# Foreign Direct Investments and Economic Growth in Sub-Saharan African Countries: A Comparative Analysis between Landlocked Countries and Countries Having Access to the Sea

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# Abstract

Institutional reforms implemented since the beginning of the Nineties resulted in a substantial increase in Foreign Direct Investments (FDI) inflow into Sub-Saharan Africa. The present study uses data on 32 countries to evaluate the impact of FDI on economic growth through panel data regressions for the period 1988-2008. The study captures the incidence of commercial openness through a comparison between the landlocked countries and those having access to the sea. The results show that FDI have a positive and significant effect on economic growth in countries that have access to the sea whereas for the landlocked countries, the results are not significant. It is therefore recommended that African countries continue to implement policies favorable to the attraction of FDI. Landlocked countries should lay a particular emphasis on the construction of infrastructures (roads, railways, airports, and phone) that facilitate the flow of goods towards the different ports for shipment to countries where their goods are more demanded.

Keywords: foreign direct investments, economic growth, landlocked countries, Sub-Saharan Africa

# 1. Introduction

The lack of resources necessary to the financing of investments constitutes one of the obstacles to the economic development of the African continent. The first strategies of the leaders focused on development aid and the public debt. However, numerous studies show that development aid did not have the awaited impact on the economic growth and development of these countries. The debt crisis of the beginning of the 80s forced many States to carry out successive rescheduling of the debt which by increasing the interest paid contributed to the deterioration of their balance of payments. Strategies attracting foreign direct investment (FDI) would be indispensable to raise the rate of investment in Africa. This is why one of the challenges of the New Partnership for African Development (NEPAD) of the African union is based on the mobilization of financial resources to realize massive investments and catch up with the development gap of the continent in relation to the other regions of the world. To achieve this, NEPAD intends to wipe out the perception of Africa by the investors as being a "high risk" continent because of the insecurity of property rights and the insufficiencies of the law. Several studies show that the impact of the FDIs on growth and well-being in Sub-Saharan Africa remains mitigated. Cockcroft and Riddel (1991) show that during the 80s, the contribution of FDI to production remained small in many African countries. Other works conclude that FDIs only brought a modest contribution in terms of creation of jobs in Africa (Nzomo, 1971) or in terms of transfer of expertise in management (Kim, 1985). It is necessary to note however that these studies are old and were carried out at a time when the economic policies in Africa were characterized by strong distortions. Some more recent works show that the positive impact of multinationals on development depends on the conditions in which the investments are done. The maximization of the gains of FDIs in a country requires macroeconomic stability, international trade strategies that encourage exports, a liberal economic policy encouraging competition and the setting up of strategies that encourage the inflow of FDIs (Pigato, 2000). For investments to be more efficient, it is necessary that more effective communication networks and infrastructures are put in place to enable industries to achieve economies of scale and minimize costs, and hence increase the contribution of FDIs to development (Moran, 1999). It is in this light that since the beginning of the 90s, reforms are put in place to attract FDIs toward the African continent (CNUCED; 1999). The combined effects of this reform, the actions of NEPAD and the irreversible process of globalization, encouraged the growth of FDI inflow to this continent during the last decades. The volume of FDI toward Sub-Saharan Africa doubled between the period 1982-1989 and the period 1990-1995 (Bosworth and Collins 1995). According to the statistics of the World Development Indicators of the World Bank and from IMF (2011) report, the inflow of FDI toward the countries retained in the present survey went from 4818,3 million US dollars in 2000 to 8935,1 million US dollars in 2005 and reached a record level worth 25787,4 million dollars in 2009. The objective of this study is to appreciate the impact of FDI on the economic growth of Sub-Saharan African countries. How do FDIs affect the indicators of growth in these countries? Does the impact of FDI on the economic growth in Sub-Saharan Africa vary depending on whether the countries are landlocked or that they have access to the sea? The present study on 32 Sub-Saharan African countries appreciates the impact of FDIs on economic growth through the use of panel data regressions for the period 1988-2008. It makes a comparative analysis between the results of landlocked countries and those of the countries having access to the sea. Section 2 gives a state of the literature on the relationship between FDIs and economic growth. Section 3 presents the methodology used whereas the results of the study are presented in section 4. The last section presents the findings and recommendations.

#### 2. Literature Review

The literature review includes the theoretical aspects as well as the empirical ones.

