

Determinants of FDI and Economic Integration in Sub-Saharan Africa

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ABSTRACT:

This paper examines the effects of economic integration, FDI and increased trade liberalization in Sub-Saharan Africa. Sub-Saharan Africa is a region notorious for low human development indexes, slow economic growth and high levels of corruption. Ever since the inception of western aid and corporate interests, the region has not developed as we should expect. This paper will look to find the effects of increased “globalization” in the region and attempt to suggest reasons for the developmental challenges rampant in this region of the world. I expect to find that even though development has increased in some areas (for variables such as fossil fuel consumption); there will also be uncharacteristic stagnation and possible “reversed” development in some areas. With preexisting institutions and corrupt government practices/officials, I expect the results to find that neoliberalist policy, foreign direct investment and economic openness will lead to no or negative developmental results.

JEL Classification: O13, O19

Keywords: Foreign Direct Investment, Sub-Saharan Africa, Determinants

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1.0 INTRODUCTION:

Sub-Saharan African cities and regions face enormous challenges heading into the 21st century, yet remarkably, some of these challenges are not fully established as political issues in the debate over urban poverty, urban management, the devolution of government, or popular participation. Urban food security is one such issue. The nature of the urban food security question has changed considerably in the past quarter century. This paper briefly reviews changes in urbanization, poverty, and food security in sub-Saharan Africa to suggest some research questions, then will use the example of the DRC to illustrate the effects of globalization. These examples are intended to be illustrative of the kinds of empirical questions raised for research, though not necessarily offering exhaustive answers to those questions.

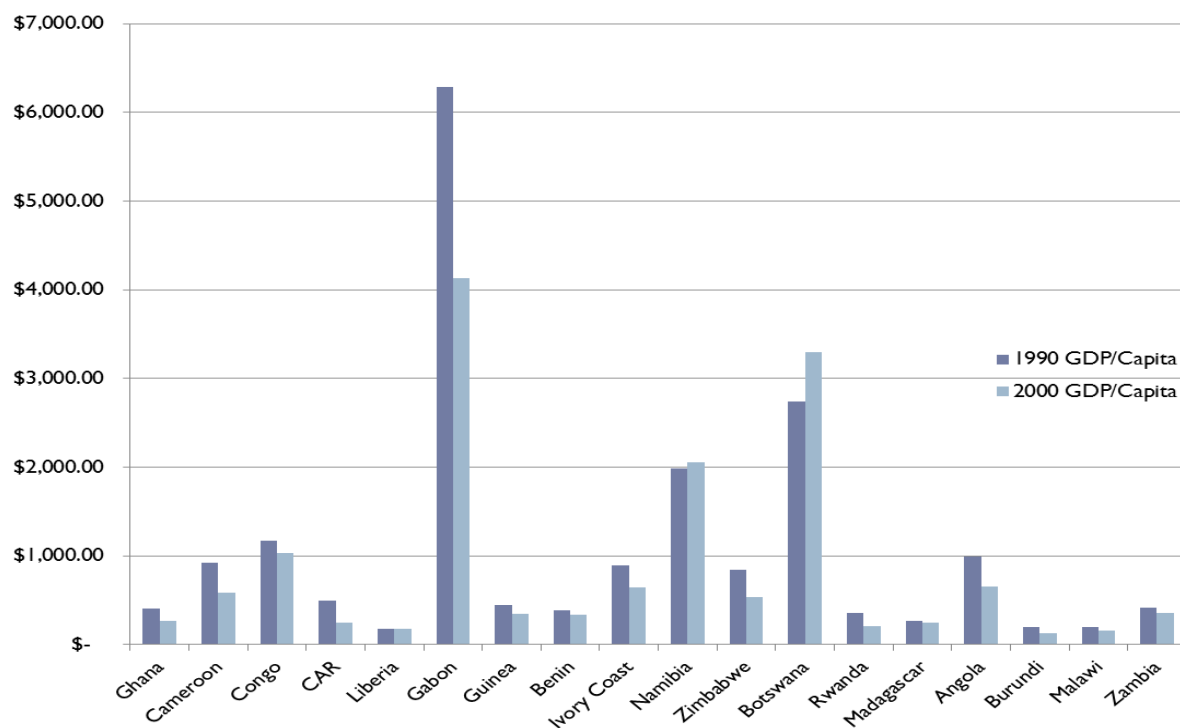
I will test the effect of foreign direct investment (FDI) on economic growth in a cross-country regression framework, utilizing data on FDI flows from industrial countries to 18 developing countries over the last decade. My results suggest that FDI is an important vehicle for the transfer of technology, contributing relatively more to growth than domestic investment. However, the higher productivity of FDI holds only when the host country has a minimum threshold stock of human capital. Thus, FDI contributes to economic growth only when a sufficient absorptive capability of the advanced technologies is available in the host economy. We test the effect of FDI on economic growth in a framework of cross-country regressions utilizing data on FDI flows from industrial countries to 20 developing countries over the last two decades. My results suggest that FDI is in fact an important vehicle for the transfer of technology, contributing to growth in larger measure than domestic investment. Moreover, I find that there is a strong complementary effect between FDI and human capital, that is, the contribution of FDI to economic growth is enhanced by its interaction with the level of human capital in the host country. However, the empirical results imply that FDI is more productive than domestic investment only when the host country has a minimum threshold stock of human capital. The results are robust to a number of alternative

