Domestic Private Investment and Economic Growth in Nigeria: Issues and Further Consideration

Kalu, Christopher U.
Department of Economics, Nnamdi Azikiwe University, Awka, Anambra State, Nigeria
Email: cu.kalu@unizik.edu.ng

Mgbemena O. Onyinye
Department of Economics, Michael Okpara University of Agric. Umudike, Umuahia, Abia State, Nigeria
Email: Onyinye02@yahoo.cu.uk

Abstract
This study re-considers the empirical investigation of the link between domestic private investment and economic growth in Nigeria, using the Cob-Douglas model framework. The model is estimated using Error Correction Modeling (ECM) approach and annual data covering 1970 to 2012 was used. The study shows the significance of investment on real gross domestic product (RGDP). The result of tests reveals equilibrium relationship between real GDP and its determinants in the long and short-run. An important finding of the study is that, like most other studies, Foreign Direct Investment (FDI) should at best complement domestic private investment. We therefore, conclude that macroeconomic policies and overall macroeconomic stability is quite essential for the promotion of domestic private investment.
JEL Codes: E22, F43,
Keywords: Domestic private investment, economic growth, error-correction model.

1   Introduction

The nature and stability of domestic private investment (DPI) have attracted enormous debate in the literature of applied economics, particularly in the advanced market economies. To emphasize the preponderance of studies on this subject, Uremadu (2006), Adegbite and Owualla (2007) argues that although foreign direct investment (FDI) is beneficial to host countries by speeding up the process of economic growth and development, its multiplier effect is greater. In other words, developing countries should depend greatly on domestic investment rather than foreign direct investment (FDI).

In the early 1960s and up to 1985, Nigerian government was involved in direct productive activities while encouraging private sector investment. During that period, government took control of the commanding height of the economy with the hope of hastening the growth process. The windfall from petroleum in the middle of 1970s brought in the needed financial resources. Government, therefore, went beyond the role of providing an enabling environment by establishing and owning companies in all sectors of the economy. In 1986, the structural adjustment programme (SAP) was put in place, 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. However, the expected investment boom after the structural adjustment programme was not feasible and not much was recorded in terms of domestic investment. The DPI share of the gross domestic product (GDP) is still below 10 percent and the ratio has since been declining (Akpokodije, 1998). Government's policy response in form of trade reforms and other macroeconomic reforms with the hope of promoting and encouraging domestic private investment still remains disappointing.

Several attempts have been made in the empirical literature to investigate the relationship between domestic private investment and economic growth although the results have been conflicting due to different estimation approaches. This study therefore, presents another contribution towards the growing literature as it seeks to examine the nature and relationship of domestic private investment and economic growth in Nigeria. The contribution of the study lies on the extension of the reviewing period as previous studies ended in 2010.

The sequence of the study is clear. Section 2 undertakes a brief review of the literature, while section 3 presents theoretical framework and methodology. Section 4 reports the empirical results and analysis while section 5 concludes the paper.

2 A brief Review of Relevant Literature
2.1 Theoretical Issues

It is generally agreed in the literature that investment stimulates growth within a market economy; as a result private sector investment no doubt remains the engine of growth with the public sector providing the enabling environment. Theoretically, the neo-classical approach to investment founded by Jorgenson (1963) was mainly spurred by the desire to address the shortcomings of 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. Their model also 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.

Solow's model of economic growth assumes that the relationship between per capita income and the rate of economic growth is negative (crafts and Toniolo, 1996). The justification is that countries with low per capita income have a weak capital formation and therefore, investment will achieve growing returns contrary to the countries with high per capita incomes. This leads to the conclusion that developing countries are able to converge in income with developed countries if they succeed in increasing domestic and foreign investment.

Meanwhile, endogenous growth model assumes that growth depends on savings and investment in human capital on the one hand (Lucas, 1988) and investment in research and development on the other (Mattana, 2004). In addition, it is argued that the free market

leads to less than optimal level of capital accumulation in human capital, research and development. Therefore, the government may improve the efficiency of resource allocation through investment in human capital and encouraging private investment in high-tech industries.

