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# HOW EFFECTIVE ARE FISCAL INCENTIVES TO ATTRACT FDI TO SUB-SAHARAN AFRICA?

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## **Abstract**

*Given the role of foreign direct investment (FDI) in the development process, one of the most important challenges facing Africa is how to attract FDI. A number of attempts which have been made have been unsuccessful because of various factors that work against the business environment for FDI. Africa's image as a high-risk investment region has to be dispelled, as the flow of FDI is highly sensitive to economic and political risks. Fiscal incentives, the most popular instrument for attracting FDI in Africa, have failed to deliver the expected increase in FDI inflows. What is needed is political and macroeconomic stability at the national and regional levels, property rights protection and other investment-supporting regulations and improvements in infrastructure and service support systems.*

## **1. Introduction**

As early as the 1960s, Vernon and other economists recognized the importance of locational determinants in the foreign direct investment (FDI) decision making process, especially in the location of US firms in advanced developed countries (see Vernon 1966; Wells 1972). In the 1970s, however, attention was switched to the firm-specific characteristics of the investor, where attention was focused on the 'why' question; why firms choose to set up production facilities in a foreign location rather than exporting (see Caves 1982; 1996).

Since the 1970s, the emphasis on the ownership-advantages of firms has continued to drive academic debate and research on FDI, but recently there has been a renewed interest in the locational aspects of FDI, which complements the competitive ownership

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<sup>\*</sup> The author wish to thank participants at the IAABD 5<sup>th</sup> international conference in Atlanta in April 2004, Judith Tomkins and Prof. Zis for helpful comments on earlier drafts. The errors are all mine.

factors of firms and their modes of market entry (Dunning 1998). This approach takes into consideration “*the relationship between trade and FDI, and the economic structure and dynamic comparative advantage of regions and countries*” (ibid, p.46).

The rest of this paper is presented as follows. In section 2, we discuss the motives for undertaking FDI by multinational enterprises and for seeking FDI by less developed countries (LDCs). Section 3 analyses FDI performance and potential in sub-Saharan Africa (SSA). The incentive policies pursued by SSA to attract FDI are analysed for appropriateness in section 4 and section 5 discusses the data sources and variable definitions. The results of the analysis are presented in section 6, and section 7 summarises and concludes the paper.

## **2. The Motives for FDI**

The choice of location of FDI should depend on the motivation for undertaking the investment activity. To attract FDI and multinational enterprise (MNE) activities, different types of incentives are needed to attract the different modes of FDI which are: natural resource seeking, market seeking, efficiency seeking and strategic asset seeking FDI (see Dunning 1998, table 1; Caves 1982 and 1996).

For natural resource seeking FDI, according to Dunning (1998) and before him Caves (1996), the most important factors influencing location include the availability, costs and quality of natural resources and their development (i.e. processing and marketing); infrastructural development necessary for the exploitation of these resources and

availability of joint-venture partners. Investment incentives are also important in resource seeking FDI.

Dunning (1998) and Caves (1996) also stressed that the size and growth of domestic and regional markets, the availability and cost of skilled labour, quality of infrastructure and institutional competence, agglomeration economies and service support systems, and macroeconomic policies of the host government particularly influence market-seeking FDI.

In the case of efficiency-seeking FDI, these two authors, among many, believe that the most significant determining factors are mainly production cost-related, but most emphasis is placed on factors such as the skill and professional elements of labour, the competitiveness of related firms, the quality of local infrastructure and institutions, macroeconomic policies, and the relationship of all these with knowledge intensive FDI. Human resource development and the availability of specialised clusters, e.g. science and industrial parks, are also thought to be of increasing importance.

Finally, Dunning and Caves point out that strategic asset-seeking FDI is influenced more by factors such as the availability of knowledge-related assets (e.g. process and product technology, management expertise, etc) and markets and the geographical dispersion of such assets, institutional and other variables influencing access to such assets by foreign investors, the price and availability of synergistic assets to foreign firms, and access to different cultures, institutions and systems.

FDI is important to developing countries, especially sub-Saharan Africa (SSA), for several reasons that enhance development, other than supplementing domestic (savings and) investment. It enhances domestic innovation through the transfer of technology, leads to human capital development through the transfer of management skills and knowledge, provides market access, enhances productivity through the stimulation of competition in the domestic economy, and it reduces costs and improves economies of scale through the integration of the domestic economy with international economic activity.

Through these advantages, the multinational enterprise (MNE), the main vehicle of FDI, can positively shift a country's comparative advantage and, as a result, many SSA countries are now actively wooing MNE participation in their efforts at economic development. Policies designed to raise the level of FDI, have attempted to market the opportunities, raise the potential returns and reduce the obstacles and risks associated with FDI.

The level of economic activity of MNEs depends on their primary motivation for undertaking foreign activity. The investment behaviour of market-seeking firms, for example, depends more on the size and growth of the local or regional economy, than those primarily established to supply the global market.

### **3. SSA Inward FDI Performance and Potential.**

As already mentioned, FDI is actively sought by almost all SSA countries, because of the contributions that FDI can make to their economies. They have improved their investment climate, through major policy efforts, by liberalisation of their investment regulations, privatisation of state-owned enterprises and the offer of incentives to foreign investors. Unfortunately, the expected flow of FDI to SSA has been disappointing, partly as a result of the negative image of the continent as a whole.

