Research Article

Foreign Direct Investment and Economic Development in Low Income African Countries

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Abstract

Low income economies are characterized with high investment returns and therefore should attract foreign investment to primarily fill the existing gaps of productive factors which vividly reveals the basis for their underdeveloped status. The main objective of the study is to ascertain the impact of flow of FDI on the economic development of the host African countries characterized with low income per capita. Panel data were utilized for 39 African countries, 20 of which were low income countries. The results indicates that FDI had significant impact on the economic development of the host African countries, by enhancing the development of the host sector and reducing gradually dependence on foreign capital, which resulted in increased income per capita, better education, living standards and the wellbeing of the host economies. The study concludes by recommending that government of the host economies should guide the sector of FDI inflow, and ensure that policies are in place to enhance domestic investment development in such sectors. This will gradually bring about the closure of existing proactive factors and hence economic development.

Keywords:Foreign Direct Investment; Economic Development; Low Income Countries; Domestic Sector Investment.

Introduction

Over the past four decades, foreign direct investment (FDI) in the regions of Africa has been erratic and chaotic in nature. The volume of FDI has increased relatively over the past four decades in the African regions. The pattern of flow, however, has been that of sharp increases followed by sharp decreases in subsequent years. Also, the flow of FDI to African regions has declined in comparison to other developing regions in the world over the years; this therefore is reason for the increase being regarded as relative. For instance, in 1980; of the FDI flows to the developing regions of the world, only 5 percent was received by Africa, 86 percent - Latin America, and 7 percent Asia. By 1990, Africa had 8 percent proportion of flow; Latin America had 26 percent while Asia had 65 percent. In 2010, Africa received 10 percent of FDI to developing regions, Latin America 28 percent and Asia 62 percent. This characterized the flow of capital to Africa as the increase in capital flow was not in the same proportion as other developing regions of the world (UNCTAD 2012).

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The rate of return on FDI in the world has been interesting such that, the low income countries show greatest potential of return on investments in their countries and therefore should attract more foreign capital. Economic theory also harnesses the fact that capital should flow from rich countries to poor countries. Poor countries with lower levels of capital per worker, the scarcity of capital relative to labour should mean that the returns to capital are high. In response, savers in rich countries should look at poor countries as profitable places in which to invest. In reality, little capital flows from rich countries to poor countries. This puzzle, discussed in a paper by Lucas (1990), is often referred to as the "Lucas Paradox." Lucas puts forward several candidate explanations, including differences in human capital between rich and poor countries as well as the failures in international capital markets that might account for the lack of flows. None of these candidates can come near to explaining quantitatively the observed shortage of capital flows relative to what economic theory, specifically the neoclassical growth model, would predict.

This main aim of this research paper is to determine the impact of foreign direct investment flows on the economic development of host African countries with low income per capita. It also intends to see to what extent the flow of FDI impacts on the development of the host countries domestic sector, considering the expectation of host economies that receive the flow of FDI. In the course of the study, the relationship that exists between the rate of return on investment and the flow of FDI will be ascertained. The research paper will bring to fore the extent to which FDI has succeeded in reducing the gaps of scarce production factors in low income African countries.

Theoretical Framework and Literature Review

Standard economic theory tells us that financial capital should, on net, flow from richer to poorer countries. That is, it should flow from countries that have more physical capital per worker, and hence where the returns to capital are lower, to those that

have relatively less capital, but greater unexploited investment opportunities. In principle, this movement of capital should make poorer countries better off by giving them access to more financial resources that they can then invest in physical capital, such as equipment, machinery, and infrastructure. Such investment should improve their levels of employment, education, income, and living standard.

