AGJ
ARABIAN GROUP OF JOURNALS

Social Development

NG-Journal of Social Development, VOL. 5, No. **4**, **August** 2016

Journal homepage:www.arabianjbmr.com/NGJSD_index.php

NGJSD

EFFECT OF PRIVATE SECTOR INVESTMENT ON ECONOMIC GROWTH IN NIGERIA

Clem Nwakoby PhD
Department of Banking and Finance, Nnamdi Azikiwe University, Anambra State, Nigeria. Email: clementnwakoby@yahoo.com. 08037514478
AlajekwuUdoka Bernard
Department of Banking and Finance, Nnamdi Azikiwe University, Anambra State, Nigeria. Email:bluebenresearch@gmail.com. Phone: 07030997856.

Abstract

The study investigates the effect of private sector investment on economic growth in the liberalised Nigerian economy 1986 to 2014. Economic growth is represented by Gross Domestic Product while private sector investment variables include domestic private investment, foreign direct investment and foreign portfolio investment with exchange rate, interest and inflation rate as control variables. Being a time series data, to avoid spurious regression results, the first step was to test for the stationarity of the data by using Philip – Peron unit root test. Then Johansen (1988) technique was used to establish if the non- stationary variable are cointegrated. The result of stationarity and normality test reveals that the model is fairly well specified and could be used for policy analysis. The co-integration test result indicated that Private sector investment and economic growth have long run significant effect on one another. The adjusted coefficient of determination indicated that Private sector investment explains about 98% of changes in economic growth in Nigeria and hence is a veritable tool to boosting growth of Nigerian economy. The coefficients of OLS regression and their t-values indicated that Domestic Private Sector Investment (LnDPSI), Foreign Direct Investment (LnFDI), Foreign Private Investment (LnFPI), and Interest rate have a positive relationship with real GDP while Inflationary Rate (INFR) and Exchange rate have a negative relationship with real GDP. However, only LnDPSI and LnFDI are statistically significant in explaining changes in economic growth while LnFPI, EXCHR, INTR and INF are not significant in explaining economic growth. Further results show evidence of unidirectional causal relationship from domestic private sector investment (DPSI) to gross domestic product (GDP). The granger causality test results further provide evidence of unidirectional causality running from GDP FPI, EXCHR, INTR and INFR respectively. However, there is no evidence to support the existence of causal relationship between GDP and FDI in this study. The study thus concludes by improving and strengthening private sector investment, economic growth would be enhanced in Nigeria. The study therefore recommends that in order to boost economic growth in Nigeria more emphasis should be place on encouraging private investment through domestic and foreign financing.

Keywords: private sector investment, Nigeria, Domestic investment, Economic growth. Portfolio investment.

INTRODUCTION

Economic growth and development depends essentially on a country's ability to invest and make efficient and productive use of its resources. In fact, there cannot be growth without investment of sufficient amount and quality. Hence, Bayraktar (2003) noted that investment is the result and cause of economic growth. The role of the private sector is important in both contribution to quantity of gross domestic investment and its ability to allocate and employ resources efficiently. Private sector investment has been the engine of employment and income creation, provision of infrastructure as well as social services. The international organisations have equally acknowledged the role of the private sector in enhancing economic growth of developing countries. Notably, European Commission (EU) (2014) said that the private sector has the potential for generating inclusive and sustainable growth in developing countries. International Finance Corporations (IFC) (2011) equally asserted that the private sector is a critical component in addressing the development challenges of the developing countries through its contributions in many areas, including growth, employment, poverty reduction, service delivery, food security, climate change mitigation, environmental sustainability, and contributions to taxes. This means that the presence of the private sector can at least spur economic growth and poverty reduction.

In Nigeria, the oil boom of the1970s among other factors gave impetus to a public sector-led government strategy. Public sector dominance was also prevalent in order to give government an increasing measure of control over its own resources, the dwindling revenue of government as a result of the economic crisis of the 1980s coupled with the dissatisfaction with the performance of the public compelled Nigeria. However, the structural adjustment programme (SAP) was put in place in 1986, with the objective among others of facilitating the development of the private sector, whose role could determine the level of economic growth of the Nigerian economy. The SAP and other policies engendered the much needed private investments.

Between 1986 - 2014, private investment in Nigeria has experienced an upward trend. This is a reflection of the role played by the market forces. Continued efforts aimed at reforming and privatising the public sector, removing price distortions, liberalising foreign trade and payments, opening the market up to foreign direct and portfolio investments, and strengthening the capacity of the financial system to mobilise domestic savings and allocate financial resources have all contributed to the share of private investment in developing countries (Bayraktar, 2003). However, Nigeria as one of the developing countries still has room to improve her private investment performance. This would be better done when the effect of private sector investment on economic growth of the country is understood.

It has been acknowledged that reaching the high level of economic development and high growth rates is one of the most important goals of developing economies like Nigeria. The role of private sector in bringing about economic growth has equally been noted, yet it appears that no study in Nigeria has shown the direction of the relationship between both variables. Lack of knowledge on the causal relation between private sector investment and economic growth may result in ineffective economic policies on the private sector activities.The fluctuations in private sector investment in Nigeria have been a serious concern. In spite of the measures adopted by the Nigerian government, private sector investment, over the years remained low which tend to impede economic growth in the country.

It has however been found that a major problem is that the government is so much concerned about policies to boost private investment without much knowledge on the factors that could influenced the effect of the private investment on economic growth in Nigeria. Private investors will flourish only in a supportive environment of cost reductions, with reasonable level of economic stability. Among other things, Ibenta (2005) noted that foreign investors are exposed to currency risk and it is this risk that is making many foreign investors to divest from Nigeria economic scene since the introduction of the foreign exchange market. With the inclusion of exchange rate in the model, the study will access the truism of this study in Nigerian context.

CONCEPTUAL FRAMEWORK

In this section, the concept of investment, private sector and economic growth are explained. Private sector (privately owned part of the economy) is the part of the free market economy that is made up of companies and organizations that are not owned and managed by the government. The Central Bank of Lesotho (2009) defined the private sector as a basic organising principle for economic activity in a market–based economy where physical as well as financial capital is generally privately-owned and production decisions are made for private gain. Thus the private sector in this study is the business organisations that are owned by individuals for their own economic gains.

In Keynesian terminology, investment refers to addition to capital equipment which enables increase in the production of capital goods (Jhingan, 2003). The term, investment, according to Ibenta (2005), may be defined as accumulation and commitment of fund in financial and real assets with the objective of obtaining income over time. He further posits that it is a commitment of resources made in the hope of realising benefits that are expected to occur over a reasonable long period of time in the future. Investment can also be referred to as the production of capital goods (Heim, 2008).Investment thus includes new plant and equipment, construction of public works like roads, dams, buildings, etc. Investment can be defined as the outlay of money for future use (Agu, 2015).

On the bases of the above definitions, investment involves an outlay of fund with the expectation of future income. Investment can be divided into autonomous and induced investment.Autonomous investment is service based and not induced by demand as it is not influenced by immediate returns while induced investment is largely profit motivated. Autonomous investment is in the purview of the public sector and therefore propelled by the government. Thus investment is made by the public sector and the private sector. All government capital expenditures form public investment. Private sector investment include all investment made by the private sector, these include domestic investment, and foreign private investment.

According to Adetiloye and Adeyemo(2012), real domestic investment is expenditure made to increase the total capital stock in the economy. This is done by acquiring further capital-producing assets and assets that can generate income within the domestic economy. The domestic investment is the gross fixed capital formation in the economy. This can be divided into private sector capital formation and public sector capital formation. The domestic private sector investment has also been proxies by credit to private sector from the financial system.

However, foreign private investment comprised foreign direct investment and foreign portfolio investment. Foreign direct investment (FDI) is a direct investment into production or business in

a country by an individual or company of another country, either by buying a company in the target country or by expanding operations of an existing business in that country. Foreign direct investment is in contrast to portfolio investment which is a passive investment in the securities of another country such as stocks and bonds. World Bank (1996) conceptualized Foreign Direct Investment (FDI) as investment that is made to acquire a lasting management interest (usually 10% of voting stock) in an enterprise operating in a country other than that of the investors. Such investment may take the form of either "Greenfield" investment (also called mortar and brick investment) or merger and acquisition (M&A), which entails the acquisition of existing interest rather than new investment. In corporate governance, ownership of at least 10% of the ordinary shares of voting stock is the criterion for the existence of a direct investment relationship. Ownership of less than 10% is recorded as portfolio investment (Suhendra & Anwar, 2014).

The concept of economic growth is viewed as an increase in the net national product in a given period of time (Dewett, 2005). Todaro and Smith (2006) defined economic growth as a steady process by which the productive capacity of the economy is increased over time to bring about rising levels of national output and income. Jhingan (2006) viewed economic growth as an increase in output. He explained further that it is related to a quantitative sustained increase in the country's per capita income or output accompanied by expansion in its labour force, consumption, capital and volume of trade.

The main characteristics of economic growth are increasing rate of growth of per capita income or output, increasing rate of productivity, increasing rate of structural transformation, international flows of labour, goods and capital (Ochejele, 2007). Conventionally, economic growth has also been measured in terms of Gross Domestic Product (GDP); as well as Human Development Index (HDI), which is an index that measures national growth based on measures of life expectancy at birth, education attainment, literacy and adjusted real per capita income. Looking at the above definitions so far, this study posits that economic growth is a sustained increase in the actual output of goods and services and is proxied by GDP.

THEORETICAL FRAMEWORK

This study is hinged on the neo-classical theory of investment-growth nexus and the theory of privatisation. The Neo-Classical Model of Growth was first devised by Robert Solow, hence it is called the Solow model. The model believes that a sustained increase in capital investment increases the growth rate. The neoclassical theory of investment explains that inducement to invest may also be simulated by favourable changes in relative prices where downward shifts in the real user cost of capital services imply that the firm has to restore equilibrium by cutting down the marginal productivity of capital stock (Jorgensen, 1963). The neo-classical approach to investment is an improvement on the Harrod–Domar formulation. The Harrod – Domar Model (1939, 1946) highlights the importance of determining the rate of investment (S/Y), which is necessary to achieve a certain rate of economic growth. The model shows the possibility of increasing the rate of growth, by either reducing a factor (capital/income) or increase the rate of investment (savings/income). Thus Jorgensen model is based on the theory of optional capital allocation.

To most optimally utilise capital, private sector investment no doubt remains the engine of growth with the public sector providing the enabling environment. This theory thus captures the relationship between private sector investment and economic growth including the possible

control variables such as interest, exchange and inflation rates which influence investor decision and consumers choice. The data employed in this study equally started from the SAP-era when market based economy was introduced in Nigeria. Thus the model will most likely capture the effect of private investment in a real market based economy as Nigeria.

Another theoretical foundation on which this study is based is the theory of privatization based on the concept of property rights. The concept of property rights holds that in order to develop an expanded, specialized market system, a society must have an efficient way of dealing with numerous transactions that take place in a specialized economy. Specialization and allocation of resources depend on low transactions costs, which are dictated by prices in market economies. Competitive markets, in which transactions are effectively handled by market price, rely heavily on formal, well-defined property rights (Mankiw, 2001). De Soto (1996) explains, "To be exchanged in expanded markets, property rights must be 'formalized', in other words, embodied in universally obtainable, standardized instruments of exchange that are registered in a central system governed by legal rules". In fact, de Soto argues that the lack of formal property rights is "the missing ingredient" that is keeping underdeveloped countries from sustaining long-term growth. Furthermore, the lack of property rights limits the amount of goods and services that can be exchanged in the market. These property An important implication of well-defined property rights is that it creates strong individual incentives, which, according to Easterly, is a significant factor in the quest for long term growth. By creating strong incentives, property rights lead to an increase in investment since people are certain and secure about the ownership of their property (Soto, 1996). Furthermore, individuals gain an access to credit since they can use their formal titles as a collateral for loans, ultimately leading to an increase in investment. Finally, property rights give people an incentive to pursue long-term rather than short term economic goals. In the case of land ownership, individuals who have secure and well-defined ownership will invest in their land instead of continuously acquiring land (Soto, 1996).

From these theoretical propositions, it can be seen that investment in the private sector is capable of boosting economic growth over and above the strength of the public sector. This theory proposes that when funds are channelled through the private sector, economies such as that of Nigeria would growth fast and be able to achieve its vision 20:20:20.

EMPIRICAL FRAMEWORK

Table 1: Tabular presentation of related empirical studies on effect of private investment on economic growth

SN	Author and year	Objective	Area and period	Variables	Methods	Major Findings
1	Suhendra and Anwar (2014)	Determinants of Private Investment and the Effects on Economic Growth	Indonesia 1990-2011.	Private investment, GDP, Public investment, Inflation rate, Credit investment, exchange rate, Human capital	Ordinary least square (OLS)	Private investment has a positive and significant effect on growth.
2	Aliyu	Impact of	Nigeria	credit to private	OLS	credit to private

	and Yusuf (2015)	credit to private sector (CPS) on the real sector	, 1986 - 2010	sector, Size of the financial intermediaries, Aggregate liquid liabilities (M2).	regression	sector has significant impact on the real sector
3	Osman (2014)	relationship between private sector credit and economic growth	Saudi Arabia, 1974-2012	GDP, private sector credit, commercial bank's deposits, government expenditure, inflation rate and open economy.	autoregressive distributed lag (ARDL) models	There is a long-run relationship between private sector credit and economic growth.
4	Udoka and Anyingang (2012)	Effect of privatization on economic growth and development	Nigeria, 1979-2007	Gross Domestic Product, Public Sector Capital Spending, Private Sector Capital Spending	co-integration test and ordinary least square Regression	Private sector spending has significant positive relationship with GDP.
5	Haque (2013)	To improve the understanding of the impact of private and public investment on economic growth	Bangladesh 1972/73 - 2010/11	Gross domestic product, Gross private capital formation, Gross public capital formation	co-integration approach	Private investment impact positively economic growth in the short and long run process.
6	Ghazali (2010)	Causal relationship between private domestic investment and economic growth	Pakistan, 1981-2008	private domestic investment and GDP	Granger causality and co-integration analyses	A bi-directional causality between private domestic investment and economic growth; There is a long run relationship between private domestic investment and economic growth.
7	Tan and Tang	Relationship between	Malaysia, 1970	GDP, Private domestic	Granger causality	PDI, the user cost of capital,

	(2011)	private domestic investment (PDI), the user cost of capital and economic growth	- 2009	investment (PDI), interest rate.	and co-integration analyses	and economic growth are cointegrated. There is a unidirectional causality running from PDI to economic growth and from PDI to the user cost of capital in the long run.
8	Imoisi, Abuo and Sogules (2015)	Impact of domestic investment on economic growth	Nigeria, 1970-2013	Real GDP, Private Domestic Investment, Government Productive Capital Expenditure, Government Protective Capital Expenditure, Administrative, Economic services, Social and Community Services, and Transfer component of government capital expenditure	cointegration and Error Correction Mechanism techniques	Private investment has positive but insignificant impact on economic growth.
9	Abdullah, Ladan and Bakari (2012)	Impact of Foreign Private Investment on Economic Growth	Nigeria, Jan. 1970 to Dec. 2009	Private Investment, Interest Rate and Inflation rate and Gross Domestic Products	VAR and VECMmodel	There is a long run relationship between FPI and GDP. There is unidirectional causality between FPI and GDP.
10	Bagheb o andEdo umiekumo	Relationship between Domestic Private Capital Accumulation	Nigeria 1970-2010	real per capita gross domestic product, Private investment, Public	Cointegration Analysis and the parsimoni	All the independent variables impacts positively on