## 2.1 Review of Theoretical Works

It is dedicated to a brief presentation of the evolution of economic growth models. Indeed, the models of neoclassic growth of Solow (1956), Swan (1956) as well as the models of endogenous growth, developed by Romer (1986) and Lucas (1988) present themselves as the theoretical setting permitting to study the relation between FDI, development of physical capital, development of human capital and economic growth. The model of Solow and Swan puts in place a neoclassical shape of the production function that postulates that:

- the returns are decreasing in relation to every factor of production;
- the returns to scale are constants;
- the elasticity of substitution between factors of production is positive and continuous;
- by hypothesis, the rate of savings is constant.

The endogenous growth model is constructed from a certain number of criticisms addressed to the neoclassical growth model of Solow and Swan. On the basis of these criticisms, the first steps towards the theory of endogenous growth that makes the following assumptions have been set:

- the endogenous growth model considers technical progress as an endogenous factor of growth;
- in the models of endogenous growth, the factors of production present positive externalities;

- economic growth is the consequence of the accumulation of physical capital. Therefore, the increasing returns constitute its foundation;

- the supporters of the endogenous growth show that the investments achieved by the state in the infrastructures facilitate the circulation of information, people and goods (Barro, 1990) and improve the productivity of firms;

- economic growth also depends on innovation that results from research and development developed by Romer (1990) who underlines the fact that growth is linked to the increases and the diversification of inputs.

By introducing the accumulation of human capital in the growth function, Lucas (1988) distinguishes the voluntary capital that corresponds to the accumulation of the knowledge "schooling" from involuntary capital "learning by doing". He shows that the improvement of the level of training of every individual increases the stock of human capital of the country and improves the productivity of the economy. Several researchers participated in the development of the endogenous growth model. The complementarity of the different approaches led to the construction of a more complete model of endogenous growth. By introducing a flow of expenses G, which is considered a pure public good as a factor of production, Romer (1990) admits that the production function for every firm i is:

$$Y_i = AK_i^{\alpha} N_i^{1-\alpha} G^{1-\alpha}$$
(1)

With Yi, Ki and Ni being respectively output, the stock of private capital and the labour of the ith enterprise, G the spending of the state in infrastructures and A the level of technological advancement assumed to be constant in time. While supposing that the enterprises are identical, the social production function is written as follows:

$$Y = AK^{\alpha} N^{1-\alpha} G^{1-\alpha}$$
<sup>(2)</sup>

The private factors of production K and N have constant returns. The public expenditure is constituted of the final good, with  $\tau$  the fraction of the final product absorbed by the state. While supposing that the households dedicate a part of their income to the consumption of goods, the dynamics of accumulation of capital takes the form:

$$\dot{K} = s(1 - \tau)Y - \delta K \tag{3}$$

Besides, the social production function is determined by replacing G with  $\tau Y$ :  $Y = AK^{\alpha}N^{1-\alpha}(\tau Y)^{1-\alpha}$ , which yields the function:

$$Y = \tau^{\frac{1-\alpha}{\alpha}} A^{\frac{1}{\alpha}} N^{\frac{1-\alpha}{\alpha}} K$$
<sup>(4)</sup>

Given that A, N and  $\tau$  are constant, we obtain the AK model. In the absence of demographic growth, equations (3) and (4) permit to express the growth rate of the stock of capital:

$$gk = \frac{K}{K} = s(1-\tau)\frac{Y}{K} - \delta = s(1-\tau)\tau^{\frac{1-\alpha}{\alpha}}A^{\frac{1}{\alpha}}N^{\frac{1-\alpha}{\alpha}} - \delta$$
<sup>(5)</sup>

Since this rate is constant, growth is qualified as self-sustained (Schubert, 2000). The introduction of endogenous technical progress in the canonical models of growth is made by Romer (1990) and Aghion and Howitt (1992). Whereas Aghion and Howitt (1992) hold that new innovations drive old ones putting the economy in a process of "creative destruction", Romer (1990) holds that while accumulating, the innovations by their diversity constitute a source of wealth for the economy. His function of accumulation of technological capital is written as follows:

$$A = \rho N_A A \tag{6}$$

With N<sub>A</sub> being the number of researchers,  $\rho > 0$  a parameter of the efficiency of research, and A, the technological capital. Romer supposes that the growth rate of the technological capital is a linear function of the number of researchers. The researcher's marginal productivity  $\rho A$  increases with an increase in the existing capital. The hypothesis of the linearity in A of the function of technological capital leads to self-sustained growth (Schubert, 2000). While supposing that the proportion of researchers within the population is constant, we obtain:

$$N_A = \frac{\alpha}{1+\alpha} N$$
 and  $N_Y = \frac{1}{1+\alpha} N$ 

With  $N_A$  the quantity of the factor labor used. While supposing that the population is constant and economic growth takes place at an endogenous or constant rate, we have:

$$g = \frac{A}{A} = \frac{Y}{Y} = \rho \frac{\alpha}{1 - \alpha} N \tag{7}$$

Since the activity of research remains determining for growth, the rate g increases with the efficiency of research. One of the more recent versions of the endogenous growth model is that of Borenztein et al. (1995) that goes from a Cobb–Douglass type production function:

$$Y_{t} = AH_{t} \alpha K_{t}^{1-\alpha}$$
(8)

With A the exogenous technology factor, H the human capital, and K the physical capital. Let N be the total number of capital goods produced by two types of firms (foreign firms and the domestic firms) in the economy, n stands for the goods produced by the domestic firms and n \* stands for those of the foreign firms.

$$N = n + n * \tag{9}$$

Suppose that the cost of technological adaptation of the domestic firms F has a negative correlation with the number of foreign businesses (n \*) operating in the host country. This is why Borensztein et al admit that FDI is the channel by which technological progress is transmitted. The functional form retained for F is:

$$F = F(n^{\bullet}, N / N^{\bullet}), \text{ where } \frac{\partial F}{\partial n^{\bullet}} < 0 \text{ and } \frac{\partial F}{\partial (N / N^{\bullet})} < 0$$
 (10)

To finalize the model, the authors suppose that individuals maximize the following standard function of inter temporal utility:

$$\bigcup_{t} = \int_{t}^{\infty} \frac{C_{s}}{1-\sigma}^{1-\sigma} e^{-\rho(s-t)} ds$$
(11)

Where C represents the number of units consumed of the final good Y. Given that the rate of return is (r), the optimal consumption path is given by the following condition:

$$\frac{C_{t}}{C_{t}} = \frac{1}{\sigma} (r - \rho)$$
(12)

One can verify easily that the growth rate of the consumption must, in a steady state, equal the rate of growth of output g.

$$g = \frac{1}{\sigma} \left[ \psi F \left( n^{\bullet}, N / N^{\bullet} \right)^{-1} H - \rho \right]$$
(13)

This equation shows that FDI, measured by n \* reduces the cost of introduction of new varieties of capital goods, thus increasing the rate of introduction of these goods. Besides, Borenztein et al. (1995) admit that a positive correlation exists between the level of human development and the impact of FDI on economic growth. For an empirical verification, they estimated the following model:

$$g = c_{0} + c_{1}FDI + c_{2}FDIxH + c_{3}H + c_{4}Y_{0} + c_{5}X$$
(14)

This model, like many others has been the subject of many empirical tests.

## 2.2 Empirical Literature Review

FDI encourages the transfer of technology toward the host countries (Duming, 1993; Catin et al. 2002), promotes the development of the human capital (Toufik and Bouoiyour 2002), improves the rate of investment (Bosworth and Collins 1999) and commercial openness (Olakounlé, 2004). By transition, FDIs have a positive effect on the economic growth of the host countries. Numerous studies have investigated the impact of FDI flows on economic growth. Most of these studies were carried out in Asian and Latin-American countries given their economic performance and their strong capacity to attract foreign funds. Berthélémy and Démurger (2000) are interested in the impact of FDIs on the Chinese economy. They find a positive impact of FDIs on growth. The results of the study of Fung et al. (2002) on the same country show that FDI constitutes an important element of economic growth in China and confirm a positive correlation between foreign business investments and the GDP, both at the national and provincial levels. De Mello (1996), is interested in five countries of Latin America (Brazil, Chile, Colombia, Mexico, Venezuela). His study that uses time series reveals the positive impact of FDIs on economic growth. A more recent study carried out by Abdur and Mavrotes (2003) is interested in the direction of causality between FDI and growth in three countries which are part of the highest recipients of FDIs: Chile, Malaysia and Thailand. The comparative study covers the period (1969-2000) and uses the Toda-Yamamoto causality test. For Chile, FDI depends on the economic growth rate and not the reverse. For Malaysia and Thailand, the relation is bi-directional between economic growth and FDI. The cross sectional analysis of Blomström et al. (1994) shows a positive impact of FDI on the economic growth of developing countries having a relatively high income level. These results mean that the recipient countries should have a minimum level of development to benefit from the advantages of FDIs. Knôdler and Hauser (2001) are interested in the impact of FDI on economic growth in the Western regions of Germany. The results of the study show a positive and statistically significant correlation between economic growth and the growth of FDI. The regions benefitting from the intense activities of firms financed by FDIs have better prospects of growth and development. The study of Borenztein et al. (1995) follows the same logic. It focuses on 69 developing countries and covers two decades 1970-1979 and 1980-1989. Several sets of regressions are done. The results show that FDI triggers a side effect on human capital to contribute economic growth. The beneficial effects of FDIs on the global productivity of factors are only discerned for the countries having a minimum level of human capital. A similar study has been carried out by Nauro and Kinoshita (2002). It focuses on 25 countries of Central and Eastern Europe. These authors arrived at the same findings. The merit of these studies is to have tested the theoretical relationship between FDI, in combination with human capital and economic growth. The positive impact of FDI on growth does not always make unanimity. Some authors wonder about the interpretation made on the correlation between FDI and growth. Rodrik (1999) admits that the correlation is due to an inverse causality, insofar as FDIs move toward the most productive countries. Nair-Reichert and Weinhold (2001) underline that cross sectional analysis make unrealistic hypotheses on the homogeneity of the sample on the one hand and on