Developing economies are characterized with low income per capita features. This is reason why the research work of Lucas (1990) described them as poor countries. Also, the scarcity of capital relative to labour should mean that the returns to capital are high. This has been reinforced in the research work of Hymer (1976) in the theory which states that developing countries have low per capita income and therefore high rate of return on investment, given that an inverse relationship exists between income per capita and rate of return on investment. This invariably draws the flow of foreign capital to developing economies that have high rate of return on investment. The early stage of development requires more capital as domestic savings are low. As development progresses, need for capital gradually declines and domestic savings gradually increases.

In the research work of Prasad et al. (2007) it was also argued that; flows of capital from rich to poor countries are important because they can serve to augment the stock of capital and boost incomes in poorer countries. The paper stated that when these inflows take the form of (FDI), the effect on incomes can be substantial; due to the fact that FDI often brings with it technological know-how. As a result, large flows of capital from rich to poor countries could potentially contribute to convergence in per capita incomes. These flows do not happen on a large scale; however, we do not see widespread convergence of living standards between rich and poor countries.

The expected flow of FDI should be enormous to low income countries, due to the predicted inverse relationship that exist between FDI flow and the rate of return on investment. Since low income African countries should have high rate of return on

investment, the flow of FDI therefore should be commensurately huge. This however, as enumerated above, has not been the case concerning the flow of FDI in low income African countries. Also, as capital flows to low income countries, it should enhance domestic sector development, increase domestic output, income and savings. As savings increase, so should domestic investment increase, this invariably closes the investment gaps which are characteristics of low income countries. This according to the study of Chenery and Strout (1966), is the major aim of flow of foreign capital to host economies; to close existing gaps of production factors, and to gradually bring about the availability of this scarce productive factor in the domestic sector which eventually will result in reduced dependence on foreign capital as the host economy develops.

Hollis Chenery and Alan Strout (1966) identified three development stages in which growth proceeds at the highest rate permit by the most limiting factors; the skill limit, savings gap, and the foreign exchange gap. At early development stages, growth is likely to be investment limited as experienced by most developing economies. It is expected that foreign skill and technology reduce skill limit, investment reduces savings limit and foreign exchange limit equally. Since these gaps limit development, if they are filled, then there is development possibility. Hence, the filling of these gaps that limit development by flow of foreign capital has the primary aim of gradually closing the gaps, reducing reliance on foreign capital as an economy surges towards economic development.

Foreign direct investment has been said to have a positive impact on development in African countries. Diverging empirical results have prompted several studies to look for explanations for these seeming deviations in observed findings. Some initial research results support this perspective. For example, in the initial work of Borensztein et al. (1998) the main regression result indicates that FDI has a positive overall effect on economic growth, although, the magnitude of this effect depends on the stock of human capital available in the host economy. However, the nature of the interaction of FDI with human capital is negative for countries with very low levels of human capital.

This positive impact on the economic growth highlighted above was also reiterated by the research works of Lumbila (2005), Fortanier (2007), and Prasad et al. (2007). However, the research work of Prasad et al (2007), stressed an important focal point of the countries that benefitted the most from the inflow of foreign capital, as countries that had low dependence on the capital inflows. This further bolstered the major objective of flow of foreign direct investment as financial assistance aimed at bringing about the development of host sector domestic investment. It should increasing domestic savings. This closes gradually the savings-investment gaps, and as development ensues, the dependence on foreign direct investment also reduces to enhance maximum development of host economies' domestic sector investment and total national output.

Methodology

A test of the effect of FDI on economic development in low income African countries is performed in a framework of cross-country regressions utilizing data on FDI flows from 39 African countries for the period 1993-2012. According to the World Bank classification of economies, 20 of these countries are categorized as low income, 14 are low middle income, 4 upper middle and 1 high income African countries. Basedon theory,it is expected that foreign skill and technology reduce skill limit, investment reduces savings limit and foreign exchange limit equally. Since these gaps limit development, if they are filled, then there is a development possibility (Chenery and Strout 1966). Hymer (1976) highlighted that developing economies have low per capita income thereby drawing foreign capital as domestic savings are low at the early stages of development. As development proceeds, need for foreign capital gradually declines and as domestic savings gradually increases so also does domestic investment.