There exists significant relationship between public investment and private investment. Those that emphasize the financing side of expenditure draw attention to private investment crowding-out government expenditure. When it is assumed that private investment has higher productivity than public investment, a negative effect on growth is deduced. Those that stressed expenditure showed that private investment crowd – in public expenditures since this will tend to enhance the absorptive capacity of the economy and the profitability of private investment. However, it has been hypothesized that the response of private investors depends on the stage of the economy's business cycle, the availability of financing and the level of public investment. The nature of capital markets in developing countries limits the financing of private investment to the use of retained profits, bank credit and foreign borrowing. There is no doubt that the public sector investment crowd-outs private investment if it uses physical and financial resources that would otherwise be available to private sectors. Alternatively, the same condition obtains if the government sector produces marketable output that competes with private output. Similarly, the financing of public sector investment either through taxes, debt issuances or inflation will reduce the resources available to the private sector or hence dampen private sector activities (Chibber and Dailami, 1990).

2.2   Empirical Literature

The literature on domestic private investment and economic growth is quite enormous and it continues to grow by the day. However, most of these studies are done for the developing countries. This, amongst several studies, include studies by Khan and Reinhart (1990), Harigan and Mosely (1991), Greenway and Morrissey (1992), Serven and Salimano (992), Gunning (1994), Collier (1995), Akpokodje (1998), Dehn (2000), Lemi and Asefa (2001), Mamatzakis (2001), Rashid (2005), Tawiri (2010) for Libya. A good survey can also be found in Baghebo and Edoumiekumo (2012) for Nigeria. As argued by Baghebo and Edoumiekumo (2012), there is a growing literature on the link between private investment and economic growth in developing countries due, largely, to the fact that developing countries are fond of formulating sound investment friendly policies to attract foreign investment and only to reverse it later. They cited the case of Nigeria that moved from the era of regulatory control to deregulation and to guided deregulation. These array of empirical studies agreed that there is equilibrium between the growth proxy and the independent variables including domestic private investment. Two major events seem to have dimmed the relevance of the debate carried out in the different studies. The first is the array of estimation techniques and test procedures available to researchers. The second is the development in the Nigerian economy vis-à-vis, investment policies in the country. These events are precisely responsible for the resurgence in interest among researchers. The preceding events have led to the further consideration of the relationship between domestic private investments and economic by the authors using the error correction methods. From the literature reviewed, the authors argues that a slump in general economic activity will compel private investors to postpone their investment decision giving room for the boosting of foreign investment in the tradable sector while shrinking the non-tradable sector.

3   Theoretical Framework and Methodology

Investment – growth theories such as Harrod-Domar and Neo-classical theory, referred to investment rate as a determinant of economic growth. This study adopts the classical theory model of growth represented in the Cobb-Douglas model by introducing the domestic investment factor in the equation instead of capital stock to investigate the effect of domestic investment on economic growth in Nigeria.

Classical theory identified the sources of growth to include capital, labour and technology and the proportion of each variable can be identified through the Cobb- Douglas production function as stated below:

$$Y = AK^{\alpha}L^{1-\alpha} \ \dots\dots\dots\dots\dots\dots\dots\dots\dots \ (1)$$

Where; α is the claimant share of capital and $(1-\alpha)$ is the share of labour. This equation can be re-written as:

$$\frac{\delta y}{Y} - \frac{\delta A}{A} + \alpha \frac{\delta K}{K} + (1-\alpha) \frac{\delta L}{L} \ \text{-------------------------} \ (2)$$

In other words, the rate of growth in GDP can be determined by the rate of growth in A, K and L. The reason being that the change in capital stock is equal to the rate of change in investment. Similarly, equation (2) can be stated as follows:

$$\frac{\delta y}{Y} = \frac{\delta A}{A} + \alpha \frac{1}{Y} + (1-\alpha) \frac{\delta L}{L} \ \text{--------------------------} \ (3)$$

Given that $\frac{\delta A}{A}$ reflects the residual part of the basic equation, the equation becomes;

$$\text{GDP growth} = \alpha_1 \frac{1}{Y} + \alpha_2 L + e \ \text{---------------------------} \ (4)$$

Where: α_1 is the capital value of production, α_2 is the share of the value of production, and e – error term.