In the early 1970s, Africa attracted a higher share of world FDI than Asia and Latin America, but by 2000, it was attracting nine times and almost six times less FDI respectively. This is summarised in United Nations Conference on Trade and Development (UNCTAD) (2001), showing that FDI inflows to Africa slumped in 2000, bringing down the continent's already low share of world FDI inflows to below 1%. In previous years, this figure had hardly exceeded 2%, and although in 2001, Africa's share rose again to 2.3% (see table 1), the share of Africa's FDI inflows in total inflows remains very low. Between 2000 and 2004, the continent received a little over an annual average of 2% as compared to 4.4% in the 1970s.

Knowledge of a country or region is crucial in the location decision of MNEs. Inadequate knowledge of a location, however, can cause investors to underestimate opportunities and overestimate risks, pushing such locations to the periphery of the location decision-making process. This could easily characterise many SSA countries.

UNCTAD in various publications have shown that market size and access to natural resources have been crucial determinants of FDI in SSA. This is not surprising, given that the SSA countries that have been able to attract any meaningful FDI have been those with large domestic markets and those that possess large amounts of natural and mineral resources (see for example UCTAD, 2002).

The relationship between market size, measured by GDP, and FDI inflows shows that in 1996-97, South Africa, followed by Nigeria and Cote d'Ivoire have the largest GDP and hence the largest inflows of FDI. At the other extreme, Niger and Burundi, with the lowest GDP, attract the lowest FDI flows (see World Bank, 1999). Further, for a sample of 29 SSA countries, the correlation coefficient between FDI flows and market size is almost perfect at 0.99.

In the case of natural resources, FDI inflows into SSA countries by sector show that 54% of FDI went to the primary sector (natural resources) in the period 1996-2000<sup>1</sup>. In 1996-97, correlation coefficient of the value of natural resources and FDI inflows stood at 0.94 for a sample of 29 SSA countries (World Bank, 1999; UNCTAD, 2002).

Apart from natural resources and market size, Morisset (2001)<sup>2</sup>, using FDI climate as the dependent variable, showed empirically that GDP growth rate and trade openness are

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<sup>1</sup> Traditionally, about 60% of FDI in Africa is allocated to oil and natural resources. According to Morisset (2001), SSA has large reserves of gold, diamonds and oil; half of the world's manganese and cobalt; one-third of bauxite and more than 80% of chromium and platinum. SSA countries are among the main exporters of sugar, cocoa and coffee.

<sup>2</sup> Morisset (2001), defines investment environment (or FDI climate) as  $FDI_i / (GDP_i * NR_i)$ , where FDI is the FDI inflow in country i, GDP is the gross domestic product and NR is the value of natural resources.

significant and positively related to the investment climate in SSA. Trade openness, being significant, confirms and supports the policy of trade liberalisation, now being pursued by the majority of SSA countries.

Countries that have been able to establish a stable macroeconomic and political environment for a period of time, have successfully implemented trade liberalisation and privatisation programmes and which have adopted international treaties relating to FDI, tend to attract FDI in areas other than natural resources and market access. Two SSA countries that have improved their investment environment are Mali and Mozambique. These countries have attracted more FDI than Cameroon and Kenya, which have larger local markets and a wide range of abundant natural resources (ibid).

How have SSA countries gone about creating this investment environment? Many have attempted to use incentives as a means of attracting FDI. This issue forms the basis of the next section which attempts to analyse the appropriateness of the incentives offered given the type (and mode) of FDI normally attracted by these countries.

#### **4. Fiscal Incentives for FDI: How Appropriate?**

There are two main perspectives on fiscal incentives. First, supporters (e.g. Bora, 2002; Blomstrom and Kokko, 2003) argue that, under certain conditions, they increase investment, create jobs and other socio-economic benefits. Second, opponents (e.g. Halvorsen, 1995; Wilson, 1996; Osman, 2000; Wells et al, 2001) believe that fiscal incentives may not be the first-best mechanism for attracting FDI and the costs of

incentives to attract FDI outweigh the benefits. They believe that incentives may exacerbate problems like governance and corruption and it would be better to improve the local infrastructure and stabilise the macro-economy.

Many LDCs, including SSA countries, have provided investment incentives to entice foreign MNEs to locate in their economies but have achieved little success in generating the expected investment flows. This experience over a number of years suggests that fiscal incentives have not been effective in countering factors that work against locating in the SSA region, such as poor physical (roads, transport and communication) and institutional infrastructures and macroeconomic instability.

LDCs' governments use several types of fiscal incentives that impact on the effective tax rates and the location decisions of MNEs. Much focus has been put on instruments that are connected to corporation income tax, such as *tax holidays* and *tax allowances*, instruments that are only helpful to profitable companies. Custom duties and local indirect tax exemptions also exist in many countries. Grants are used mainly in advanced industrial countries because they are too expensive for, and hence rarely used by, less developed countries (LDCs) (see table 2).

According to Morrisset and Pirnia, of the foreign investment advisory service (FIAS), World Bank, the most popular form of incentives for several SSA countries has been tax holidays or temporary rebates, which provide large benefits as soon as the company begins to earn income. These primarily benefit short-term investments, in footloose

industries (such as banking, insurance, internet and general services) that can quit one jurisdiction quickly for another. Tax holidays also tend to benefit investment in new companies rather than those in existing companies and discriminate against long-term investments. Finally and significantly for many SSA countries, they often lead to a large erosion of the tax base as corporate taxpayers avoid taxation of income from other sources. Morisset and Pirnia (2001), claim that when taxpayers have a choice, they can shift income into companies that are enjoying the tax holidays and make more deductible expenditures in other companies they own, that must pay taxes, thus operating a kind of “transfer pricing” system. