Descriptive Statistics

Figure 1 reveals that RGDP and FPINV depict gradual and upward movements over time. Particularly, RGDP shows an increase between2000-2012. These periods coincide with democratic dispensation, including the adoption of several macroeconomic policies. For instance, the liberalization and expansion of the telecommunication industry saw the operation of foreign owned transnational corporations such as MTN. The adoption of National Economic Empowerment and Development Strategy (NEEDS) in 2003 also paid a great deal of attention in explicitly attracting foreign investors and by extension accelerating massive economic growth and in line with the millennium development goals (MDGs) (UNCTAD 2009). Similarly, DINV also shows a sharp upward trend, but with a declining effect from 2010. The years 2010 and 2011 is the electioneering periods which diverted every essential domestic investment programme for political and power retention by the President Goodluck Jonathan led administration. In Figure 2, which capture the ratio of imports and exports to RGDP. The graph shows an inconsistent behaviour of the trade openness variable.

Figure1: Real GDP, Foreign Private Investment and Domestic Investment
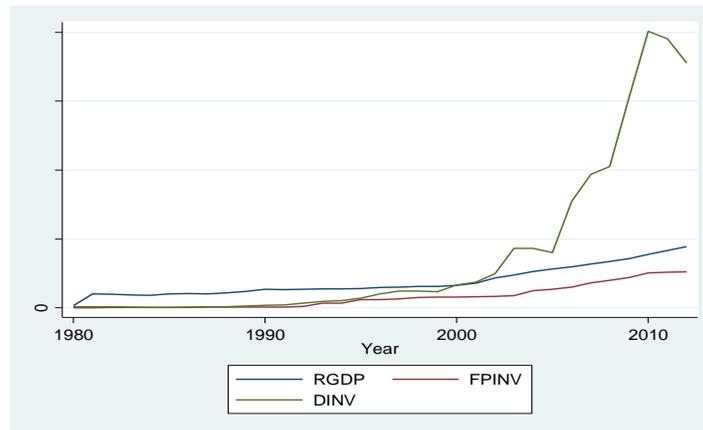
Figure 2: Trade Openness Variable.
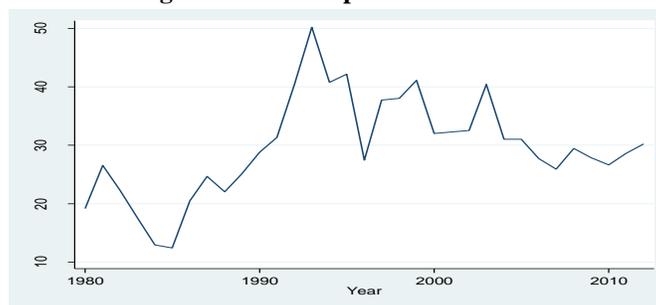
Unit root tests

Before any empirical analysis is performed, a unit root test for the series is performed using the traditional Augmented Dickey Fuller Test (ADF) Fuller (1976) to ascertain the stationarity of the variables. A series that has a unit root suffers permanent or prolonged effects from random shock. However, as seen in Figure 2, the fluctuating nature of some of the series, especially the OPEN variablemay be due to the influence of structural shocks. We will control for such structural behaviour in the series by applying a unit root test proposed by Saikkonen and Lutkepohl (2002a) and Lanne, Lutkepohl and Saikkonen (2002). Also, if the variables are integrated of a similar order, co-integration tests allowing for the structural changes (S & L test), is applied to the series (see Saikkonen and Lutkepohl (2002b)).

Vector Error Correction Model (VECM)

Presence of cointegration relations in the series would imply applying a VECM model. The model is therefore represented as:

$$\Delta y_t = \Pi y_{t-1} + \Gamma_1 \Delta y_{t-1} + \Gamma_2 \Delta y_{t-2} + ...\Gamma_\rho \Delta y_{t-\rho+1} + Cd_t + u_t$$

Where; Δ is the differencing factor; d_t the deterministic terms such as trend; u_t disturbance term. Matrix α and β represents the speed of adjustment and the co-integration parameters respectively. Γ_i is the matrix of the short-run parameters. The model is set up in such a way that the variables such as y_t responds to a one period lagged deviation from the long-run equilibrium. Also the model is checked for adequacy through residual analysis, especially a check for autocorrelation conditional heteroschedasticity (ARCHeffects) and Lutkepohl (1991) and Chow tests for parameter stability (Hansen, 2003). Furthermore, innovation accounting using impulse response functions and variance decomposition is applied to explain the changes in growth to a one standard deviation change in any of the other variables.

