



The Disappointing Performance of Foreign Direct Investment in Industrial Development in Sub-Saharan African Countries

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ABSTRACT

The Sub-Saharan African (SSA) region compared to other developing regions has been the most vulnerable as regards foreign capital inflow. The flow of foreign direct investment (FDI) is expected to result into advanced managerial and technological capacities and acceleration of industrial development. The study examined how the flow of FDI to the SSA region has impacted the industrial development of the region, using the proxy of industry value added growth. The study made use of pooled data from thirty three SSA countries within the period 1993 and 2012. The method of analysis utilized for the study was the fixed effect least-square dummy variable model, employed to estimate the impact of FDI on industrial development for the selected host countries. The study finds that FDI is statistically significant in relation to industrial development for host SSA countries; but it is disappointing that the expected desired features of industrial development, like increased manufacturing outputs, reduction in high level of import and manufactured goods; etc., have not been realized. It is therefore recommended that the governments of host countries should put policies in place to encourage development of industries domestically, to enhance sustained industrial development, such that dependence on external financial assistance and borrowing could be reduced, resulting in sustained increases in non-oil export earnings, domestic income, savings, investment, technology, and hence improved living standard.

Keywords: Foreign Direct Investment, Industrial Development, Sub-Saharan African Countries

JEL Classifications: F21, O14

1. INTRODUCTION

The flow of foreign investment into developing countries is expected to close the gaps of savings, investment and foreign exchange. Normally, such flows as foreign direct investment (FDI) flows into the domestic sector should improve industrialization, increase production of goods locally and hence reduce the degree of importation of finished goods, while it increases the consumption of locally produced goods. This is so because it is expected that FDI brings with it foreign skills and technology to reduce the skill limitation by technology diffusion as investment reduces savings and foreign exchange constraints. The main objective of the study is to examine the flow of foreign investment into the sub-Saharan African (SSA) region with a view to determine the impact it has on industrial development in the region.

Chenery and Strout (1966) identified three development stages in which growth proceeds at the highest rate permitted by the

most limiting factors; the skill limit, savings gap, and the foreign exchange gap. At the 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 constraint development, their removal should brighten development prospects.

The direction of flow of FDI and sector of investment are vital determinants, of the impact that FDI flow has in improving the industrial performance and productive investment of host economies. Despite the relative increase of FDI inflow to Africa, the expected performance in the development of domestic sector, capital formation and industrial performance has failed to materialize. As a result, the desired improved performance in industrialization in the host economies is not achieved, which makes the desired industrial development doubtful and hence making the anticipated increase in total output lacking. This was

highlighted in the research work of Adegboye (2014), provided the likely reason for the gaps of investment not being closed by FDI was the direction and sector of FDI inflow. Such sectors being capital intensive resource exploitation such as the oil sector, which do not impact significantly on domestic investment and capital formation as would have been the case if it were investment in the real sector like manufacturing and agriculture.

The SSA region, though observed to have recently witnessed relatively increased inflows of foreign investment, however, no visible improvement in domestic investment, growth indicators, and development is patently seen in the region. This evidently implies that foreign investment has not flowed into the right sectors which could enhance increased output and results in desired growth. It, thereby, has not been appreciably beneficial as expected, despite the fact that FDI is noted as one of the most important channels of growth in an economy. Countries that have accessed flow of foreign capital have been said to have done better than countries that have not, in terms of improvement in per capita income and standard of living (Rao et al., 2008).

This paper is divided into five sections. Section 2 presents an overview of theoretical framework and review of related literature. Section 3 presents methodology, model specification and estimation. Section 4 highlights the results and discussion of the study. In Section 5 which is the last section, presents the summary of main findings, recommendations and conclusion of the study.

2. LITERATURE REVIEW AND THEORETICAL FRAMEWORK

Hymer (1976), in his theory states that, developing countries have low per capita income and therefore high rate of return on investment. This is because; an inverse relationship exists between income per capita and rate of return on investment. This invariably draws flow of foreign capital to developing economies that have high rate of return on investment. The early stage of development desires more capital as domestic savings is low. As development proceeds, the need for foreign capital gradually declines as domestic savings gradually increases. As domestic savings increase it is expected that investment domestically should increase to corroborate the assertion of Chenery and Strout (1966), in describing the three stages of development. According to them, the gaps of investment and skills and foreign exchange are to be closed by the inflow of FDI. This is because the flow of foreign capital will cover up for the limit in these production factors that enable the countries to depend less on external capital, experience growth in domestic sector investment, aid increase in domestic production and consequently increase export from increase in output of the real sector which were limited initially as a result of low income and savings.