specifications, which control for the variables usually identified as the main determinants of economic growth in cross-country regressions. This sensitivity analysis along the lines of Levine and Renelt (1992) shows a robust relationship between economic growth, FDI and human capital. One major conclusion is that trade policy in Sub-Saharan Africa works much the same way that it does elsewhere. High levels of trade restrictions have been an important obstacle to exports in the past, and their reduction can be expected to result in significantly improved trade performance in the region. There is little ground for pessimism in this respect, or for concern that Africa's different conditions poor infrastructure, geography, or dependence on a limited number of primary products make it a special case in which exports are not responsive to prices or to the traditional instruments of commercial policy. At the same time, the effects of trade policy on economic growth seem to be indirect and much more modest. The fundamentals for long-term growth are human resources, physical infrastructure, macroeconomic stability, and the rule of law.

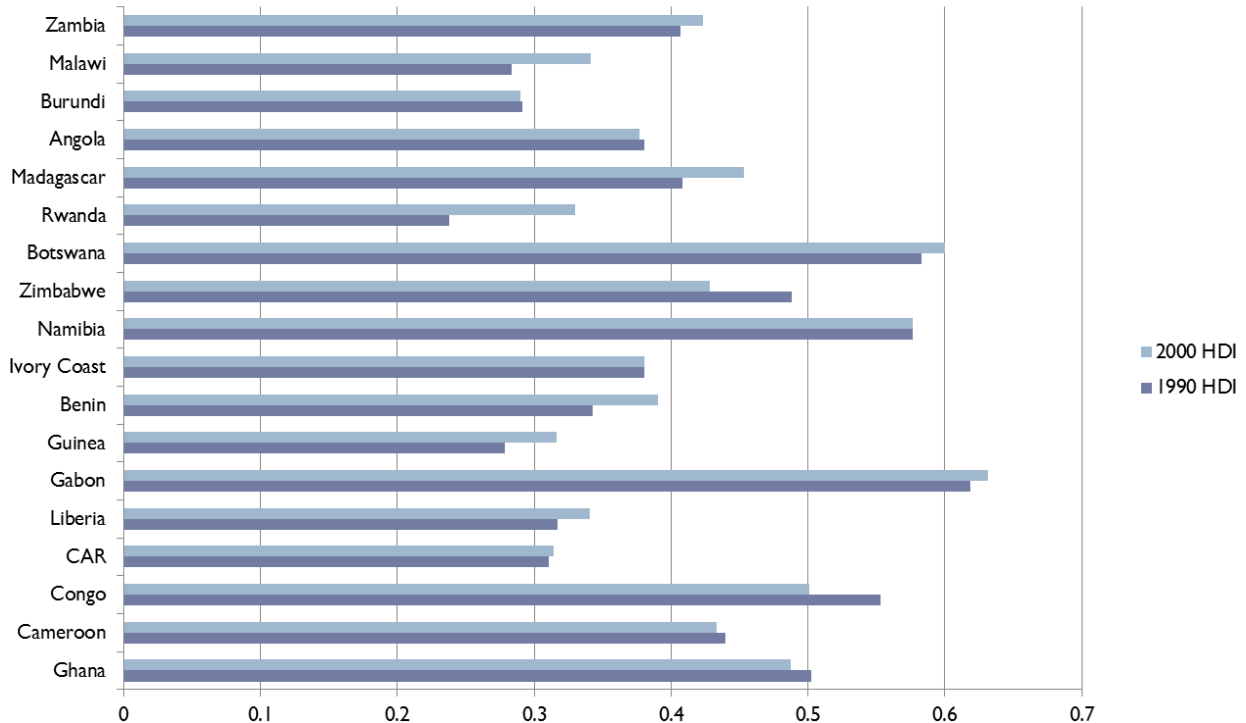
3.0 TRENDS

One of the most profound consequences of structural adjustment and liberalization in Africa has been the weakening of important and vital sectors of the economy. This region has now been exposed to the competition of the rest of the world. Small Sub-Saharan businesses have been crushed by well-established foreign corporations that can offer cheaper and better products/services. Sub-Saharan Africa is contrasted to other regions (East Asia in particular) that have based growth on rapid industrialization and structural transformation. Here, in this region, economic development has taken a very different turn. Coming from a similar background as SSA, East Asian economies have become some of the most lucrative and powerful in the world. Their exchange rate, trade and other policies have ensured relative prices favorable to export industries with preferential interest rates and other financial policies supporting investment and economic restructuring.