The model for this study was adapted with modification from Tawiri (2010), who studied domestic investment as a drive of economic growth in Libya between the periods (1962 – 2008). The model of his study is stated as follows:

$$LnY = \alpha + \beta_1 LnI + \beta_2 LnL + e \ \text{----------------------------} \ (5)$$

Where: α - constant coefficient, Y = real per capita GDP, I = real investment, L = labour force and e = error term. According to him, investment is expected to have a positive relationship with the rate of growth in GDP. Thus, the model equation of our study is specified below.

$$LnRGDP = \delta_0 + \delta_1 LnP_{INV} + \delta_2 LnPcoN + \delta_3 LNnGEXP + \delta_4 LnINT + e \ \text{--} \ (6)$$

$$\delta 1 .. \ \delta 3 > 0, \ \delta 4 < 0.$$

Where: RGDP = real GDP, P_{INV} = Private investment, P_{CON} = Private Consumption, GEXP – Government expenditure and INT – interest rate. Theoretically, the variables of PINV, PCON and GEXP are expected to impact positively on real GDP while INT is expected to impact negatively on real GDP. The data for these variables were sourced from the Central Bank of Nigeria Statistical Bulletin of various issues and the econometric software used was E-view 8. We assume that the logarithmic linear relationship of equation (6) can be transformed to interpret the coefficient of the explanatory variables as elasticity or semi-elasticity.

This study employs the vector error correction analytical approach using annual time series data from 1970 to 2012. The unit root test was carried out to examine the stationarity of each of the variables in the model. Unit root and co-integration tests are important tests that are

often used to circumvent the inherent limitations of traditional models as well as avoid spurious regression results (Hendry, 1986). To this effect, Augmented Dickey – Fuller (ADF) method is used to test for the stationarity of the series to ensure that we are not analyzing inconsistent regressions.

3.1   Error Correction Model

Since the analytical approach is the ECM, the approach needs to be discussed briefly. In order to capture both the long-run and the short-run dynamics of domestic private investment and economic growth, an error correction model (ECM) using the Johansen/Juselius (1990) multivariate co-integration technique becomes necessary The ECM test cannot be carried out without the co-integration test..The co-integration of at least one of the variables warrants the ECM to determine their degree of convergence in the long-run for example, If two times series Y_t and X_t are both integrated of order d, I (d), then, in general, any linear combination of the two series will also be I (d), that is, the residuals obtained on regressing y_t on x_t are I(d). The economic interpretation of co-integration is that if two or more series are linked to form an equilibrium relationship spanning the long run, then even though the series themselves may be non-stationary, they will move closely together over time and their difference will be stationary. Their long-run relationship is the equilibrium to which the system converges over time, and the disturbance term can be interpreted as the disequilibrium error or the distance by which the system is away from equilibrium. Similarly, to estimate the long-run relationship yt and xt, it is necessary to estimate the static model as:

$$y_t = b_{Xt} + et \text{ --------------------------------------}(7)$$

Although the equilibrium long – run relationship can be estimated directly, it is also important to consider the short – run dynamics of the variables under consideration, since the system may not always be in equilibrium. A simple dynamic model of short-run adjustment can be written as:

$$y_t = \alpha_0 + \chi_0 X_t + \chi_1 X_{t-1} + \alpha 1 Y_{t-1} + U_t \text{ --------------------}(8)$$

Re-arranging the parameters to give the error correction formulation (ECM)

$$\delta y_t = \chi_0 \delta x - (1 = a_1) (Y_{t-1} - b_0 - b_1 X_{t-1}) + U_t \text{ ----------------}(9)$$

Where; b_0 and b_1 are the coefficients. Importantly, the ECM incorporates both the short – run and long – run effects. When equilibrium holds, $(Y_{t-1} - b_0 - b1 X_{t-1}) = 0$. But in the short – run, when this equilibrium exists, this term is non-zero and measures the distance by which the system is away from equilibrium during time t. Thus, $(1 - a_1)$ provides an estimate of the speed of adjustment of the variable y_t. For instance, if $(y_{t-1}-b_0-b_1 X_{t-1}) < 0$, that is, y_{t-1} has moved below its equilibrium level, since -1 $(1 - a_1)$ is negative, it will boost δy_t, thereby forcing it back to its long-run path. When the coefficient of the lagged residual term from the first stage is negative, it suggests that the system comes back to the long-run path or adjusts. Therefore, there exists an error correction mechanism that returns the system to equilibrium.

4   Empirical Results and Analysis

The unit root test results which indicate the order of integration of each of the variables are presented in Table 1.