	(2012)	and Economic Development		investment, Real interest rate, inflation rate	ous short run dynamic models (ECM)	economic development
11	Kalu and Mgbemena (2015)	The link between domestic private investment and economic growth	Nigeria, 1970 - 2012	Real GDP, Private investment, Private Consumption, Government expenditure and interest rate.	Error Correction Modelling (ECM) approach	Private investment have positive effect on Economic growth
12	Oni, Imolehin,Adelowo and Adejumo (2014)	Impact of foreign private investment on Nigeria economic growth	Nigeria, 1980-2010	Growth rate of GDP, Foreign Private Investment, Inflation rate, Gross Fixed Capital Formation, Net Export	multiple regression technique	Foreign private investment, gross fixed capital formation and net export are positively related with economic growth while inflation rate has a negative relationship with economic growth.
13	Simon-Oke (2014)	relationship between Foreign Private Investment, Capital Formation and Poverty reduction	Nigeria, 1978 - 2008	Poverty rate, Foreign Private Investment, Exchange rate, Inflation rate, Government investment on education and Government investment on Health	co-integration and Error correction Mechanism (ECM) and Granger Causality tests	Inflow of foreign Private Investment has not significantly contributed to poverty alleviation. A unidirectional relationship runs from poverty rate to private investment
14	Okpe and Abu (2009)	examines the effects of foreign private investment on poverty	Nigeria, 1975 - 2003	Growth rate of Gross Domestic Product, Foreign Private Investment, External Debt,	Regression analyses	Inflow of foreign private investment and foreign loan into Nigeria significantly

				Inflation Rate, Petroleum Profit tax and Government Expenditure		alleviate poverty.

Source: Authors computation

SUMMARY AND CRITIQUE OF EMPIRICAL LITERATURE

Fourteen empirical studies have been reviewed on Table 1 shown above. All the results indicated that private sector investment has positive effect on economic growth in both Nigeria and Asian countries reviewed. Out of the studies, only four (Ghazali, 2010 in Pakistan, Tan and Tang, 2011 in Maylasia; Abdullah, Ladan and Bakari, 2012 and Simon-Oke (2014) in Nigeria) addressed the causal effect of private investment on economic growth. However, the results are conflicting. While Ghazali, 2010 indicate a bi-directional causality between private domestic investment and economic growth; others posited a unidirectional causality. More so, the direction of the uni-directional causal effect of equally conflicting. While Tan and Tang, 2011 show that domestic private investment causes economic growth, Abdullah, Ladan and Bakari (2012) show that foreign private investment causes economic growth. However, Simon-Oke (2014) adopted poverty rate as proxy for economic growth and found that growth causes private investment. These inconsistencies in results created doubts on the direction on the relationship between private sector investment and economic growth. This study thus fills this gap by re-investigating the causal effect of private investment on economic growth in Nigeria.

From the review of empirical literature, it is seen that all the studies in Nigeria except Aliyu and Yusuf (2015) expanded their studies of private investment-growth nexus beyond the market based era. However, Aliyu and Yusuf (2015) ended in 2010 (1986 to 2010) while the present study covers more time frame from 1986 to 2014. This implies that this study addressed both timeframe gap and economic reform problems, as combining both regulated and deregulated eras in a study may cause spurious result. This is because the factors that interplay in market based economy (market forces) does not surface in the pre-SAP Nigerian economy.

METHODOLOGY

Research Design and Sources of Data

The study is based on an ex-post facto design. The time series data on six variables were sourced from the CBN Statistical Bulletin, 2014, Online Edition available in: www.cenbank.org/Out/2015/SD/2014%20Statistical%20Bulletin_Section%20A_Final.xlsx. The time period covered is 29 years (1986 to 2014). The scope started from 1986 to reflect only the market based economic conditions in the study. The variables used in the study include GDP, CPS, FPI, FDI, EXCHR, INTR and INFR. The data on these variables are shown on Appendix 1. These variables are explained in Table 2 below.

Table 2: Description of the Variables used for the study

Variable	Acronym	Description
Gross Domestic Product	GDP	GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. The GDP is the proxy for economic growth. It is the dependent variable.
Domestic Private Sector Investment	DPSI	Domestic credit to private sector by banks refers to financial resources provided to the private sector by other depository corporations (deposit taking corporations except central banks), such as through loans, purchases of non-equity securities, and trade credits and other accounts receivable, that establish a claim for repayment. It is an independent variable and proxied by Total Credit to Private Sector.
Foreign Direct Investment inflow	FDI	It represents investments by the foreign investors into the Nigerian real sector. It is an independent variable.
Foreign Portfolio Investment inflow	PFI	It represents investments by the foreign investors into the Nigerian capital market. It is an independent variable.
Interest rate	INTR	In line with Suhendra and Anwar (2014), interest, inflation and exchange rates are added as control variables as a proxy of the level of risk taken in private investment. Interest rate capture the investors' reactions to opportunity cost of funds. The exchange rate captures the reaction of foreign investors to currency risk of investing in Nigeria in the face of exchange rate uncertainty, while the inflation rate controls for the uncertainty in price changes which affects company projections.
Real Effective Exchange Rate	EXCHR	
Inflation Rate	INFR	

Source: Authors computation

Model Specification

This study is a modification of the models used by Abdullah, Ladan and Bakari (2012),Baghebo andEdoumiekumo (2012) andKalu and Mgbemena (2015). Baghebo andEdoumiekumo (2012) andKalu and Mgbemena (2015) Baghebo andEdoumiekumo (2012) studied the domestic private investment while Abdullah, Ladan and Bakari (2012) examined foreign private investment. These studies used interest rate, inflation rate and Private Consumption and Public investment as control variables for private investment. The present study used a modified combined both the domestic and foreign investment variables. The combination of domestic and foreign private investment is informed by the recommendations from Kalu and Mgbemena (2015) that Foreign

Direct Investment (FDI) should at best complement domestic private investment. This gave a blend of foreign private investment (direct and portfolio investments) and domestic investment. The control variables included are interest, inflation and exchange rates.

Model follows the neoclassical growth framework of Solow (1956). The model was used by Baghebo andEdoumiekumo (2012), Haque (2013), Suhendra and Anwar (2014) and Kalu and Mgbemena (2015) in similar studied. The framework of the growth model take as its starting point an aggregate production function of Cobb-Douglas function which related output to factors inputs and variable referred to as total factor productivity.