The study by Ayanwale (2007) examined the relationship between FDI inflow and Nigeria's economic growth, hence addressing the country's specific dimension to the FDI growth debate. The study considered a scope larger than previous studies in terms of number of years and the effect of major components of FDI on economic growth. It exploited the opportunity of access to differential impact

of oil FDI and non-oil FDI on Nigeria's economic growth. The study also investigated the empirical relationship between non-extractive FDI and economic growth, examining the determinants of FDI in the Nigerian economy. The period of analysis covered by the study was 1970-2002, and the augmented growth model was estimated via the ordinary least square and the 2SLS method of analysis. The researcher found that openness is negatively related to FDI inflow. It also found that infrastructure and returns on investment both have a positive relation with FDI, though returns on investment are not statistically significant. The research found that a positive relationship exists between FDI inflow, inflation, and government size, whereas it found a negative relationship between FDI inflow, human capital and political stability. It was concluded in his study that FDI in Nigeria contributes positively to economic growth. Although, the overall effect of FDI on economic growth may be minimal, the components of FDI do have a positive impact. Though the number of years was sufficient for the analysis, the study could have made comparison with more other African countries and even other regions of the world. Also to get more applicable results, a more appropriate method of analysis could have been used to help measure possible shocks and their implications on the economy.

The study of Dos Reis (2005), similarly, found reasons for capital flowing uphill instead of downhill. The researcher found that when the impact of capital flow volatility is computed as a percentage of GDP, the volatility experienced by developing countries is much higher. Within country groups, volatility measured as a proportion of GDP is higher for small industrial countries than for G-7 countries. Among developing countries, African countries appear as the most vulnerable group, followed by the Western hemisphere, Middle East and Asian countries.

Unlike previous similar studies, this present study is aimed at determining an alternative measurement of capital flow volatility based on the volatility of net capital flows as a proportion of GDP, and it was argued that it was a more appropriate measure to capture the economic effects of capital flows volatility.

It also measured volatility in exports, and capital flows altogether as a share of GDP. This was to capture countries' total vulnerabilities to balance of payment crisis, arising not only from capital account shocks, but also from current account shocks; that is, commodity shocks. The model adopted was the procyclical behaviour of both groups of high and middle income countries, as in the work of Kaminsky et al. (2004), Gavin and Hausmann (1996), and O'Donnell (2001). The methodology used was standard deviation and correlation coefficients based on a period of 20 years and 187 countries. However, the method of analysis used is not appropriate to capture macroeconomic volatility as desired to be measured in the study, just as stated in the study that the methodology used might have underestimated its macroeconomic impact.

The research of Prasad et al. (2007) is aimed at examining how capital is allocated around the world and whether foreign capital really promotes growth in developing countries in a manner not carried out by previous studies. The method of analysis adopted was regression. To examine this issue, 59 developing countries

were sorted into a range from low to high average growth rates over the period 1970-2004. It was found that, current accounts of non industrialized countries were positively correlated with long run growth. Thus, countries that grew more quickly have been less reliant on foreign finance. In addition, a negative correlation for industrial countries was found.

The research work of Adegboye (2014), aimed at ascertaining the effect of FDI net inflow on economic development, was performed in a framework of cross-country regressions, utilizing data on FDI net inflows to thirty three African countries for the period 1993-2012. The study found out that for the African region, instead of the gaps of investment and foreign exchange to gradually close as FDI flowed in, it rather became wider despite the relative increase in the flow of FDI.

3. METHODOLOGY

Based on the theory of FDI and new growth, it is expected that foreign capital in the form of skill and technology will reduce skill limit, investment reduces savings limit and foreign exchange limit equally. As these gaps are closed, development possibility is enhanced because the limit on savings, investment, and technology is provided for, while the production factors are scarce relative to need.

A test of the effect of FDI on the level of industrial development to host SSA countries is performed in a framework of cross-country regressions. This is done by utilizing the data of thirty three African countries for the period 1993-2012 on growth of industry value added (IVAG), and FDI net inflows, alongside with other determinants of industrial development such as: Gross fixed capital formation (K), export (EXP), technology (T), agricultural value added (AVA), and manufacturing value added (MVA).

The dependent variable in the model is IVAG, while independent variables are FDI, and other determinants; as stated above. This model is specified to find out the resultant effect of FDI on industrial development, alongside other determinants of industrial development (Appendix Tables 1 and 2).