The dependent variable adopted in the research study is; GDP_k, which is the annual

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percentage growth of GDP per capita. It is usually used as an indicators of development in the economy as income per capita captures the living standard and welfare of the citizens of the host economies measure development. It is expected that, the higher the GDP_k, the higher the level of development in the economy. The independent variables are: Foreign direct investment (FDI), Active labour force (L), gross capital formation (K), trade balance (TB), technology (T), the rate of return on investment of capital (ROI), money and quasi money (M_2), level of corruption (CRPT), Percentage change in the GDP deflator or consumer price index (INFLT), central government expenditure (GOVTCONS), infrastructure (INFRST), and nominal exchange rates (EXR).

The model is a variation of the research work of Chenery and Strout (1966); Lumbila (2005); Prasad et al. (2007) and also Fortanier (2007). This research work aims at testing the direct effect of FDI on the economic development of low income African countries. The model below is therefore drawn from the research work of Lumbila (2005) and varied by eliminating some variables namely; institutional quality, the rule of law indicator proxy, and the initial level of GDP per capita. The model included more macroeconomic variables; inflation, exchange rate, money supply and other variables like central government expenditure, infrastructure, and corruption. The panel data are also extended by ten years; thereby having a total of twenty years panel data.

The model is therefore stated below:

$$GDP_k = f(L,K,FDI,TB,T,ROI,M_2,CRPT,INFLT,GOVTCONS,INFRST,EXR) \dots\dots\dots\dots\dots\dots\dots\dots\dots (1)$$

The model is therefore stated in Cobb-Douglas form as below:

$$GDP_k = AK^{\beta_1}L^{\beta_2}FDI^{\beta_3}TB^{\beta_4}T^{\beta_5}ROI^{\beta_6}M_2^{\beta_7}CRPT^{\beta_8}INFLT^{\beta_9}GOVTCONS^{\beta_{10}}INFRST^{\beta_{11}}EXR^{\beta_{12}} \dots\dots\dots\dots\dots (2)$$

Where GDP_k: the annual percentage growth of GDP per capita

      A: Total factor productivity

      L: Active labour force

      K: Gross capital formation

      FDI: Foreign direct investment

      TB: Trade balance

      T: Technology

      ROI: Rate of return on investment

   M_2: Money and quasi money

      CRPT: level of corruption

      INFLT: Percentage change in the GDP deflator or consumer price index

      GOVTCONS: central government expenditure

      INFRST: infrastructure

      EXR: nominal exchange rates

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$\beta_0, \beta_1, \beta_2, \beta_3, \beta_4 \, \beta_5 \, \beta_6 \, \beta_7 \, \beta_8 \, \beta_9 \, \beta_{10} \, \beta_{11}$ and $\beta_{12:}$ are the coefficients

The Cobb-Douglas cannot be estimated directly using the OLS technique since it is non-linear. It is therefore necessary to transform into a linear form that allows the use of OLS techniques. In doing this the double log-transformation rule is applied to

the equation. The essence of this is that it provides estimated parameters that can be interpreted directly as elasticity.

To estimate the following equation;

$$lnGDP_k = \beta_0 + \beta_1 lnL + \beta_2 lnK + \beta_3 lnFDI + \beta_4 lnTB + \beta_5 lnT + \beta_6 lnROI + \beta_7 lnM_{2\,+}$$
$$\beta_8 lnCRPT + \beta_9 lnINFLT + \beta_{10} lnGOVTCONS + \beta_{11} lnINFRST + \beta_{12} lnEXR + \varepsilon_t \,..........\,.....................\,(3)$$