Yet, when most other developing economies embarked on import-substituting industrialization in the 1930s (in Latin America) and the 1950s, Africa remained under colonial rule for much of the period, and well into the 1960s. Consequently, the import substitution phase in most of SSA was relatively short, lasting barely a decade in many countries due to the lateness of independence and the early onset of economic slowdown owing to the oil shocks of the 1970s (Mkandawire, 1988). Import compression following the debt crisis constrained capacity utilization and investment, preventing many countries in SSA from adjusting positively to the changed global environment. In this context, trade liberalization, beginning in the 1980s, prematurely exposed African “infant” and weak industries to global competition against much more mature industries in Western countries. The United Nations Industrial Development Organization (UNIDO 2010) notes that African countries had been increasingly gaining comparative advantage in labor-intensive manufacturing before this forced import liberalization. Presuming that African import-substituting industries had been protected for far too long and would never become viable, let alone internationally competitive despite considerable evidence to the contrary from Northeast Asia,



the policy preference was simply to abandon existing industrial capacity, precipitating deindustrialization (UNIDO, 1999).



The above two graphs depict development trends with respect to the human development index and gross domestic product per capita. The first graph measures the GDP per capita for each of the countries included in the following empirical regression. From the period 1990-2000, we can see that for most of the sub-Saharan countries, GDP per capita has gone down. Despite Gabon (who has a significantly higher GDP than the rest of the measured countries) the GDP/capita levels are very low with respect to westernized countries. This makes the decrease in GDP/capita even more significant-the already small incomes had become even smaller. The second graph measures the change in the human development index (HDI) and even though some had gone up during this decade, many of these indexes went down during the passing of this decade. Those countries that did experience an increase in their HDI often did not increase by any significant amount. It is also important to note that any increase could also be explained by natural advancements in medicine, technology and overall education levels. If this is the

case then any slight increase with respect to HDI may not be because countries invest in their human capital levels.