$Y = A\ f(K, L)$ …….... (1)

Where,

A is the technological shift parameter which is generally assumed to be exogenous.

Y is the level of output.

K is the stock of physical capital.

L is the labour force

F is the functional notation of the potential aggregate output.

In a labour surplus country like Nigeria it is reasonable to assume that at the margin, growth of labour force has no effect on aggregate output. Thus, aggregate potential production function is hinged on the theoretical assumption that inputs (in form of investment) yields output (economic growth). Thus the functional representation of the relationship between private sector investment and economic growth is thus:

GDP = f(DPSI, FDI, FPI, EXCHR, INTR and INFR) (2)

Where: CPS, FPI, FDI, INTR, EXCHR and INFR are as defined in Table 2.

Specifying the production function in log linear form with an error term μ_t, the following equation can be written

$LnGDP_t = \beta_0 + \beta_1 LnDPSI_t + \beta_2 LnFPI_t + \beta_3 LnFDI_t + \beta_4 EXCHR_t + \beta_5 INTR_t + \beta_6 INFR_t + \mu_t$ …. (3)

Where,

$\beta 0$ = the constant term is assumed to capture the growth of productivity as well as other left-out exogenous variables.β_1, β_2, β_3, β_4, β_5, β_6 = Coefficients of the explanatory/Independent variables.μ = Stochastic or error term *t* = denote time period (years) and Ln = the natural log that smoothens the scholastic effect of time series variables.

Appriori Expectations

The following are a priori expectations of the coefficients of the model. $\beta_1, \beta_2, \beta_3, > 0$; $\beta_4, \beta_5, \beta_6 <$ 0. The relationship expressed above shows that Gross Domestic Product which captures the aggregate demand conditions in the economy is expected to exert a positive effect on private sector investment. This goes to say that the coefficient of GDP is expected to be positive, i.e as the aggregate demand condition in the Nigerian economy is increasing, private sector investment should increase as well. However, since rising Private investment leads to rising economic growth: rising interest, inflation and exchange rates will have negative effect on them.

Method of Data Analysis

The study employs econometric analyses such as OLS regression, co-integration and granger causality. Following that most time series variables are not stationary, using nonstationary variables in the model might lead to spurious regression which cannot be used for precise

prediction (Gujarati, 2003). Thus, the prerequisite for co-integration test is the stationarity of each individual time series over the same time period. Hence, before turning to the analysis of the long-run relationships between the variables the study examined the unit root properties of each time series data, as non-stationary behaviour is a prerequisite for including them in the co-integration analysis. If the time series are stationary in their levels, then they are said to be integrated of order zero, i.e., I (0); if the time series are stationary in their first differences, then they are said to be integrated of order one, i.e., I (1); if stationary in their second differences, then they are integrated of order two, i.e., I (2). The order of integration of the variables is investigated using the Augmented Dickey-Fuller (ADF) [Dickey & Fuller, 1981] unit root tests for the presence of unit roots.

PRESENTATION OF DATA AND INTERPRETATION OF RESULTS

Unit Root Test for Stationarity

Table 3: Unit Root Test Summary Statistics (Augmented Dickey Fuller)

Variables	ADF Test t-Statistics		Probability Values (5%)		Order of Integration
	Level	1st Difference	Level	1st Difference	
GDP	-1.640110	-5.096647	0.4496	0.0003*	1(1)
DPSI	-0.629060	-4.369704	0.8485	0.0020*	1(1)
FDI	-2.384418	-8.636689	0.1549	0.0000*	1(1)
FPI	1.274397	-6.432865	0.9977	0.0000*	1(1)
EXCHR	-0.578209	-5.003174	0.8602	0.0004	1(1)
INTR	-4.439869	-	0.0016*	-	1(0)
INFR	-0.957765	-4.541767	0.7512	0.0016*	1(1)

*Significant at 1%; **significant at 5%

From the table above, the results show that only INTR is stationary at level. Other variables including GDP, DPSI, FDI, FPI EXCHR and INFR are non-stationary at level and stationary in their first differences. Since most of the variables are stationary at first difference, co-integration analysis is conducted at the 1(1) order of integration (that is, at lag 1).

Long run relationship between Private Investment and Economic Growth

Table 4: Johansen maximum likelihood co-integration test for GDP and Private sector investment variables in Nigeria

Rank	Eigenvalue	Trace		Maximum Eigenvalue		Remark
		Statistics	Prob.**	Statistics	Prob.**	
0	0.893791	184.9591	0.0000*	60.54333	0.0008*	Significant
1	0.836512	124.4158	0.0001*	48.89743	0.0040*	Significant
2	0.724322	75.51835	0.0163*	34.79006	0.0388*	Significant
3	0.458036	40.72830	0.1975	16.53899	0.6197	Not Significant
4	0.351596	24.18931	0.1926	11.69753	0.5777	Not Significant
5	0.305280	12.49178	0.1348	9.834652	0.2230	Not Significant
6	0.093725	2.657124	0.1031	2.657124	0.1031	Not Significant