the inability of the studies to test the causality of the FDI-growth relation on the other hand. As for Xiaoying and Xiaming (2005), they note that many authors do not carry out endogeneity tests between FDI and growth rate, given the interdependence between the two variables. That is why in their study which focuses on 84 countries on the period (1970-1999), they correct the limits that characterize the previous works. They test the endogeneity between FDI and growth, which allows them to choose a suitable estimation method. They introduce interactions between human capital, infrastructures and the technological gap to appreciate if FDI can affect growth in an isolated manner or through these interactions. Their results show that FDIs, not only affect growth directly, but also through these interactions. This methodology seemed pertinent to us and has been applied in the present study.

## 3. Method

The survey is about 32 countries of Sub-Saharan Africa for the period (1986-2006). To appreciate the impact of FDI on growth, regressions an carried out following the methodology of Xiaoying and Xiaming (2005) for its relevance to this study.

# 3.1 Specification of the Economic Growth Equation

We use an endogenous growth function including a technical progress factor and a human capital factor. It is specified as follows:

$$TCPIB_{i,t} = \alpha_i + \beta_i X_{i,t} + \xi_{i,t}$$
(15)

TCPIB i,t is the growth rate of real GDP per capita of country i during the year t;

If  $\alpha_i \in \mathbf{R}$ ,  $\beta_i = (b_{1i}, b_{2i}, \dots, b_{ki})'$  a vector of the parameters.

and  $X_{i,t} = (x_{1,i}, x_{2,i}, \dots, x_{k,i})'$ , the vector of the following k explanatory variables.

LOPPOP i,t: population logarithm of the country i during the year t;

IDO/PIB i,t: rate of domestic investment of the country i during the year t;

TSP i, t: rate of primary schooling of the country i during the year t which is a proxy of the human capital factor.

FDI/PIB i,t: ratio of FDI to GDP of country i during the year t;

INFLATION i,t: rate of inflation of the country i during the year t;

OUVERTCOM i,t: rate of commercial openness of the country i during the year t;

EXCHANGE i,t: exchange rate in relation to the US dollar of country i during the year t;

CONSG/PIB i,t: ratio of government consumption of country i during the year t.

# 3.2 Regression Techniques and Data

Panel data regressions are used in the present study which covers the period 1988-2008. One of the advantages of panel data regressions is that they permit to control three types of factors: those that vary between the individuals, but do not vary with time, those that could cause an omission bias if one did not take them into account, those that are unobservable or non available and cannot be included in the regression. The information is collected in the World Bank database with an interval of 2 years for each of the 32 countries. This permits us to have 11 observations by country and 352 observations in all. The regressions were based on three groups of countries: the first is made up of the 32 countries. For every group of countries, we estimated the model using the ordinary least squares method under the hypothesis of a uniform behavior of the countries. The hypothesis of a homogeneous panel or a model with common effects is made. The test of Fisher shows that the model is globally significant for every group of country.

## 4. Results

The tables below present the main results of the study. In table 1 are presented the results of the set of the 32 countries of the sample, one perceives that FDIs have a positive impact on the economic growth of Sub-Saharan African countries. The coefficient of the variable FDI is positive and significant at 1% level. The case is the same for the variable domestic investments. As for the variable commercial opening, it is positive and significant at 10% level. The other variables like the rate of primary schooling, proxy of human capital, the rate of inflation and the exchange rate have positive coefficients, but are

#### insignificant.

Table 1. Results of the regressions on the entire set of Sub-Saharan African countries

Hausman Specifications test Test: Ho: difference in coefficients not systematic  $chi2(7) = (b-B)'[(V_b-V_B)^(-1)](b-B)= 16.28$ Prob>chi2 = 0.0226 Results of the Random Effects Model

Dependent variable: TCPIB			
Explanatory variables	Coefficients	Standard errors	p-value (p>z)
LOGPOP	0743006	.2717954	0.785
IDO/PIB	.1815166	.0448992	0.000***
FDI/PIB	.278394	.075177	0.000***
TSP	.0087858	.0113582	0.439
INFLATION	.027408	.0849738	0.747
OUVERTCOM	.3272382	.1263745	0.010*
EXCHANGE	.0000705	.000146	0.629
CONSG/PIB	0459629	.0485829	0.344
Const	-2.639712	4.912206	0.591
Number of $obs = 352$			
Number of groups $= 32$			
Wald $chi2(8) = 95.40$			
Prob > chi2 = 0.0000			

Notes: \*\*\* Significance at 1%; \* Significance at 10%.

Table 2 presents the results of the countries having access to the sea whereas those related to the landlocked countries are contained in table 3.

Table 2. Regression results for the countries having access to the sea

Hausman Specifications test Test: Ho: difference in coefficients not systematic  $chi2(7) = (b-B)^{\circ}[(V_b-V_B)^{-}(-1)](b-B) = 20.05$ Prob>chi2 = 0.0055 (V\_b-V\_B is not positive definite) Results of the Random Effects Model

Dependent variable: TCPIB				
Explanatory variables	Coefficients	Standard errors	p-value (p>z)	
LOGPOP	1172548	.3142106	0.709	
IDO/PIB	.1935294	.0538705	0.000***	
FDI/PIB	.3772243	.090685	0.000***	
TSP	0009287	.0160499	0.954	
INFLATION	.0956364	.1094751	0.382	
OUVERTCOM	.1979291	.1312057	0.131	
EXCHANGE	.0000485	.0001541	0.753	
CONSG/PIB	0620299	.0565459	0.273	
Const	-1.518463	5.89763	0.797	
Number of obs =231				
Number of groups $= 21$				
Wald chi2(8) = 80.93				
Prob > chi2 = 0.0000				

Note: \*\*\* Significance at 1%.

For every group of countries, the results of the Hausman test led us to choose the random effects model. The fact that a random effects model is chosen to the detriment of a fixed effects model shows the simultaneous influence of the global features of the countries of every group and specific features to each of the countries in the process of economic growth.

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Hausman Specifications test				
Test: Ho: difference in coefficients not	t systematic			
$chi2(7) = (b-B)'[(V_b-V_B)^{-1}](b-B)$	3) = 19.86			
Prob>chi2 = 0.0059				
(V_b-V_B is not positive definite)				
Results of the Random Effects Model				
Dependent variable: TCPIB				
Explanatory variables	Coefficients	Standard errors	p-value (p>z)	
LOGPOP	.099409	.6922974	0.886	
IDO/PIB	.1961885	.0766049	0.010*	
FDI/PIB	.0208515	.1245883	0.867	
TSP	0022998	.0184667	0.901	
INFLATION	.0157616	.1118936	0.888	
OUVERTCOM	5.294494	.6246703	0.000***	
EXCHANGE	0003806	.0005346	0.477	
CONSG/PIB	1587146	.1003833	0.114	
Const	-4.036639	11.45994	0.725	
Number of obs =121				
Number of groups $= 11$				
Wald chi2(8) = 91.33				
Prob > chi2 = 0.0000				

Table 3. Regression results for landlocked countries

Notes: \*\*\* Significance at 1%; \* Significance at 10%.

As concerns global features, the different tables results indicate that the panel data model is globally significant at 1% level (Prob > chi2 = 0.0000) for the three groups of countries. With regard to the quality of the fitness, it is 22,5% for the set of the 32 countries, 28% for the countries having access to the sea and better again of 43,65% for the landlocked countries. To this effect, it is fairly acceptable. It means that other variables exist, different from those used in the models that explain the rate of economic growth. These variables could be for example the natural resources, the banking intermediation rate or the privatization of the public corporations.

The results of the Dicker Fuller stationnarity tests in table 4 below show that all utilized variables are stationary of order one.

Variable	ADF	Probability ADF	Order of integration	Decision of the stationarity level
TCPIB	92.3103	0.0118 (**)	I(0)	Yes
IDO/PIB	114.439	0.0001 (***)	I(0)	Yes
OUVERTCOM	119.524	0.0000 (***)	I(0)	Yes
FDI/PIB	153.948	0.00000 (***)	I(1)	Yes
TSP	127.442	0.0000 (***)	I(0)	Yes
INFLATION	87.8793	0.0255 (**)	I(2)	Yes
EXCHANGE	100.588	0.0024 (***)	I(0)	Yes
CONSG/PIB	117.472	0.0001 (***)	I(0)	Yes
LPOP	80.7833	0.0766 (*)	I(0)	Yes

Table 4. Unit root test: Augmented Dickey - Fuller test (ADF)

Notes: \* \* \* Significance at 1%; \* \* Significance at 5%; \* Significance at 10%.