3.1 THE FDI PROBLEM

Increased amounts of FDI and international aid flooding the region, sustainable development has been destroyed. The region has been facing massive problems such as preventable disease contractions, famine, high mortality rates (including infants) and regional civil wars. Foreign direct investment (including aid) disrupts the normal economic development of a society. Current, modern industrialized nations were allowed to naturally go through the stages of development. For instance, European countries were not given great amounts of aid and thus were able to develop their own economy according to their own individual supply and demand levels. Already existing businesses including small farmers have been run out of business by the unnatural inflows of cash into the region. For example a small business consisting of a group of farmers would not be able to compete with cheap and even free products coming in from outside the country. In many instances these food products, and products in general are of a better quality which, if we assume consumers act rationally, will run current business to the ground. In a sense, FDI creates a dependence on outside cash inflows which are inherently unstable. It is important to remember that it isn't the population of each country or the region itself that is dependent on outside influence-but it is the governments of those individual countries that will become dependent. In turn, this can destroy democratic tendencies and can create unhealthy amounts of corruption. Precisely the issues that stem from the disconnect established when the government isn't accountable to its people.

Increased FDI in SSA since the late 1990s has been cited as evidence that the economic tide is turning (Pigato, 2000). However, there is little evidence that FDI in Africa is likely to bring sustained, broad-based economic growth, let alone strong employment generation. Much of the FDI has gone to mining, which is hardly influenced by broader macroeconomic policy considerations, and does not necessarily significantly expand employment, diversify exports or meaningfully transfer technology. It thus

contributes little to broad-based development. An analysis of project-level FDI data for the Southern African region confirms that FDI projects in resource sectors tend to involve much larger investments than in other sectors (Mhlanga et al.2010). Some new investments have gone to expand or improve existing capacities in sectors where monopolistic rents are high, such as beverages and cement, and oil, gas and petroleum refining. FDI has also been drawn by the one-time opportunities associated with privatization. For example, FDI to Ghana—hailed by the BWIs as a “success story”—peaked with privatization, but was followed by negative outflows. Moreover, much recent FDI has involved acquisitions on heavily discounted “fire sale” terms. Such investments accounted for about one sixth of FDI flows into Africa in the 1990s. In 1998 alone, privatization in SSA attracted US\$ 694 million in FDI (UNCTAD, 2000). Such one-off sales explain the jump in FDI in the 1990s, but by the end of the decade.

2.0 LITERATURE REVIEW:

The topic of corruption and FDI has been heavily researched, theorized and analyzed just as long as they have both been around. The amount of corruption present is known to affect FDI amounts and even all of FDI a country received all together. Exploring the role of corruption and the impact of China joining the WTO in 2001, Aw and Tang (2010) explore this impact as seen from Malaysia. This empirical study shows that FDI seems to be cointegrated; both Malaysia and china investing in their counterparts at roughly the same time. Aw and Tang (2010) Openness, interest rates, inflation and levels of corruption were all major determinants in determining FDI in Malaysia. This study can be used to see similarities between countries and regions around the world with respect the role FDI plays. In a strikingly different article by Melo and Quinn (2015), finds that corruption actually works to facilitate FDI inflows to many African countries. This article addresses how oil changes the degree to which corruption is relevant in predicting FDI. Using a panel data set Melo and Quinn (2015) show that corruption has a negative impact on attracting FDI but only when these countries do not produce oil. Oil mitigates the degree to which