Restating equation (3) in panel form therefore, we have;

$$lnGDP_k = \beta_{0i} + \beta_1 lnL_{it} + \beta_2 lnK_{it} + \beta_3 lnFDI_{it} + \beta_4 lnTB_{it} + \beta_5 lnT_{it} + \beta_6 lnROI_{it} + \beta_7 lnM_{2it}$$
$$_+ \beta_8 lnCRPT_{it} + \beta_9 lnINFLT_{it} + \beta_{10} lnGOVTCONS_{it} + \beta_{11} lnINFRST_{it} + \beta_{12} lnEXR_{it} + \varepsilon_{it} \,.....................\,(4)$$

All data are sourced from United Nations Statistical Division, World Bank; world development indicators, world governance indicators, and African development indicators. These are for the specified period stated from 1993 till 2012, and for the 39 selected African countries 20 of which are low income African countries, 14 low middle, 4 upper middle and 1 high income African countries. The technique for estimation adopted in this study is the fixed effect least square dummy variable (LSDV) model. Each entity's intercept does not vary over time, that is, it is time-invariant.It is assumed that the (slope) coefficient of the regressors does not vary across countries or over time. This allows for the fixed effect intercept to vary among the countries, by using the dummy variable technique, with proper avoidance of the dummy-variable trap, which is a situation of perfect collinearity. The models fitted on the data meet the asymptotic assumptions of the Hausman test; this therefore is reason for adopting the fixed effect regression analysis, this can be seen in Appendix III, Table A.III.1

Results and Discussions

A bivariate analysis of the study was set out from the correlation test to describe the

statistical relationship between the selected variables and also the presentation of graphical illustration of the trend pattern of variables for the selected period.

Correlation Test

Correlation is the inter-relationship or association of variables in a model. It shows the strength or degree of linear association between two variables. Movement in one variable may cause movement in another variable in the same direction or opposite directions as the case may be. Correlation can vary within the range -1 which is the perfect negative correlation and +1 the perfect positive correlation.

In the correlation Table 1, it is deduced that the variables have varied relationships between them, and since the major reason for test is to ascertain the possible presence of multicollinearity, results do not show its presence between the variables. Only few instances noted between government expenditure, gross fixed capital formation, and money supply that recorded rather high association between variables.

Table 1 has the summary of variables correlation values;

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Table 1: Correlation Results Table

	FDI	L	K	TB	T	ROI	M$_2$	CRPT	INFLT	GOVTCONS	INFRST	EXR
FDI	1.0000											
L	0.4997	1.0000										
K	0.0837	0.0793	1.0000									
TB	0.0271	-0.1837	0.0398	1.0000								
T	0.3274	0.1760	0.0241	0.1082	1.0000							
ROI	-0.0026	-0.2735	0.1194	0.4023	0.1613	1.0000						
M$_2$	0.3003	0.3192	0.8098	0.0432	0.2072	0.0246	1.0000					
CRPT	-0.0286	-0.0847	-0.0544	-0.0697	0.0635	0.1946	-0.0552	1.0000				
INFLT	-0.0144	-0.0206	-0.0139	-0.0160	-0.0189	-0.0416	-0.0136	0.0231	1.0000			
GOVTCONS	0.1307	0.1488	0.9275	0.0172	0.0404	0.0022	0.8365	-0.0596	-0.0140	1.0000		
INFRST	0.1479	-0.0724	-0.1471	0.0652	0.4718	0.1446	-0.0762	0.2420	0.0145	-0.1600	1.0000	
EXR	-0.0640	-0.1174	0.2674	-0.0472	0.1118	0.1092	0.1954	-0.0111	-0.0111	0.2301	-0.0653	1.0000

Source: Authors Compilation (2013)

Graphical Illustrations

For graphical representations, in the Appendix I, Graph A.I.1 represents the trend of Domestic Investment in the African Region. From the graph it can be seen that domestic investment has also progressively increased even though at a low proportion before the year 2000, after which it increased at a really high magnitude.