When one makes a comparison between the results of the landlocked countries and those of the countries having access to the sea, one perceives that the coefficient of the variable FDI is positive for the two groups of countries, but significant only for the countries having access to the sea. The case is the same for the variable domestic investments. One can explain these results by the fact that the landlocked countries attract less FDI compared to the countries having access to the sea.

The specificities of the countries in the explanation of growth are appreciated by the sigma\_u and the R2 between. For every group of countries, the sigma\_u is greater than 0. It is even greater than 1 for the landlocked countries. This result shows that the factors not included in the model and having an impact on economic growth are related to the specificities of the countries of the sample. The R2 between informs us on the contributions of the variable effects of each country. It is equal to 58.66%; 63.56% and of 49.18% respectively for the set of the countries, for those having access to the sea and for the landlocked countries. This means that the different

variables take values that differ from one country to the other. This can be seen in the variation in the growth rate that is positive in some countries and negative in others, on the variation of other variables like the rate of schooling, commercial openness and the domestic investment rate.

## 5. Discussion

The objective of the present study was to evaluate the effects of FDIs economic growth in Sub-Saharan Africa through panel data regressions with a comparison between landlocked countries and those having access to the sea. The results show the existence of a positive impact of FDIs on economic growth on the whole, but with a comparative advantage for the countries having access to the sea in relation to the landlocked countries. This is why the recommendations are about measures capable of encouraging the influx of FDIs on the one hand in the countries of this part of the continent and on the importance for the landlocked countries to invest in the development of the infrastructure on the other hand.

## 5.1 The Recommendations in Favor of the Attractiveness to FDI

The data in Table 5 show dynamism of countries in our sample in terms of FDI attraction in the past two decades. Flows increased from U.S. \$ 258.3 million in 1995 to 11 400.15 million dollars in 2003. There has been a 21.6% decline between 2003 and 2005. This decline in flows is primarily dependent to the situation of Angola, Chad and Swaziland which registered negative flows in 2005. Countries that were more attractive are Angola, Nigeria, Republic of Congo, and Equatorial Guinea. These countries are not only oil producers, but are also opened to sea. Landlocked countries are generally less attractive except those that exploit oil and minerals such as Chad and Niger in the years 2006 and 2009.

Countries	1995	1997	2000	2003	2005	2008	2009
Angola	472427	411660	878620	3504701	-1303836	1678971	2205298
Benin	13329	27015	59736	44731	53043	169834	134285
Botswana	70413	100109	57176	770536	492380	902413	824081
Burkina Faso	9816	9765	23219	30831	31967	152465	105204
Burundi	1981	0.1	11683	4.618	584	3833	348.7
Cameroon	7292.4	78335.6	158801.5	336267.8	234006.5	-24198	668329.4
Central A. R.	6200.5	1497.4	842.7	22195.4	32419	117119	42250.5
Tchad	32611.5	44293.9	115172.4	712663.4	-99342.5	233583.8	461808
Congo, RDC	-22350	-44350	72000	391300	-	1726800	663800
Congo, Rep.	125019	79171.5	165904.4	323124.3	513585.5	2483223.7	2083496
Equatorial G.	126924	53451.5	154499.5	689779.7	769146	-793872.3	1636219.6
Gabon	-314523.6	-311296	-42626.4	157986.8	242335	209019.5	32826
Ethiopia	14140	288490	134640	465000	265111.6	108537.5	221459.5
Ghana	106500	81800	165900	136751	144970	2714916.3	1423906.8
Guinea	769	17301	9942	78966	105000	381880	49820
Kenya	42289	62096.8	110904.5	81738	21211.6	95585.6	116257.6
Madagascar	9710	14005.4	82952.5	12874	85444	1169359.7	1066058.4
Malawi	5643	14868.7	25999.9	83151.2	38143.3	175774.7	75817.6
Mali	111429	62986	82439.5	132260.7	188138.3	131677.7	718457.9
Mauritius	18692.8	55277.8	265641.2	62630.665	41776.996	377724.7	256680
Mozambique	45000	64400	139200	336698.8	107853.3	591619.8	892502.8
Niger	7188	18171	8437	14912	43976	340427	815339.2
Nigeria	1079271	1539445	1140137.6	2005390	4982533.9	8196606.6	8554840
Rwanda	2212.2	2598.5	8319	4655.6	8030	103350	118671
Senegal	31673.9	176017.4	62937.4	52494.8	44588.4	397632.6	331079
Seychelles	45884.3	53398.6	24326.9	58425.5	85879.6	129454.5	118480.8
Tanzania	119936.6	157885	463400.8	364258.8	935520	400047	414544.6
Swaziland	51756	-15313.9	90658	-60903.8	-45850.3	105729.3	65705.8
Togo	26168569	20999903	41921341	33733636	76992328	23883150	48531693
Uganda	121200	175000	160700	202192.5	379808.3	728860.9	841570.8
Zambia	97000	207400	121700	347000	356940	938600	694800
Zimbabwe	117700	135100	23200	3800	102800	51600	105000
Total	2583308	3581583	4818388.6	11400153.5	8935158.2	24022462.4	25787475