corruption is relevant. Irrespective of corruption, the more oil a country produces, the more FDI it will receive. A study conducted by Adams (2009) finds that FDI has an initial negative effect on direct investment and subsequent positive effect in later periods for the panel of countries studied. The review of the literature and findings of the study indicate that the continent needs a targeted approach to FDI, increase absorption capacity of local firms, and cooperation between government and MNC's to promote their mutual benefit. In a study conducted by Quazi and View (2014), corruption was shown to actually facilitate FDI. This study focused on FDI in African nations and came to the conclusion that because of the low levels of infrastructure in Africa (whatever they may be) corruption was the only way the wheels could be 'greased' in order to ensure investments. Marthur and Singh (2013) were the first to show that foreign investors care more about economic freedoms than political freedoms. This shows how some politically unfree nations such as Singapore and china receive a heavy amount of FDI-because of their economic openness. In another study that proves corruption hurts the prospect of FDI Brada et al. (2012) focuses on Eastern European countries and compare their FDI intakes and compare that with prosperity and the number of MNC's located within each country's borders. The study finds that there is a linear and negative relationship between host-country corruption and the likelihood of MNC; s locating in that country. This study echoes much of research done in many areas of the globe. There is overwhelming evidence to state that corruption has a negative impact on FDI; however in some instances it can be seen as a positive prerequisite for FDI. A study conducted by Ndikumana and Verick (2008) explores the linkages between foreign direct investment and domestic investment. The results suggest, first, that FDI crowds in domestic investment and, secondly, that private investment is a driver of FDI, implying that African countries will gain much from improving the domestic climate. In a study conducted by Bertocchi (2002), it was found that colonialization had a profound impact on the economies of African nations. What was interesting was that this study found that colonialization wasn't only poor for economic growth during the time of occupation; but in fact hinders those countries ability to obtain stable economic growth. The study measures African countries that were colonized, dependent and independent to gather static points on which to develop an accurate analysis. Naude and Krugell (2011) investigate the role geography

and existing institutions have on FDI in African countries. Their article uses a cross-country econometric approach to identify the determinants for foreign direct investment (FDI) in Africa. It is concluded that geography does not seem to have a direct influence on FDI flows to Africa. Neither market-seeking nor re-exporting motives of FDI seem to dominate, with different policy instruments being significant in the different specifications.

3.0 EMPIRICAL MODEL:

The empirical model to be used is as follows and will analyze variables from 18 Sub-Saharan African countries. The model will measure the effects of FDI on trade openness, GDP/Capita, education expenditure, health expenditure and the mortality rate. Data was gathered from 18 different Sub-Saharan countries (data collected from the World Bank) and will be analyzed from the years 2005-2013. The regression is a panel regression and will be running eight years with five variables per country. In order to limit the skewness of the results there have been countries purposely omitted. Large, regional economic powerhouses of South Africa, Nigeria, and Kenya have been left out for this reason. The Democratic Republic of the Congo is perhaps the most impacted country in Sub-Saharan Africa with respect to negative impacts of FDI and increased neoliberalist policy. The DRC had to be left of this study simply because it is a black hole for data. For the years from 2005-2013, data had not been collected from the DRC. The World Bank was the only data used for the study-this was done to ensure that the methodology used to gather the data is consistent among countries and among the different dates.

3.1 MODEL

- $FDI = \beta_1 T + \beta_2 GDP + \beta_3 EE + \beta_4 DR + \beta_5 HE + \varepsilon$
 - T= Trade Openness (% of GDP produced by trade)

- GDP= Gross Domestic Product/Capita
- EE=Education expenditure (% of Expenditures)
- DR=Death Rate (Per 1,000 people)
- HE=Health expenditure, public (% of GDP)

Trade openness (T) refers to the percentage of GDP created from international trade. This variable is indicated in the equation because it is important to understand the extent to which trade is affected by GDP and vice-versa. GDP per capita is an important variable to link with FDI because we would imagine that increased levels of FDI will have a positive effect on the GDP/Capita levels. Westernized thinking about development would lead us to believe that more money and investment equals greater returns and development. This fundamental way of thinking will be put to the test. The education expenditures are adjusted for savings and are represented as a percent of gross national income. This expected sign of this variable is positive with respect to foreign direct investment inflows. The death or mortality rate of the country can give insight into areas such as disease prevention, the state of the healthcare system, the country's responsiveness to a disaster. The expected sign of this variable will be positive with respect to FDI. The health expenditure variable (HE) will give the study depth with respect to government investment in the welfare of its population. With increased development (FDI), we should see increased healthcare expenditures.

3.2 PROBLEMS WITH STUDY:

There are four countries included in the study (three in 1990 and one in 2000) that have negative amounts of FDI for that given year.