Table 1: Test for Stationarity and Order of Integration of the Series

Variables	ADF	Criticize value 5%	Order of integration
LRGDP	-5.97577	1% = -3.600987 5% = -2.935001 10%= -2.605836	I(1)
PINV	- 4.583323	1% = -3.600957 5% = -2.935001 10%= -2.605836	I(1)
PCON	- 6.018768	1% = -3.600957 5% = -2.935001 10%= -2.605836	I(1)
GEXP	- 6.472456	1% = -3.600957 5% = -2.935001 10%= -2.605836	I(1)
INT	- 10.14513	1%=-3.600987 5%= -2.935001 10%= -2.60051	I(1)

Source: Author's Computation Using E = View 8

The result reveals that the variables: RGDP, PINV, PCON, GEXP and INT are all stationary at its first difference. In other words the variables are integrated of order one i.e I(1). This implies that the null hypothesis of non-stationarity for all the variables is rejected. Given the unit – root properties of the variables, we proceed to establish whether or not there is a long-run co-integrating relationship among the variables in equation (6) by using the Johansen full information maximum likelihood method[1].

The Johansen co-integration test result reveals that the trace and maximum eigenvalue statistics show the existence of four co-integrating relationship between RGDP and its determinants at the 5 percent level of significance (Table 2). The conclusion drawn from this result is that there exists a unique long-run relationship between RGDP, PINV, PCON, GEXP and INT. Since there is one co-integrating vector, an economic interpretation of the long-run relationship between domestic private investment and real GDP can be obtained by normalizing the estimates of the unconstrained co-integrating vector as shown in Table 3. The identified co-integrating equation(s) can then be used as an error – correction term (ECM) in the error correction model. The series will form the error correction similar to the residuals generated when using the Engle – Granger two – stage approach.

Table 2: Johansen Maximum Likelihood Co-integration Test Results.
Panel A;
Date: 10/22/14 Time: 18:40
Sample (adjusted): 1976 2012
Included Observation: 37 after adjustments
Trend assumption: Linear Deterministic trend
Series: LRGDP LPINV LPCON LGEXP INT
Lags interval (in first difference): 1 to 5.

---

[1] The Johansen/Juselius approach produces asymptotically optimal estimates because it incorporates a parametric correction for serial correlation and the system nature of the estimator means that the estimator means that the estimates are robust to simultaneity bias.

Unrestricted Co-integration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace statistic	0.05 critical value	Prob**
None*	0.970815	234.6153	69.81889	0.0000
At most 1*	0.802186	103.8539	47.85613	0.0000
At most 2*	0.492136	43.89805	29.79707	0.0007
At most 3*	0.376921	18.82904	15.49471	0.0151
At most 4	0.035177	1.325002	3.841466	0.2497

Trace test indicates 4 co-integrating eqn(s) at the 0.05 level
*denotes rejection of the hypothesis at the 0.05 level
**MacKinnon – Haugh – Michelis (1999) p-values

Unrestricted Co-integration Rank Test (Maximum)

Hypothesized No. of CE(s)	Eigen value	Maximum statistic	0.05 critical value	Prob**
None*	0.970815	130.7614	33.87657	0.0000
At most 1*	0.802186	59.95558	27.58434	0.0000
At most 2*	0.492136	25.06901	21.13162	0.0132
At most 3*	0.376921	17.50404	14.26460	0.0148
At most 4	0.035177	1.325002	3.841466	0.2497

Max – Eigen value test indicates 4 Co-integrating eqn(s) at the o.05 level. *denotes rejection of the hypothesis at the 0.05 level. **MacKinnon-Haug-Michelis (1999) p – values.
 Panel B

Normalized Co-integrating coefficients (standard error in parentheses)

LRGDP	LPINV	LPCON	LGEXP	INT
1.0000	-0.756984	-035750	0.596349	-0.021164
	(0.04262)	(0.01494)	(0.03867)	(0.00230)

This can be written as: LRGDP -0.756984 PINV – 0.352750 PCON + 0.596349 GEXP – 0.021164 INT……….. (10)