Table 5. Evolution FI	DI inflows in the 32	countries of the surve	ey (in 10 <sup>3</sup> \$ US)
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Source: World Development indicators 2011.

This classification based only on the absolute flux and that does not take into account the size of the economy is less significant. The classification of FDI relative to GDP (table 6) shows that in 2006 the attraction of FDI is still dominated by the oil exporting countries. Republic of Congo and Chad are leaders with each FDI / GDP ratio above 10%. The third place occupied by the Democratic Republic of Congo is explained by FDI flows for the exploitation of minerals held by this huge country. The same explanation applies to the Niger in 2009, which ranks second after the Republic of Congo with a ratio of 15.51%.

1990-1999 (annual mean)		2006		2009	
Countries	%	Countries	%	Countries	%
Equatorial Guinea	32.07	Congo	12.7	Congo	21.71
Angola	8.01	Chad	11.11	Niger	15.51
Seychelles	6.81	Congo (RDC)	6.55	Seychelles	14.08
Swaziland	5.27	Equatorial Guinea	9	Equatorial Guinea	13.37
Nigeria	4.07	Nigéria	6.11	Madagascar	12.55
Zambia	3.48	Togo	6.07	Mozambique	9.22
Mozambique	2.69	Zambia	4.4	Mali	8.01
Ouganda	1.75	Angola	4.3	Botswana	7.14
Cote d'Ivoire	1.52	Seychelles	4.24	Chad	6.51
Ghana	1.28	Tanzania	4.22	RDC	5.92
Zimbabwe	1.28	Mozambique	4.13	Ghana	5.48
Tanzania	1.26	Ouganda	2.96	Ouganda	5.32
Malawi	1.25	Swaziland	2.57	Zambia	5.42
Gabon	1.25	Malawi	2.31	Nigeria	5.07
Mali	1.08	Ghana	1.98	Cameroon	3.01
Senegal	1.07	Guinea	1.98	Mauritius	2.9
Togo	0.99	Senegal	1.4	Senegal	2.59
Benin	0.87	Mali	1.21	Rwanda	2.25
Chad	0.86	Madagascar	1.21	Swaziland	2.22
Mauritius	0.85	Côte d'Ivoire	1.12	Central A. R.	2.13
Éthiopia	0.78	Benin	1.1	Benin	2.04
Guinea	0.69	Ethiopia	1.03	Tanzania	1.94
Madagascar	0.61	Kenya	0.67	Zimbabwe	1.79
Burkina F.	0.56	Botswana	0.6	Côte d'Ivoire	1.65
Niger	0.41	Niger	0.59	Malawi	1.6
Botswana	0.25	Mauritius	0.58	Togo	1.53
Kenya	0.2	Burkina F.	0.4	Angola	1.3
Congo	0.19	Burundi	0.4	Burkina F.	1.26
Central A. R.	0.16	Central A. R.	0.23	Guinea	1.19
Cameroon	0.1	Zimbabwe	0.19	Ethiopia	0.69

Table 6. Evolution of FDI/GDP ratio in sub-Saharan African countries of our sample

Source: World Development indicators 2011.

It should be noted that for several decades, Western multinationals have monopolized FDI in Africa. They are mostly concentrated on the oil and mining sectors. This lack of diversification has significantly delayed the development of African countries. The graph below shows that China offers an opportunity to diversify FDI in Africa. Hope in the diversification of FDI in Africa comes from China as shown in the graph below.



Figure 1. Repartition of China's FDI in African countries in 2009

Source: FMI (2011)

It can indeed be noted that Chinese firms are involved in key development sectors such as construction, the financial sector and the manufacturing sector. If it is determined that African leaders should encourage foreign investors to direct their capital in several sectors of the economy, we must also recognize that many actions are to be implemented on the institutional and governance domain.