Likewise for Graph A.I.2; they present the trend pattern and behaviour of ROI, The rate of return on investment has been increasing though at a slow rate over the years. However, the increase became increasingly stable and strong by about year 2008. Graph A.I.3 however represents the trend pattern between FDI and gross fixed capital formation. As FDI increases, so does the increase translate into increasing activity in the domestic sector investment. In the period of global crisis of 2008 and 2009 (Subprime Mortgage crisis), the flow of foreign direct investment experienced a drastic fall. However, graph A.I.1 affirms that even though the flow of foreign direct investment declined during this period, domestic investment has experienced a relative increase over the years for the low income African countries.

Fixed Effect Least Square Dummy Variable Analysis

The test is to determine the effect of flow of foreign direct investment on economic development of low income African countries, vis-à-vis the lower middle, upper middle and high income countries. The test examines the countries not in regional classification but in income level classification. According to the World Bank classification of economies, there are four classifications of countries on the basis of income level. There are high income, low income, low-middle income, and upper-middle income countries. For income level classification in this study see Appendix I.

Table 2 presents results that estimate equation (4) using GDP Per capita as a measure of economic development. High income countries could not be estimated because only one country was in the classification, which therefore made the availability of needed data rather minimal. From the results table, FDI is not significant in neither low middle income nor upper middle income countries but significant only in low income countries. However from the results, it is observed that a change in FDI will result in a greater magnitude of change in economic development in the low income and upper middle income countries, whereas a reduced proportion of change in economic development in the low middle

income countries. Active labour force, trade balance, technology and money supply respectively are significant on economic development in both low income and low middle income countries. It can also be seen from the results that, as active labour force, trade balance, and technology respectively increase the economic development at a lower magnitude in the low income and low middle income countries, but at a greater magnitude in the upper middle income countries. For money supply in all regions, however, a change results in a greater proportion of change in economic development.

For gross capital formation, rate of return on investment, and exchange rates respectively, they are all significant on economic development in all income classifications as stated. However from the results, it can be seen that an increase in gross capital formation for all income classifications will result in a greater magnitude of change in economic development, whereas a lesser proportion of change for rate of return on investment and exchange rates for all classification of countries. The level of corruption is not significant in all income classifications, however, a change in the level of corruption results into a lesser magnitude of change in the low income and low middle income countries respectively, whereas a greater proportion of change in the upper middle income countries. The level of inflation is significant on economic development in low income and upper middle income countries respectively, but not in low middle income countries. However, a change in inflation level will result into a lesser proportion of change in the economic development for the

low middle income countries, whereas for both low
middle income and upper middle income countries they experience a greater proportion of change.

Government expenditure is significant on economic development only in low income countries, but not significant in other income classifications. However from the results, a change in government expenditure will result into a greater proportion of change in economic development in both low income and low middle income countries respectively, whereas it will result in a lesser magnitude of change in the upper middle income countries. Also the level of infrastructure is significant on development in both low middle income and upper middle income countries, whereas it is, not significant in low income countries development. However, for all income classifications a change in infrastructure will result into a lesser magnitude of change in economic development.

R^2 and Adjusted R^2 for the low income countriesare 0.9268 and 0.9199 respectively; low middle income countries are 09816 and 0.9795 respectively; and upper middle income countries are 0.9827 and 0.9762 respectively. These indicate that the independent variables explain respective variations in the dependent variables used to measure economic development. For the t-statistics, the results show that the variables are significant as most of the values are greater than 2, thereby showing the level of significance. F-statistics are also significant for the three regressions in figure 4.6.2a, as each income level classification regression shows high level of significance.