The model is stated as follows:

$$IVAG = f(FDI, K, EXP, T, AVA, MVA) \tag{1}$$

Where, IVAG: Industry value added percent growth

FDI: Net inflow of foreign direct investment

K: Gross fixed capital formation

EXP: Merchandise export

T: Technology

AVA: Agriculture value added

MVA: Manufacturing value added.

$\beta_0, \beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ and β_6 : Are the coefficients.

Stating equation 1 in linear form, we have:

$$\ln IVAG = \beta_0 + \beta_1 \ln FDI + \beta_2 \ln K + \beta_3 \ln EXP + \beta_4 \ln T + \beta_5 \ln AVA + \beta_6 \ln MVA + \epsilon_i \tag{2}$$

Stating equation 2 in panel form, we have:

$$\ln IVAG_{it} = \beta_{0i} + \beta_1 \ln FDI_{it} + \beta_2 \ln K_{it} + \beta_3 \ln EXP_{it} + \beta_4 \ln T_{it} + \beta_5 \ln AVA_{it} + \beta_6 \ln MVA_{it} + \epsilon_{it} \tag{3}$$

(+)

The signs under equation 3 are the Apriori expectations of the variables in the model.

All data were taken from the United Nations Statistical Department, World Bank, World Development Indicators, African Development Indicators and the study of Adegboye (2014). These are for the specified period from 1993 to 2012, and for the 33 selected African countries.

4. RESULTS AND DISCUSSIONS

4.1. Fixed Effect Least Square Dummy Variable Analysis

Equation 3 above was estimated to obtain the results in Table 1. The regression shows the result of the equation, where IVAG is the dependent variable in the regression column, estimating industrial development. For the t-statistics, the result shows that the variables are significant, as most of the values are above 2, thereby, showing the level of significance. The F-statistics has a value of 24.90 (0.0000), which shows that it is significant at 1% level in explaining the level of industrial development. It can be noted from the results, therefore, that for the regression, where IVAG is proxy of industrial development, FDI net inflow is significant only at 5%. The coefficient of FDI net inflow is inelastic, that is, the coefficient employed in measuring the elasticity is less than one in absolute values. This means that a one percent change in FDI net inflow brings about a less than one percent change in industrial development. This explains why even though FDI net inflow is expected to have significant impact on industrial development, the impact is minimal and almost negligible for the selected SSA countries.

The gross fixed capital formation is also significant at 5%. The coefficient of gross fixed capital formation is inelastic, that is, the

Table 1: Estimated regression result

Variable	Regression
lnFDI	0.143** [1.97] (0.049)
lnK	0.112** [2.26] (0.025)
lnEXP	0.048 [0.58] (0.559)
lnT	0.276*** [3.82] (0.000)
lnAVA	0.675*** [4.99] (0.000)
lnMVA	-1.087*** [9.72] (0.000)
Constant	-4.154*** [2.67] (0.008)
R ²	0.2393
Adjusted R ²	0.1145
F-statistics	24.90 (0.0000)
Number of Countries	33
Dummy Countries	Yes
Number of observations	501

Source: Authors' compilation (2015). The disappointing performance of foreign direct investment in industrial development in sub-saharan african countries. Absolute t statistics are displayed in parenthesis beside the coefficient estimates, while probability values are in brackets under the coefficient estimates. *Indicates significance at 10%, **significance at 5%, ***significance at 1%, AVA: Agriculture value added, MVA: Manufacturing value added, FDI: Foreign direct investment

coefficient employed in measuring the elasticity is less than one in absolute values. This means that a 1% change in gross fixed capital formation brings about a less than one percent change in industrial development. Technology is significant at 1%. The coefficient of technology is inelastic, that is, the coefficient employed in measuring the elasticity is <1 in absolute values. This means that a one percent change in technology brings about a $<1\%$ change in industrial development. AVA is significant at 1%. The coefficient of agriculture value added is inelastic, that is, the coefficient employed in measuring the elasticity is <1 in absolute values. This means that a one percent change in agriculture value added brings about a $<1\%$ change in industrial development.

MVA is also significant at 1% on industrial development. The coefficient of MVA is elastic, that is, the coefficient employed in measuring the elasticity is greater than one in absolute values. This means that a one percent change in MVA brings about a $>1\%$ change in industrial development. However, export is not significant on industrial development. This well explains the prevailing condition in most SSA countries, as they are more of importing than exporting nations; and this clearly shows that their level of industrial development, particularly in terms of manufacturing of goods has remained lower than expected.