**MacKinnon-Haug-Michelis (1999) p-values; * denotes rejection of the hypothesis at the 0.05 level

Trend assumption: Linear deterministic trend; Sample (adjusted): 1988 2014

Series: LNGDP LNDPSI LNFDI LNFPI EXCHR INTR INFR

The test of long run relationship between economic growth and private sector investment variables is conducted with Johansen co-integration and shown on table 4 above. The result showed that both the Trace and the Max-eigenvalue tests indicate 3 cointegrating equations at the 0.05 level. This means the variables included on the study (LnGDP, LnDPSI LnFDI LnFPI EXCHR INTR INFR) are co-integrated and thus move in similar direction. This implies that there is a long run relationship between economic growth and private sector investment variables in Nigeria. However, to determine the degree of effect of private sector investment on economic growth, we employ the OLS regression analysis shown on Table 5 below:

Effect of Private Investment Variables on Economic Growth

Table5: Regression result of the relationship between Private Sector Investment Variables and Economic Growth

Dependent Variable: LNGDP
Included observations: 29

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNDPSI	0.622055	0.131885	4.716662	0.0001*
LNFDI	0.251782	0.093611	2.689679	0.013*
LNFPI	0.018896	0.037316	0.506382	0.617
EXCHR	-0.001586	0.002664	-0.595282	0.557
INTR	0.006638	0.016186	0.410087	0.685
INFR	-0.001649	0.003126	-0.527593	0.603
C	3.329442	0.572910	5.811460	0.000*
R-squared	0.983852	Durbin-Watson stat		1.974977
Adjusted R-squared	0.979448			
F-statistic (prob.)	223.3952(0.000000)			

Gross Domestic Product (GDP) in the model is used to proxy economic growth, while LNDPSI, LNFDI, LNFPI, EXCHR, INTR, and INFR are the explanatory variables. The adjusted coefficient of determination (R^2) of the estimated model shows that about 98% of the variation in GDP is explained by the combined effects of all the private sector investment variables. This means that the regression result reveals about 98% of the variability in the real GDP is accounted for by LNDPSI, LNFDI, LNFPI, EXCHR, INTR and INFR over the years (1986-2014). The F-statistics value of 223.3952 shows that the overall regression is significant at both the 1% and 5% levels. This indicate that private sector investment explains about 98% of changes in economic growth in Nigeria and hence is a veritable tool to boosting growth of Nigerian economy. The Durbin-Watson value is 1.97 which shows that serial correlation do not exists. Consequently, the estimated model can be confidently relied upon for making inferences and for prediction purposes.

The coefficients of the explanatory variables reveal that Domestic Private Sector Investment (LnDPSI), Foreign Direct Investment (LnFDI), Foreign Private Investment (LnFPI), and Interest rate have a positive relationship with real GDP, which is in line with the a'priori expectation. However, Inflationary Rate (INFR) and Exchange rate have a negative relationship with real GDP, which is conform to the theoretical basis. This result indicate that if all other explanatory variables are held constant, a unit increase in LnDPSI, LnFDI, LnFPI, and INTR will bring

about a more than proportionate increase in LnGDP by 0.622055, 0.251782, 0.018896 and 0.006638. However, a unit increase exchange and inflationary rates will bring about a more than proportionate decrease in GDP by 0.001586 and 0.001649 respectively. LnDPSI and LnFDI are statistically significant in explaining changes in economic growth. However, LnFPI, EXCHR, INTR and INF are not significant in explaining economic growth.

Causal Relationship between Private Investment Variables and Economic Growth

Table 6: Granger Causality Test for the direction of the causal relationship between the individual explanatory variable and economic growth

Null Hypothesis:	Obs	F-Statistic	Prob.	Remark
LNDPSI does not Granger Cause LNGDP	27	3.19467	0.0505	Significant
LNGDP does not Granger Cause LNDPSI		0.73078	0.4929	Not Significant
LNFDI does not Granger Cause LNGDP	27	0.10775	0.8983	Not Significant
LNGDP does not Granger Cause LNFDI		0.96198	0.3976	Not Significant
LNFPI does not Granger Cause LNGDP	27	1.11266	0.3465	Not Significant
LNGDP does not Granger Cause LNFPI		6.88048	0.0048	Significant
EXCHR does not Granger Cause LNGDP	27	1.83704	0.1829	Not Significant
LNGDP does not Granger Cause EXCHR		2.85013	0.0493	Significant
INTR does not Granger Cause LNGDP	27	0.46813	0.6323	Not Significant
LNGDP does not Granger Cause INTR		5.55876	0.0111	Significant
INFR does not Granger Cause LNGDP	27	2.22285	0.1321	Not Significant
LNGDP does not Granger Cause INFR		4.73742	0.0195	Significant

Source: Author's computation from E-view Result of the ADF Statistical Analyses

Table 6 contains the results of Granger Causality tests. The results show evidence of unidirectional causal relationship from domestic private sector investment (DPSI) to gross domestic product (GDP). The results further provide evidence of unidirectional causality running from GDP FPI, EXCHR, INTR and INFR respectively. Moreover, there is no evidence to support the existence of causal relationship between GDP and FDI in the study.

Discussion of Findings

The finding that private sector investment and economic growth are cointegrated implies that long run significant relationship exist between both variables. This indicate that an upward movement of private sector investment would bring about an upward movement of economic growth and vice versa. This suggest that private sector investment can be used to improve economic growth of Nigeria. This notion is supported by the result of the adjusted coefficient of determination (R^2) which indicate that about 98% of changes in economic growth can be explained by private sector investment variables included in the study. This following that policies (fiscal and monetary) that enhances private sector investment would invariantly enhance economic growth in Nigeria.