Table 2: Estimation Results (Logged Equation): Income Classification

DEPENDENT VARIABLE - MEASURE OF ECONOMIC DEVELOPMENT (GDP$_K$)		
LSDV		
VARIABLE	REGRESSION I LOW INCOME	REGRESSION II LOW MIDDLE INCOME	REGRESSION III UPPER MIDDLE INCOME
lnFDI	0.014* [1.91] (0.057)	-0.004 [0.55] (0.582)	0.007 [0.52] (0.605)
lnL	-0.128*** [0.67] (0.000)	-0.563***[4.31] (0.000)	0.79 [1.44] (0.156)
lnK	1.181*** [14.82] (0.000)	0.557***[5.18] (0.000)	1.471*** [4.35] (0.000)
lnTB	-0.231*** [4.55] (0.000)	-0.136*** [2.74] (0.007)	0.003 [0.05] (0.962)
lnT	-0.025*** [4.46] (0.000)	-0.010** [2.00] (0.047)	0.031 [1.34] (0.189)
lnROI	-1.163*** [13.23] (0.000)	-0.633*** [5.76] (0.000)	-1.535*** [5.00] (0.000)
lnM$_2$	0.160*** [7.42] (0.000)	0.609***[18.91] (0.000)	0.203[1.52] (0.135)
lnCRPT	-0.109 [1.55] (0.123)	-0.003 [0.15] (0.879)	0.005 [0.03] (0.975)
lnINFLT	-0.020** [2.00] (0.046)	.001 [0.16] (0.870)	0.014*** [3.54] (0.001)
lnGOVTCONS	0.091*** [3.15] (0.002)	0.042 [0.98] (0.327)	-0.313 [1.38] (0.176)
lnINFRST	-0.002 [0.05] (0.958)	-0.052** [2.11] (0.036)	-0.325*** [2.96] (0.005)
lnEXR	-0.183*** [8.65] (0.000)	-0.620*** [19.86] (0.000)	-1.010*** [9.79] (0.000)
Constant	-23.41***[12.52] (0.000)	-10.88*** [5.19] (0.000)	-28.16*** [3.22] (0.003)
R^2 Adjusted R^2 F-Stat No of Countries Dummy Countries Number of Observations	0.9268 0.9199 133.54(0.0000) 20 Yes 369	0.9816 0.9795 465.51(0.0000) 14 Yes 244	0.9827 0.9762 151.42 (0.0000) 4 Yes 56

Source: Adegboye F.B. (2014). Economic development as measure of income (GDP$_K$), Regression I, II and III are the results of low income, low middle income and upper middle income respectively. * indicates significance at 10 percent; **-significance at 5 percent;
        ***-significance at 1 percent.

Recommendations and Conclusion

The study found out that for countries with lower income per capita, foreign direct investment has positive significant impact on economic development. This is also corroborated by theory as ascertained in the research work of Asiedu (2002) and Jaspersen et al. (2000), which states that as foreign investment flows to countries with low income per capita, this will result into an increase in income thereby increasing

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domestic savings and investment to bring about significant positive impact on economic growth. This study thereby found that only in low income country classifications is this impact of foreign investment significant on economic development. It was not significant for lower middle, upper middle and high income classification of host African countries. The study also found that foreign direct investment has significant impact on the development of host sector investment. This also is in line with theory as stated by Chenery and Strout (1966).

The research work found out that a negative relationship exists between foreign direct investment and the level of corruption, inflation and exchange rates. This is in line with the Apriori expectation of the research study. This is also backed by literature as essentially highlighted in the research study of Ayadi et al. (2010), which says that the level of transparency and size of foreign direct investment flows have long run equilibrium relationship. The study stated that therefore to attract foreign investment; it is expedient to transform the political and the economic environment.

We can conclude from the results of this research study that a positive significant relationship exists between foreign direct investment and economic development. As the flow in foreign capital increases, it results into increase in income, invariably domestic investment, resulting into a steady decline in the dependence of external financing. Growth in income, expectancy of life and education put together results into a better standard of living and ability to sustain further development by nations' resources also increase. As increase in domestic investment, alongside with viable socio-economic environment is sustained, it will bring the desired economic development to low income host African countries.

Given the above circumstances and estimated results, it becomes imminently imperative for the study to recommend that; Government of low income countries that welcome the flow of foreign direct investment need to do so with caution of the sector of the economy that they flow into.