5. SUMMARY OF MAIN FINDINGS, RECOMMENDATIONS AND CONCLUSION

This study has investigated FDI and industrial development with evidences from selected SSA countries. The impact of the net inflow of FDI has been ascertained in relation to the proxy of industrial development. The estimated result of the model reveals that: FDI is significant only at 10 percent on industrial development, as highlighted in equation 3, which is emphasized in Table 1.

5.1. Main Findings

While the majority of previous studies focused on economic growth, this study takes a step further to find the impact of FDI on industrial development. We found FDI to be significant and positively related to industrial development, although at a minimal magnitude. The flow of FDI into the economy should, *cet. par.* increase domestic investment and economic activities to have net beneficial impact on the host economies.

In particular, it is expected that with the increase in net inflow of FDI into these host African countries, the level and types of manufacturing of goods and production of services should increase, which should, in turn, result into reduction in the importation of manufactured goods and services to assist in closing the domestic investment and foreign exchange gaps. But disappointingly, we found that this expected industrial developmental impact has failed to materialize in most of these SSA countries, contrary to what has been seen achieved in some other regions like India and South East Asia.

5.2. Main Recommendation

Governments of countries that welcome the flow of FDI should do so with appropriate policies to channel the flows to sectors of

critical importance. This is to ensure that the direction of flows falls within the overall development plan of the country. It is expedient also that as the domestic sector is developed with evidence of increases in income among others; it should be sustained to ensure lasting developmental impact.

From the results of this and other studies, however, it is clear that while governments are usually enticed by the attractiveness of FDI for the positive spillovers that it can generate, governments should be cautioned that the desired spillover effects are not automatic, and that the presence of FDI alone is insufficient to reap the desired benefits for the specific local economy.

We consider it appropriate to reiterate here our earlier (Ojo and Alege, 2010) relevant policy recommendation that governments should be wary of focusing on FDI attraction alone, but should rather make sure that the targeted FDI has the preferred efficient and economic spillovers by focusing on policies that enhance the desired benefits of FDI, which in the context of the present study is, *inter alia*, higher level of industrial development. Noting that the developmental impact of FDI is not automatic, the desired policy framework should seek to encourage the inflow of FDI that is aligned to the country's developmental goals, particularly that of attaining rapid industrialization and economic development.

6. CONCLUSION

We can conclude from the results of this study that though there exists a positive significant relationship between net inflow of FDI and industrial development, this is yet to be at such a reasonably high level as to translate to increase in manufacturing activities, revamping of some closed industries, to result in increased industrial development and reduction in the high level of importation of manufactured goods.

Thus, as net inflow of FDI increases, the resultant increase in income invariably does not significantly impact the domestic and industrial sectors, with the expected increase in investment. Nonetheless, the flow of FDI should bring about industrial development by accelerating domestic investment, level of production, income, savings, and so on; and this, in turn, should result into a steady decline in dependence on external financing. The growth in income, savings, and investment, technology, channeled into the right industry like oil and real sectors should increase the value added growth in these sectors, which if sustained will result in industrial development over time. This should consequently result into higher employment and living standard of people in the region as well as ability to sustain further development.

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APPENDICES

Appendix Table 1: Countries included by Sub-Region

Central	Eastern	Northern	Southern	Western
Angola (LM)	Burundi (L)	Sudan (LM)	Botswana (LM)	Benin (L)
Cameroon (LM)	Comoros (L)		Lesotho (LM)	Burkina Faso (L)
Central African Republic (L)	Djibouti (LM)		Namibia (LM)	Cape Verde (LM)
Chad (L)	Mauritius (UM)		South Africa (UM)	Côte d'Ivoire (L)
Congo Rep (LM)	Madagascar (L)		Swaziland (LM)	Gambia (L)
Congo Dem Rep (L)	Mozambique (L)			Ghana (L)
Equatorial Guinea (H)	Kenya (L)			Mauritania (L)
Gabon (UM)	Zambia (L)			Nigeria (L)
	Zimbabwe (L)			Senegal (L)
				Togo (L)

Source: Adegboye (2014). (H) Indicates high income countries, while (L), (LM), (UM), are low income, low-middle income, and upper-middle income countries

Appendix Table 2: Sources of variable and measurement

Variable	Definitions	Variable measurement	Source
IVAG	Industry value added percentage growth	Percent	WDI
FDI	FDI net inflow	Millions	WDI
K	Gross fixed capital formation	Millions	UNSD
EXP	Merchandise export	Millions	WDI
T	Technology	Thousand	WDI
AVA	Agriculture value added as percentage GDP	Percent	WDI
MVA	Manufacturing value added as percentage GDP	Percent	WDI

Source: Adegboye (2014), GDP: Gross domestic product