4.1 Dynamic Specification of Domestic Private Investment and RGDP

So far, the results shows that the variables in the domestic private investment and economic growth model in equation (6) tend to move together in the long-run as predicted by economic theory. In the short-run, deviations from this relationship could occur due to shocks to any of the variables. In addition, the dynamics governing the short – run behaviour of domestic private investment and economic growth are different from those in the short run. Due to this difference, the short-run interactions and adjustments to long-run equilibrium are important because of the policy implications. According to Engle and Granger (1987), if co-integration exists between non-stationary variables, then an error – correction representation of the type specified by equation (9) above exists for these variables. The results in Panel B of Table 2 show that variables (GEXP and INT) are statistically significant and appropriately signed in line with predictions of economic theory and it suggests that as government expenditure on capital project increases real GDP also increases. With one percent point in government expenditure, it culminates to 59.6 per cent basis point increase in real GDP. This is consistent with the views of Hermes and Lensink (2001) that high interest

rate may discourage investment more especially when government deficit is financed with banking sector loan. The result is also in consonance with the findings of Baghebo and Eduoumiekumo (2012) who concludes that an increase in public investment (Government expenditure) will also bring about a proportional increase in real GDP.

The private investment and private consumption variables enter the long – run equation model with negative signs, contrary to a-prior expectations. This indicates the dearth or absence of domestic private investments and savings in Nigeria. This result highlights the importance of domestic private investment, private saving and private consumption in explaining real GDP during the sample period. Also, one percent basis point increase in domestic private investment and private consumption lead to a fall of 75.6% and 35.3% respectively of real GDP. However, the result does not support economic theory and that implies that the real GDP is influenced by other macroeconomic factors in Nigeria.

The VECM shows how the system adjusts to the long run equilibrium implied by the co-integrating equation (10). The ECM result is presented in Table 3 and as expected, the error – correction term (ECM$_{t-1}$) is significant in the equation model. This result substantiates the findings of co-integration among the variables earlier reported, but more importantly, it suggests that one cannot overlook the co-integrating relationship among the variables in the model; otherwise, this could introduce mis-specification in the underlying dynamic structure. The absolute value of the coefficient of the error correction term indicates that about 35.9 percent of the disequilibrium in the equation model is offset by short – run adjustment within a year. In this case, the full adjustment is achieved, and takes twelve months to complete the cycles.

Table 3: Parsimonious Estimate of the ECM of the Equation
Department Variable: D (LRGDP)
Method: Least Square
Date: 10/21/14 Time: 15:25
Sample (adjusted): 1971 2012
Included observation: 42 after adjustments

Variable	Coefficient	Std. Error	t-statistic	Prob.
C	-0.003889	0.049457	-0.078629	0.9378
D(LPINV)	0.238033	0.029792	7.989830	0.0000
D(LPCON)	0.666289	0.060108	11.08482	0.0000
D(LGEXP)	0.219696	0.084810	2.590449	0.0267
D(INT)	-0.014732	0.006468	-2.277675	0.0423
ECT(-1)	-0.358702	0.142275	-2.521184	0.0163

R-Squared	0.807027	Mean dependent var		0.127390
Adjusted R-Square	0.780226	S.D dependent vare		0.331399
S.E of regression	0.155360	Akaike into criterion		-0.754579
SUM Squared resid.	0.868923	Schwarz criterion		-0.506341
Log Likelihood	21084616	Durbin-Watson stat		1.749555
F – Statistics	30.11100			
Prob (F-Statistic)	0.0000			

Source: Author's Computation

The estimated coefficient of the error correction term has the expected sign and is significant at 1 percent. The elasticities of domestic private investment, private consumption and

government expenditure were all significant at 1 percent, while that of the interest rate was significant at 5% but with the right sign. The coefficient of determination (adjusted R^2) at 0.78 measures the goodness-of-fit of the estimated model. The result indicates that the model is reasonably fit in prediction i.e. the model explains 78 percent of behaviour in domestic private investment and real GDP in Nigeria. At 1.749, the Durbin Watson statistics does not suggest evidence of autocorrelation.

5   Conclusion and Recommendation

This study re-examined the link between domestic private investment and economic growth in Nigeria, adopting the ECM econometric analysis technique. This was done by modeling domestic private investment and economic growth in Nigeria. The study uses annual time series data from 1970 to 2012. 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 domestic private investment would help increase the real GDP. The ECM result shows that about 36% of any disequilibrium between the short-run and long-run domestic private investment is covered within a year. Therefore, 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 domestic private investment. Moreover, removing the seemingly obstacles and encouraging savings and investment instruments would boost domestic private investment and in turn stimulate economic growth.