They should be such sectors that will encourage domestic participation, thereby increase productivity domestically. They should also enforce Policies that will encourage the increase in domestic investment participation in sectors to reduce dependence on FDI. Income level attained by each low income nation desiring development must be sustained to make development a reality. The capital approach to sustainable livelihood theory states that the capital assets stock of nations must be non-depleting to ensure that the present and upcoming ones preserve the attained level of income growth. Governments of African nations therefore should ensure that strategies are put in place to ensure that the income growth attained by maximally employing the domestic sector of host nations must be preserved against decline.

Acknowledgements

References

1.Asiedu, E. (2002). "On the Determinants of Foreign Direct Investment to Developing Countries: is Africa Different?," *World Development* Vol. 30, No 1, pp. 107–119.

2.Ayadi, O. F., Ajibolade, S., Williams, J. & Hyman, L. M. (2010). "Transparency and Foreign Direct Investment into Sub-Saharan Africa: An Econometric Investigation," *Proceedings of International Academy of Africa Business and Development (IAABD)*. Held in Lagos, May, 2010.

3.Borensztein, E., De Gregorio, J. & Lee, J. W. (1998). "How Does FDI Affect Economic Growth?," *Journal of International Economics*, 45(1), 115-135.

4.Chenery, H. B. & Stout, A. M. (1966)."Foreign Assistance and Economic Development," *American Economic Review* Vol. 55 pp.679-733.

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5.Fortanier, F. (2007). "Foreign Direct Investment and Host Country Economic Growth: Does the Investor's Country of Origin Play a Role?," *Transnational Corporation*Vol. 16, No. 2

6.Hymer, S. H. (1976). The International Operations of National Firms: A Study of Direct Investment, *MIT Press*, MA, Cambridge.

7.Jaspersen, F. Z., Aylward, A. H. & Knox, A. D. (2000).'The Effect of Risk on Private Investment: Africa Compared with Other Developing Areas,' In P. Collier, & C. Pattillo (Eds.), Investment and risk in Africa (pp. 71 – 95).*New York: St. Martin's Press*.

8.Lucas, R.E. (1990). "Why Doesn't Capital Flow from Rich to Poor Countries?," *American Economic Review*, Vol. 80, No. 2. pp. 92–6.

9.Lumbila, K. N. (2005). 'What Makes FDI Work? A Panel Analysis of the Growth Effect of FDI in Africa,' *Africa Region Working Paper Series*.

10.Prasad, E., Rajan, R. & Subramanian, A. (2007)."The Paradox of Capital," *Financial Globalization.Finance & Development*, 44 (1).

11.United Nations Centre for Trade and Development.(2012). UNCTADstat; *Economic Indicators*. (Extracted from IMF Data Warehouse on: 3/13/2012 9:35:53 AM
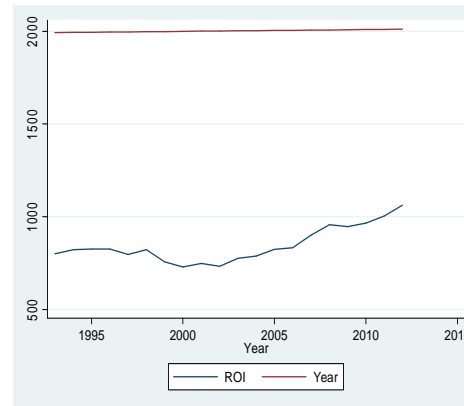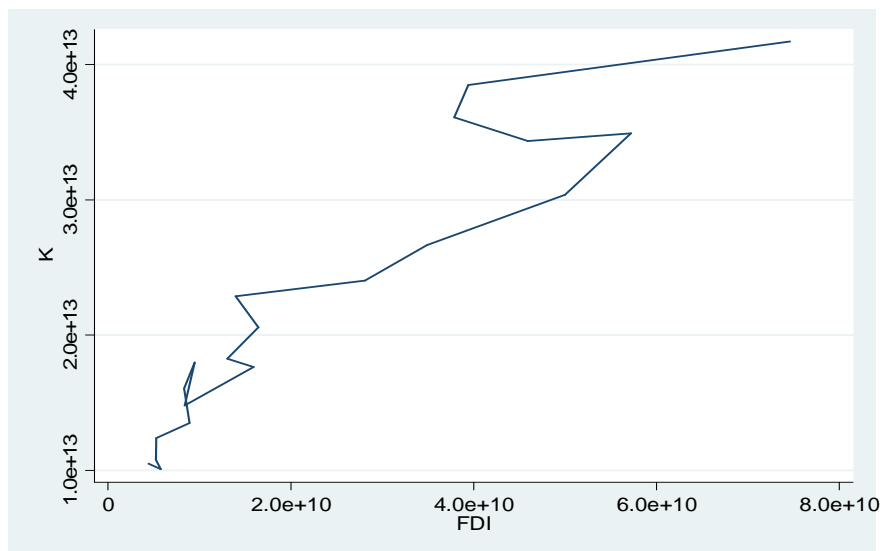
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Appendices