Angola (Beginning in) 1990:

The 27-year war can be divided roughly into three periods of major fighting – from 1975 to 1991, 1992 to 1994, and from 1998 to 2002 – broken up by fragile periods of peace. By the time the MPLA (Peoples Movement for the Liberation of Angola) finally achieved victory in 2002, more than 500,000 people had died and over one million had been internally displaced. The war devastated Angola's infrastructure, and severely damaged the nation's public administration, economic enterprises, and religious institutions. During this period less international countries and corporations were willing to do business and to trade with the country. This is the major contributor and explanation to why the FDI is negative for this year.

Cameroon (Beginning in) 1990:

For years before 1990 Cameroon's largest economic contributor was its export of natural resources such as oil and natural gas. Many large corporations had set up factories and refineries in the country to extract the fuel. However, beginning just before 1990, the resources of these fossil fuels had all but run out. This caused a great disinvestment in the country-resulting in a negative FDI for that year.

Zimbabwe (Beginning in) 1990:

The economy was run along corporatist lines with strict governmental controls on all aspects of the economy. Controls were placed on wages, prices and massive increases in government spending resulting in significant budget deficits. This experiment met with very mixed results and Zimbabwe fell further behind the first world and unemployment. Some market reforms in the 1990s were attempted. A 40 per cent devaluation of the Zimbabwean dollar was allowed to occur and price and wage controls were removed. These policies also failed at that time. Growth, employment, wages, and social service spending contracted sharply, inflation did not improve, the deficit remained well above target, and many industrial firms closed in response to increased

competition and high real interest rates. The incidence of poverty in the country increased during this time.

3.3 DATA

Regression Statistics	Column1
Multiple R	0.350969284
R Square	0.723179438
Adjusted R Square	0.695076215
Standard Error	1149833681
Observations	162

The R-Squared value indicates that the model explains the variability of the response data around its mean. There is a significant linear relationship between the dependent variable, and the independent variable. This proves that most of the independent variables used in the regression mode are statistically important and causal. The variables used to explain the FDI inflow into these 18 sub-Saharan nations can be explained through the use of these variables.

ANOVA	Column1	Column2	Column3	Column4	Column5
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	5	2.89749E+19	5.79498E+18	4.38310715	0.00092249
Residual	156	2.0625E+20	1.32212E+18		
Total	161	2.35225E+20			

Column1	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	1803470922	545526590.4	3.305926701	0.001174719	725899062.4	2881042781
Trade (% of GDP)	5666497.543	3086264.362	1.836037643	0.028255819	- 429761.8957	11762756.98
GDP per capita (current US\$)	- 70355.30236	40450.66307	- 1.739286751	0.043956863	- 150256.9918	9546.387088
Adjusted savings: education expenditure (% of GNI)	69149680	47167106.52	1.466057283	0.144645483	- 24018916.27	162318276.3
Death rate, crude (per 1,000 people)	- 129305193.7	32506375.79	- 3.977840979	0.000106189	- 193514631.7	- 65095755.68
Health expenditure, public (% of GDP)	- 135057457.3	75777737.52	- 1.782284108	0.036648019	- 284740275.6	14625360.94

4.0 EMPIRICAL ANALYSIS

After running the regression, the results show that all of the variables are extremely good determinants of FDI, and influence the y value. All of the variables are $<.1$ except from the education expenditure (% of GNI). However, the p value for education spending isn't too high as to call the variable a poor determinant of FDI. It is a determinant, but certainly not to the degree the other four variables are. With an increase in FDI, it would make sense that there would be in an increase in trade. With more businesses and other countries investing in a specific country, trade should naturally increase-the trade openness number should reflect this (where FDI is very

prominent). With increased FDI, education expenditures (adjusted for savings and as a % of GNI) has increased for most of the Sub-Saharan countries that were studied. Higher rates of education spending would lead to more FDI inflows because the government is essentially investing in its labor force. With higher education levels, more specialized and technical labor can be produced-creating an attractive environment for companies to set up operations. A lot of times, the death rate would remain stagnant, or in many cases it would go up from the years 2005-2013. There are many factors that could explain this-one of the determinants is FDI. With increased death rate levels, there is a positive correlation to FDI inflows. This seems counter-intuitive, but with such a significant p-value, this statistic is difficult to miss. FDI inflows have significance with the rate at which these governments spend on health in their respective countries. Increased health expenditures is a good determinant of FDI, its p-value is $<.1$, showing that it is of significance. FDI correlates to economic growth in certain sectors, so it would be expected that the government would increase spending (with respect to GDP) in the health sectors. GDP per capita was in decline from the decade 1990-2000, but from my regression data, it has been steadily (slowly) rising with increases in FDI inflows.