On the basis of the above analysis, domestic 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 domestic private investment. Effort should be made to see that interest rate do not go beyond the threshold of 30% of GDP required to increase investment. Furthermore, public sector investment should (be) seen as an avenue for complementing private sector investment, the reason being that domestic private investment would contribute to real GDP than foreign private investment, which in most cases are speculative capitals in nature

Corresponding Author

Kalu, Christopher U, is a doctoral student and lecturer at Department of Economics, Nnamdi Azikiwe University, Awka, Anambra State, Nigeria. cu.kalu@unizik.edu.ng, P.M.B 5025.

References

Adegbike, E. O. & Owulabi, S.I. (2007), "1st National Finance and Banking Conference on Economic reform and the Nigerian Financial System. A communiqué read at National

Conference organized by the Department of Finance, University of Lagos, Nigeria, April 3-4.

Akpokodje, G. (1998), "Macroeconomic Policies and Private investment in Nigeria, In: B.E Aigbokan (ed), *Rekindling investment for economic development in Nigeria.* Ibadan: The Nigerian Economic society, 21-24.

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 Science* 295: 69 – 88.

Chibber, A. & Daailami, M. (1990), *Fiscal and private investment in developing countries: Recent evidence on key selected issues.* Washington D.C: The World Bank.

Collier, P. (1995), 'The marginalization of Africa'. *International Labour Review,* 134 (4-5), 541 – 557.

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

Dehn, J. (2000), 'Private investment in developing countries: The effect of commodity shocks and uncertainty. Oxford: Center for the study of African Economics, University of Oxford.

Domar, E. (1946), "Capital expansion, rate of growth and employment. *Econometrica* 137 – 147.

Ekpo, A. H. (2003), "The relative contribution of public sector and private sector investment to Nigeria's economic development since 1960, In: Iyoha, M.A and Itsede, C. O. (ed), *Nigeria Economy Structure, Growth and Development*. Mindex Publishing: Nigeria, Benin City.

Engle, R. F & Granger, C.W.H (1987), "Dynamic model specification with equilibrium constraint: co-integration and error correction, *Econometrica* 55:251 – 276.

Greenaway, D. & Morrissey, O. (1992), "Structural adjustment and liberalization in developing countries: What lesson have we learned? *Kyklos*, 46, 241 – 261.

Harrigan, J. & Mosely, P. (1991), "Evaluating the impact of World Bank Structural Adjustment tending. *Journal of Development Economics* 48, 419 – 427.

Harrod, R. F. (1948), Toward a Dynamic Economics: Some Recent Developments of Economic Theory and their application to policy – London: MacMillan.

Hendry, D. F. (1986), "Econometric Modeling with co-integrated variables. An overview. *Oxford Bulletin of Economics and Statistics,* Vol. 48(3): 201-12.

Johansen, S. & Juselius, K. (1990), "Maximum likelihood estimation and inference on co-integration with application to the demand for money. *Oxford Bulletin of Economics and Statistics* 52(2): 169-210.

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

Khan, M.S. & Reinhart, C. (1990), 'Private Investment and economic growth in developing countries" World Bank, 18 January, Pp. 19 – 27.

Lemi, A & Asefa, S. (2001), 'Foreign direct investment and uncertainty: The case of African economics' – Proceedings of the international business economics research conference, Reno, Nevada, October 8 – 12.

Lreas, R. (1988), On the Mechanism of economic development. *Journal of Monetary Economics,* 22:3-42.

Mamatzakis, E. C. (2001), "The effect of public expenditure on private investment": An empirical application'. In C.C. Paraskevopollos, T. Geogakopoulus and Michelis (ed).

The asymmetric global economy growth, investment and public policy. Toronto: APF Press, 68 – 79.

Mattana, P. (2004), The Uzawa – Lucas Endogenous Growth Model. Aldershot: Ashgate Publishing Limited.

Rashid, A. (2005), "Public – private investment linkage. A multivariate co-integration analysis. 21st Annual General Meeting and Conference, Pakistan Institute of Development Economics, Islamabad, December 19 – 21.

Serven, L. & Salimano, A. (1992), "Private investment and macroeconomic adjustment: A survey, *World Bank Research Observer,* 7(1), 95 – 114.

Tawiri, N. (2010), Domestic Investment as a drive of economic growth in Libya. International Conference on Applied Economics – ICOAE, 759 – 767.

Uremadu, S. O. (2006), "The impact of real interest rate on savings mobilization in Nigeria. Unpublished Ph.D thesis, University of Nigeria, Nsukka.