The regulatory framework of FDI in Sub-Saharan Africa is characterized on the political level by the democratization process which triggered in the beginning of the 90s. Although there has been relative stability in some of the States, others unfortunately witnessed civil wars (Liberia, Burundi, Rwanda, Central African Republic, Republic of Congo, Ivory Coast, etc). According to Singh and Jun (1995 and 1996), the socio-political instability is a complex phenomenon and constitutes a hindrance to the attraction of FDI. This is why the Sub-Saharan African countries should put in place strong democratic institutions. The progressive withdrawal of the state from the productive sector resulted in the privatization of the public corporations in many countries. This process that covers the enterprises of all sectors of the economy spread itself to many countries of Sub-Saharan Africa. Sader (1995), Basu and Srinivasan (2002), show that the efforts of privatization attract FDI through the direct sales of the enterprises. This process should continue to permit to the local enterprises to benefit from the know-how of foreign investors. With regard to the rates of schooling, they are considered as proxy of the qualification of the manpower. Education is regarded as a means to prepare and to adjust to the permanent changes of the environment and working conditions (Word Bank, 1995). In Sub-Saharan Africa, if the rates of schooling are relatively high in the primary level, they are low in the secondary. This explains the low level of qualification of the manpower. It is why the Sub-Saharan African countries should center growth in middle and long term on education, through the construction of infrastructures, the adaptation of the teaching syllabus to international norms and the recruitment of more qualified teachers. Concerning the gains in efficiency, many countries concluded bilateral treaties and signed multilateral agreements with international organizations. The harmonizations of the investment codes, as well as measures to encourage investments have intensified. Many countries of East and South Africa adhered to the Cross Border Initiative (CBI) while adopting a common code of facilitation of investments. Some similar protocols were finalized in the other regions of Sub-Saharan Africa: Economic and Monetary Community of Central African States (EMCCAS); West African Economic and Monetary Union (WAEMU), and the Southern African Development Community (SADC). The ratification of the "OHADA" treaty (Organization for the harmonization of Business Law) by all States of the franc zone constitutes a hope for the reinforcement of integration. A study by Blomstrôm and Kokko (1997) in the countries of MERCOSUR shows that a well conducted integration stimulates FDI. For the Sub-Saharan African countries, to sign the agreements only is not sufficient, what is important is to apply them. In the countries of the EMCCAS for example, the notion of integration, free circulation of goods and people is still hindered by many factors like the selfishness of some leaders that results in acts of xenophobia, the insufficiency of the communication infrastructures between the countries, etc.

## 5.2 The Development of the Transportation Infrastructures

The state of the transportation infrastructures in Africa remains faltering. The road remains the most utilized means of transportation. However, its density is of 6.84 km for 100 km2 against 12 km for 100 km2 in Latin America and 18 km for 100 km2 in Asia. The length of the covered network is only of 24.56% of the total network against 64.1% for the north African sub-region. With regard to the African railway network, it was estimated at 89380 km in 2005 (Nations Unies, 2007), giving a weak density of 2,96km for 100 km2. In addition, the management of the network was characterized in many countries by a heavy bureaucracy and a weak profitability. It is necessary to add that many African countries as Burundi, Cape - Verde, Comoros, Gambia, Guinea Bissau, Equatorial Guinea, Niger, Central African Republic, Rwanda, Sevchelles, Somalia, Chad, etc were still unfortunately destitute of this means of transportation just before the year 2007. As to the maritime transportation, the 53 African countries counted 80 seaports in 2004. These ports are under equipped compared to those of the other developing countries. They are exposed to a certain number of problems of which those of pollution, erosion, insufficiency of measures of facilitation and technical capacities. Moreover, 80% of African ships are more than 15 years of age against a world average of 15%. These different problems compromise the African harbor productivity. The situation of the air transport is even worse. In 2004, Africa counted 117 international airports and 500 domestic airports that are characterized by a strong deterioration of the tracks due to the lack of maintenance, of the old facilities that do not correspond anymore to the international norms, of the insufficient safety measures and security. This poor nature of infrastructure that constitutes a hindrance to the circulation of the men and goods is not likely to attract the foreign investors. The situation of the landlocked countries is even more compromising. That is why these countries should put in place strategies of development of infrastructures. Numerous studies show the existence of a positive relation between FDI and infrastructures (Asiedu 2002). Finally, the Sub-Saharan African countries should make considerable efforts in the direction of improving the attractiveness of foreign direct investments in order to cover their deficit in funds. At the same time, strategies in favor of the development of the transportation infrastructures should be put in place. For these efforts to produce the expected results, the questions of governance that are relevant to all strategies should be in the center of the preoccupations of African leaders.

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