5.0 CONCLUSION

In summary, it can be concluded that trade (% of GDP), GDP per capita, health spending and the mortality rate are all good determinants of FDI inflows in Sub-Saharan countries. The results of this paper show that the death rate and the trade openness variables statistically have the largest impact on determining FDI inflows. In many instances, the labor force in these countries works in manual/hard labor. In countries such as the Central African Republic or the Republic of the Congo, the labor force mostly works in agriculture, mining or on plantations. With poor

provisions for safety and insufficient regulations, the death toll may be more easily explained (with respect to FDI inflows). Contrary to some studies about Sub-Saharan countries, this paper finds that there is in fact a positive correlation with FDI inflows and GDP per capita. Many articles had found that as FDI increases, GDP per capita decreases. This can be due to the fact that with increased levels of FDI, the government becomes less accountable to their own population, but more accountable to the corporations that fund them the money. However, this is a study for more recent years and it can be stated that because there is more political awareness and transparency, populations are no longer left in the dark as they once were. The results of this paper suggest that education expenditure is not a good determinant of FDI. This could be because the industries in these African countries are built around cheap labor, abundant resources and a lack of regulation. Education can't come into the mix because it would create specialized labor when in reality the most useful forms of labor come in sectors such as manufacturing, farming and mining. This can explain why increases in education spending in Sub-Saharan countries negatively correlates with FDI inflows.

From the data and from the empirical regression, I can conclude that portions of my hypothesis were incorrect. From the modern period I analyzed, I can state that FDI levels have increased levels of economic development in sub-Saharan Africa. Even though high levels of FDI haven't increased development levels to the degree I would have expected, it did have positive effects that were not negligible by any means. The determinants that lead to increased levels of FDI include increased levels of GDP/capita, increased health spending, decreased education spending, increased trade openness and (even though this cannot be controlled) a higher death rate (which seems to be extremely positively correlated to increased inflows of FDI).

6.0 POLICY RECOMMENDATIONS

From analyzing the data I recommend that sub-Saharan countries (or at least the eighteen included in this study) should promote domestic trade liberalization. Modern, westernized corporations have had their time to become efficient through natural processes of competition. In this environment, efficient and even more competitive firms are established-and this is what we can see in many regions of the world (especially in North America and Europe). However, sub-Saharan African countries have not yet been allowed to go through these natural processes of firms becoming efficient. Certainly not efficient enough to compete against the already established firms around the globe.

For firms in the sub-Saharan region to become more efficient and for those firms not to be run out of business by foreign companies, domestic trade liberalization must be a policy being pushed by local governments. One way these countries could accomplish this is if they established a free trade zone, similar to that of the EU. The EU has delimited tariffs and has made the business of trade streamlined. Sub-Saharan countries should look to make trade a top priority as it will promote the healthy efficiencies within their businesses and will increase their relative competitiveness. Citing economies of scale, this should help to alleviate the extremely poor business creation in the region.

Based on the data collected, local governments should pursue policies of health and infrastructure spending. Spending on healthcare is, in my findings, a determinant of FDI inflows to a specific country. If policies were pursued that included more investment in the local populations, FDI should increase and thus development should ensue. This is the same mechanisms as spending on infrastructure and local development. Investing in the local populations in terms of the infrastructure and public goods they use will ultimately make FDI increase. Setting up operations will become more viable and profitable if more domestic

government investment takes place. By following these policy recommendations, sub-Saharan African nations can become more globally competitive by increasing their amounts of FDI, which we have seen will lead to increased levels of development.

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