IV. PRESENTATION OF EMPIRICAL RESULTS

Unit Root Tests

Table 1: Unit Roots Tests Allowing for Structural Breaks

Variables	Shift functions	Lag length	Test statistics	5% critical value
$lRGDP_t$	Shift dummy	3	-0.730	-3.03
$lOPEN_t$	Shift dummy	2	-1.737	-3.03
$lDINV_t$	Shift dummy	2	-1.738	-3.03
$lFPINV_t$	Shift dummy	2	-2.160	-3.03
$\Delta lRGDP_t$	Impulse dummy	2	-3.568	-3.03
$\Delta lOPEN_t$	Impulse dummy	2	-4.879	-3.03
$\Delta lDINV_t$	Impulse dummy	0	-3.372	-3.03
$\Delta lFPINV_t$	Impulse dummy	0	-3.076	-3.03

Note: Critical values based on Lanne et al. (2002).

As mentioned earlier, the unit root test allowing for structural breaks was performed on the variables according to Saikkonen and Lutkepohl (2002). All variables were not stationary at the levels, buthave been made stationary after the first differences as reported in table 1 above. This implies that the Johansen cointegration tests can be performed on the linear combination of the non-stationary variables. The Johansen cointegration tests are displayed in table 2 below. This shows that there is a one cointegration relation in the model since the rank could not be rejected at 95% confidence intervals.

Table 2: Johansen Co-integration Trace Tests for $y_t = (RGDP_t, OPEN_t, DINV_t, FPINV_t)$

H_0	No of lagged lengths	Test statistics	Critical Values Test statistics	P-values

			90%	95%	
$r = 0$	2	70.34	60.00	63.66	0.011
$r = 1$		32.72	39.73	42.77	0.355

Vector Error Correction Model (VECM)

A one cointegration relationship presupposes the estimation of a VECM. This is basically based on the rank r=1, three lagged differences on 1984-2012, and T=29 for the sample size. Leg lengths are determined by the minimum HC and SC information criteria. Using both the Johansen approach and the Estimated Generalized Least Squares (EGLS), the estimated long run error correction regression computed on table 3 below.

Table 3: Estimated Long-run Cointegration Vector.

$LRGDP_{t-1}$	$LOPEN_{t-1}$	$LDINV_{t-1}$	$LFPINV_{t-1}$	T_{t-1}
1.00	0.328	-0.058	0.155	-0.071
	(0.029)	(0.032)	(0.018)	0.008)
	{0.000}	{0.074}	{0.000}	{0.000}

Note: () and {} are the standard errors and p-values respectively.

Given the multivariate nature of the VAR, we normalized the RGDP variable to reflect the changes economic growth as a result of a change in any of the other variables. The trade openness variable has a negative impact on the economic growth of Nigeria of about 0.3% for the sample size. This might be explained by the poor institutional and corrupt nature of the system. Similarly, the foreign private investment is rather not positive on economic growth as expected. A given 1% rise in FPINV on average is associated with a 0.2% fall in economic growth in the sample. According to the neoclassical models of growth, foreign investments can only enhance growth if it is technologically augmenting (Solow 1957, De Mello 1997). Nigeria has been an agrarian and primary sector driven economy and hence the impact of the manufacturing sector and technological advancement is quite minimal. Hence, this estimate is not far from the realities of the present economic situation in the country at large. The estimate for the domestic investment has the expected sign; however, it is insignificant while the trend deterministic term exerts a positive growth on RGDP at about 7% between the sample periods. This estimate incidentally is similar to the RGDP growth rates in Nigeria, which stands at 7.8% in 2010.

Table 4: Speed of Adjustment Parameters

Equations	Coefficients, e_{t-1}	t-statistics
$\Delta RGDP_t$	-0.363	-2.389
$\Delta OPEN_t$	-1.946	-2.952

For the speed of adjustment estimates in table 4 reports the equilibrium correction mechanism. Therefore, for a given shortfall in the long-run equilibrium, only RGDP and trade openness will respond to revert the system back to equilibrium relationship.

Diagnostic Tests

Results in Tables 5-7, show that the residual has no presence of autocorrelations and it is also normal. The chow forecast for parameter stability similarly shows that the model is stable over the sample range.

Table 5: Diagnostic for VECM model

Test	Q_{10}	Q_{10}^*	LM_3	LJB
Test statistic	121.48	149.68	4.78	5.37
p-value	0.547	0.058	0.761	0.717

Note: Q_{10} is the Portmanteau test statistic at lag 10 while Q_{10}^* is the adjusted Portmanteau statistic for small samples, LM is the LM-type test for autocorrelation with 3 lags and LJB is the Lomnicki- Jargue-Bera statistic based on Doornik and Hansen(1994).