The study equally showed that both domestic private investment and foreign direct investment have significantly positively influenced economic growth in Nigeria. The results indicate that domestic private investment have resulted to 62% improvement in economic growth in Nigeria while foreign direct investment lead to 25% growth of the economy. However, foreign portfolio investment and the control variables (exchange rate, interest rate and inflation rate) do not have significant effect on the economy. This may have been due to the cushion provided by the government through oil reserves as well the level of insider activities and lack of will power on policy implementation in the country.

The granger causality test showed that domestic private investment granger causes economic growth while economic growth on the other hand granger causes foreign portfolio private investment. The finding supports the concluding assertion ofBaghebo andEdoumiekumo (2012) that "in the event of uncertainties in the business environment (Business failure), Foreign Private Investment would vanish but domestic private capital vanish nowhere". This implies that foreign investors, especially capital market investors, strictly bases their investment decisions on economic conditions of the receiving economy. Thus, any economy that is dwindling or has high business risk will suffer loss of foreign investment.

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

Conclusion

This study re-examined the link between private sector investment and economic growth in Nigeria, adopting the OLS regression analysis technique. This was done by using a disintegrating private sector investment into domestic and foreign private investment. The study uses annual time series data from 1986 to 2014. In the empirical analysis, Johansen maximum likelihood co-integration procedure was employed, to examine the degree of integration among the variables. Empirical findings from the study imply that improving and strengthening private sector investment would help increase the real GDP. The OLS coefficient of determination result indicated that about 98% of the variations on economic growth can be controlled by private sector investment.

Recommendations

1. One important recommendation to boost up the economic growth in Nigeria is to put more emphasis on private investment. Therefore, the Nigerian authority must place emphasis on this variable to enhance and stimulate economic growth in Nigeria. One of the ways to achieve this policy objective is to create more wealth or to generate more employment.
2. Since the study finds significant positive relationship between foreign direct investment and economic growth, it shows that continued attraction of real sector development from foreign investor would boost economic growth in Nigeria. As foreign direct investment transfers technology and technical know-hows to the domestic labour force, it is recommended that one way to develop human capital for Nigeria would be to put in place policies and infrastructures that could encourage FDI inflows.
3. More so, it is recommended that the monetary and fiscal authorities need to improve on the fiscal incentives and monetary policy actions that could bolster the existence of local private investment. Moreover, removing the seemingly obstacles and encouraging savings and investment instruments would boost private investment in the economy and in turn stimulate economic growth. On the basis of the above analysis, private investment can be improved through the maintenance of macroeconomic and fiscal stability

measures, which constitute important pre-condition for the success of any policy related to investment. This also means that effort should be made to see that interest rate do not go beyond the threshold of 30% of GDP required to increase investment.

REFERENCES

Abdullah, F. Z., Ladan, S. &Bakari, H. R. (2012). Foreign private investment and economic growth in Nigeria: A cointegrated VAR and granger causality analysis.*CBN Journal of Applied Statistics, 2(2),* 15 – 28. Retrieved from http://cenbank.org/out/2012/ccd/cbn%20jas%20vol%202%20no%202_article%20two.pdf.

Adetiloye, K. A. & Adeyemo, K. A. (2012). Domestic Investment, Capital Formation and Population Growth in Nigeria. *Developing Country Studies, 2(7), 87 – 97.* Retrieved from www.iiste.org/Journals/index.php/DCS/article/view/2447/2469.

Agu, O. C. (2015). Determinants of private investment in Nigeria an econometric analysis. *International Journal of Economics, Commerce and Management, III (4),* 1 – 14. Retrieved from http://repository.fuoye.edu.ng/bitstream/123456789/949/1/Determinants%20of%20Private%20Investment%20in%20Nigeria.pdf.

Aliyu, M. & Yusuf, A. H. (2015). Impact of private sector credit on the real sector of Nigeria. *International Journal of Business and Social Research, 3(5),* 113 – 124. Retrieved from http://www.researchgate.net/profile/Yusuf_Hashim/publication/240834622_impact_of_private_sector_credit_on_the_real_sector_of_nigeria/links/0deec51c72ec78fffd000000.pdf?&inViewer=true.

Baghebo, M. &Edoumiekumo, S. (2012). Domestic private capital accumulation and economic development in Nigeria 1970 -2010. *International Journal of Academic Research in Business and Social Sciences, 2(5),* 69 – 88. Retrieved from http://www.hrmars.com/admin/pics/740.pdf.

Bayraktar, B. (2003). The role of private sector investment in the economic performance of IOC member countries. *Journal of Economic Cooperation, 24(1),* 63 -110. Retrieved from http://www.sesric.org/jecd/jecd_articles/ART02100103-2.pdf.

Central Bank of Lesotho (2009).*The role of Private Sector Development in economic growth: the case of Lesotho. CBL Economic Review, 112,* 1 – 8. Retrieved from http://www.centralbank.org.ls/publications/MonthlyEconomicReviews/2009/Econo_Review_Nov_2009.pdf.

Crafts, N. & Toniolo, G. (1996), *Economic Growth in Europe since 1945*. Cambridge: Cambridge University Press.

Dewett, K. K. (2005). *Modern economic theory*. New Delhi: ShyamLal Charitable Trust.

Dickey, D. A. & Fuller, W. A. (1981).The likelihood ratio statistics for autoregressive time series with a unit root, *Econometrica 49,* 1057- 1072.

European Commission (2014). A stronger role of the private sector in achieving inclusive and sustainable growth in developing countries.Communication from the commission to the European Parliament, the council, the European economic and social committee and the committee of the region. Brussels, 13.5.2014 COM (2014) 263 final. Retrieved on July 14, 2015 from http://ec.europa.eu/ transparency/regdoc/rep/1/2014/EN/1-2014-263-EN-F1-1.Pdf

Ghazali, A. (2010). Analysing the relationship between foreign direct investment, domestic investment and economic growth for Pakistan. *International Research Journal of Finance and Economics, 47,* 123-131.