Appendix I

A.I.1
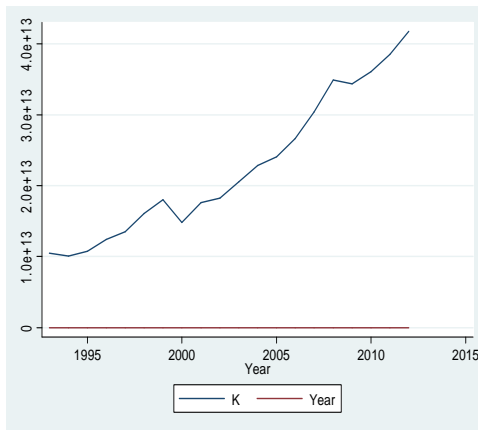
Source: Adegboye F.B. (2014)

A.I.2

Source: Adegboye F.B. (2014)

A.I.3

Source: Adegboye F.B. (2014)

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Appendix II

Table A.II.1: Income Level Classification of African Countries

S/no	LOW INCOME COUNTRIES	LOW-MIDDLE INCOME COUNTRIES	UPPER MIDDLE INCOME COUNTRIES	HIGH INCOME COUNTRIES
1	Benin	Algeria	Gabon	Equatorial Guinea
2	Burkina Faso	Angola	Libya	
3	Burundi	Botswana	Mauritius	
4	Central African Republic	Cameroon	South Africa	
5	Chad	Cape Verde		
6	Comoros	Congo Rep		
7	Congo Dem Rep	Djibouti		
8	Côte d'Ivoire	Egypt		
9	Gambia	Lesotho		
10	Ghana	Morocco		
11	Kenya	Namibia		
12	Madagascar	Sudan		
13	Mauritania	Swaziland		
14	Mozambique	Tunisia		
15	Nigeria			
16	Sao tome and Principe			
17	Senegal			
18	Togo			
19	Zambia			
20	Zimbabwe			

Source: Adegboye F.B. (2014)

Appendix III

Table A.III.1: Hausman Test

	(b) Fixed	(B) RANDOM	(b-B) Difference
LnFDI	-0.009	-0.009	0.0002
LnL	0.078	0.044	0.034
LnK	0.113	0.116	-0.003
LnTB	0.206	0.207	-0.001
LnT	0.044	0.024	0.019
LnROI	-0.086	-0.075	-0.011
LnM_2	-0.095	-0.058	-0.036
LnCRPT	-0.032	-0.018	-0.014
LnINFLT	0.004	0.003	0.0004
LnGOVTCONS	-0.064	-0.070	0.006
LnINFRST	0.100	0.086	0.014
LnEXR	0.054	0.022	0.032

$$\chi^2 = 47.48(0.0000)$$
Source: Adegboye F.B. (2014)

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