Table 6: Chow Forecast test for VECM model

Break Point	Test	Test statistic	Bootstrapped p-value
2000	λ_{ss}	0.224	0.940

Table 7: Univariate ARCH Tests

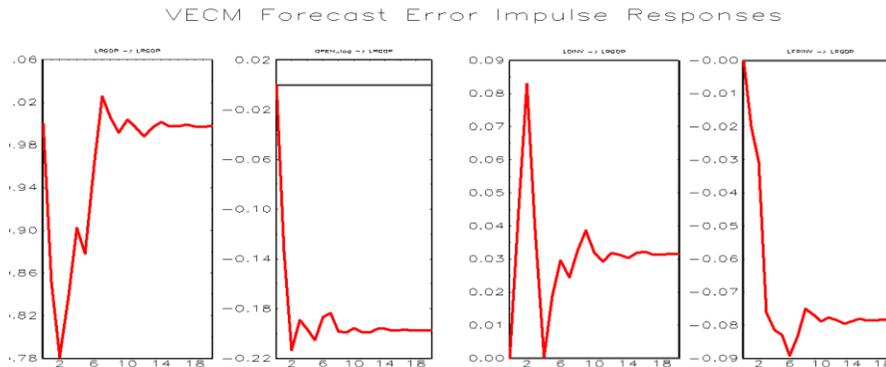| Residuals	Test statistic	p-value
u_1	3.00	0.98
u_2	6.60	0.76
u_3	10.5	0.42
u_4	7.27	0.70

Impulse-Response Functions

Figure 1: Impulse Response Functions

Variance Decompositions

Table 8: Proportions of forecast error in LRGDP

Time Horizon	LRGDP	LOPEN	LDINV	LFPINV
1	1.00	0.00	0.00	0.00
4	0.83	0.11	0.03	0.02
7	0.78	0.16	0.02	0.03
15	0.78	0.17	0.01	0.04
20	0.78	0.17	0.01	0.04

As shown inthe table 8 the forecast error variance on gross domestic investment is mostly explained by itself at initial period and declines with time to about 78%. The openness variable seems to show no effect at first period, but significantly shows increases at longer periods from 11% in lag 4 to almost 20% in lag 20. Hence, openness as proxied by the ratio of import to RGDP could explain forecast in domestic investment. Also seen is that the domestic investment variable is inconsistent, which could be interpreted through its statistical insignificance level in the long-run cointegration equation as reported in table 3.We can also observe that the foreign private investment variable is almost 4% at longer lags. This implies that any forecast error in gross domestic investment is explained by itself at short horizons which get smaller at longer lags.

Policy Implication

In consideration of the realised empirical results, fiscal and monetary incentives should intensively be pursued to encourage and stimulate domestic investments in small, medium and large scale industries especially in the rural areas dominantly occupied by the large proportion of the populace so as to increase aggregate economic activity with a view to raise the real gross domestic product or economic growth. Sutsained domestic investment needs be pursued vigorously at all times. It is essential to accelerate technological innovation needed by foreign investors so as to have enough impact and benefit of foreign investment. Besides, reviving the power sector is highly imperative in this respect. Institutional reform, elimination of double taxation, high import tariffs in some sectors of the economy should be avoided. In other words, cost of doing business in Nigeria has to be intentionally made not to be high vis-a-vis other countries in Africa.There is the need to promote and sustain openness by making the environment conducieve for foreigners to willingly opt for investment in Nigeria. Fiscal incentives to foreign investors have to be sincerely allowed to apply in all ramifications. Besides, it is esential that there is a practical revival of security situation in the country so as to sufficiently protect life and property.

V. CONCLUSİON

The study has shown the level of contribution of the chosen investment variables and openess on the economic growth of Nigeria over the period of study 1970-2012. The approach of vector error correction model and diagnostic tools employed were able to show the insignificant effect of domestic investment on economic growth. The dominant investment in the service industries by domestic investors instead of in manufacturing sector that is known to have high absorbtive capacity is a thing of worry. The foreign direct investment effect on growth was not adequate considering the dominant agrarian nature of Nigerian economy devoid of sufficient technological level needed to ensure adequate impact. Consequently, the impact of manufacturing and technological pregress is comparatively minimal.The effect of openness of the economy on economic growth was not satisfactory as expected possibly due to the nature of the country with weak institutions and incessant insecurity of life and property. However, it is not too late to start actions capable of repositioning the nature of growthlessness associated with Nigeria economy so as to attain a height in its millenuim development goals.

Limitation of the Study

The study is restricted to Nigerian economy and within the period 1970 to 2012. Also investment variables are limited to domestic and foreign investments while the ratio of import and export to the real gross domestic product as a measure of openness.

Direction of future Research

Future studies should focus on: (i) The examination of the impact of the rural infrastructural investment on economic growth (ii) The effects of investment in human capital cum manufacturing sector on growth and (iii) The relevance of diversification of Nigerian economy as a path of sustainable economic development.

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