Haque, S. T. (2013). Effect of public and private investment on economic growth in Bangladesh: An econometric analysis. Research Study Series No –FDRS 05/2013. 104 – 126. Retrieved from http://www.mof.gov.bd/en /budget/pathprosperity/chapter5.pdf.

Heim, J. J. (2008). The Investment function: determinants of demand for investment.*Working Papers* in Economics.

Ibenta, S. O. N. (2005). *Investment analysis and financial management strategy.* Enugu: Institute for Development Studies.

Imoisi, A. I., Abuo, M. & Sogules, I. W. (2015). Domestic investment and economic growth in Nigeria from 1970-2013: Aneconometric analysis. *Canadian Social Science, 11(6),* 70-79. Retrieved from http://www.cscanada.net/index. php/css/article/viewFile/7009/pdf_357.

International Finance Corporations (2011). Chapter 1: Role of the private sector in development. International Finance Institutions and Development through the Private Sector. A joint report of 31 multilateral and bilateral development finance institutions. Retrieved on July 14, 2015 from http://www.edfi.be/component/ downloads/downloads/54.html.

Kalu, C. U. & Mgbemena, O. O. (2015).Domestic Private Investment and Economic Growth in Nigeria: Issues and Further Consideration. *International Journal of Academic Research in Business and Social Sciences, 5 (2),* 302 – 313. Retrieved from http://hrmars.com/hrmars_papers/Domestic_Private_Investment _and_Economic_Growth_in_Nigeria_Issues_and_Further_Consideration1.pdf.

Kerlinger, F. N. (1973). *Foundations of Behavioural Research.* 2nd edition. Holt, Rinehart and Winston. Retrieved from http://home.ubalt.edu/tmitch/kerlinger.htm.

Jhinghan, M. L. (2003). *Advanced economic theory (micro and macro),* Delhi: Virnda Publication (P)Ltd.

Jhinghan, M. L. (2006). *The economics of developmentand planning*. 38th Edition, Delhi: Virnda Publication (P)Ltd.

Jorgenson, D W. (1963). Capital theory and investment behaviour. The *American Economic Review,* 52(2), 247 – 259.

Mankiw, N. G. (2001). *The Essentials of Economics.* 2ndEdition. United States.

Ochejele, J. J. (2007). *Economic analysis*. Jos: IchejumPress.

Okpe, I. J. & Abu, G. A. (2009). Foreign private investment and poverty reduction in Nigeria (1975 to 2003). J*ournal of Social Science,, 19(3),* 205-211. Retrieved from http://krepublishers.com/02-Journals/JSS/JSS-19-0-000-09-Web/JSS-19-3-000-09-Abst-PDF/JSS-19-3-205-2009-713-Okpe-I-J/JSS-19-3-205-2009-713-Okpe-I-J-Tt.pdf.

Oni, T. O., Imolehin, O. A., Adelowo, W. B.&Adejumo, A. V. (2014). Foreign private investment and economic growth in Nigeria (1980 – 2010). *International Journal of Development and Economic Sustainability, 2(1),* 39-48. Retrieved from http://www.eajournals.org/wp-content/uploads/Foreign-Private-Investment-and-Economic-Growth-in-Nigeria-1980-%E2%80%93-2010.pdf.

Osman, E. G. A. (2014). The impact of private sector credit on Saudi Arabia economic growth (GDP): An econometrics model using (ARDL) approach to cointegration. *American International Journal of Social Science, 3(6),* 109 – 117. Retrieved from http://www.aijssnet.com/journals/Vol_3_No_6_November_2014/13.pdf.

Simon-Oke, O. O. (2014). Foreign private investment, capital formation and poverty reduction in Nigeria.*European Journal of Business and Social Sciences, 2(10),* 157-168. Retrieved fromhttp://www.ejbss.com/Data/Sites/1/vol2no10 january2014/ejbss-1333-14-foreignprivateinvestment.pdf.

Soto, Hernando de. (1996). The Missing Ingredient: What Poor Countries Will Need to Make Their Markets Work. *The Privatization Process*. Ed. Terry L. Anderson and Peter J. Hill. United States of America: Rowman & Littlefield Publishers, Inc.. 19-24.

Suhendra, I. & Anwar, C. J. (2014). Determinants of private investment and the effects on economic growth in Indonesia. *GSTF International Journal on Business Review, 3(3),* 128 – 132. Retrieved from http://download.springer.com/static/pdf/337/art%253A10.7603%252Fs40706-014-0028-4.pdf?originUrl=http%3A%2F%2F.

Tan, B. W., & Tang, C. F (2011). *The dynamic relationship between private domestic investment, the user cost of capital and economic growth in Malaysia.* MPRA Paper No. 27964. Retrieved from http://mpra.ub.unimuenchen.de/27964/.

Todaro, M. P. & Smith, S. C. (2006). *Economic development*. 9th Edition, England: Pearson Education Ltd.Udoka, C. O. & Anyingang, R. A. (2012). The effect of privatization on economic growth of Nigeria: 1979 - 2007 in retrospect. *International Journal of Economic Development Research and Investment, 3(2),* 25 – 35. Retrieved from http://www.icidr.org/ijedri_vol3no2_august2012/The%20Effect%20of%20Privatization%20on%20Economic%20Growth%20of%20Nigeria-1979%20-%202007%20in%20Retrospect.pdf.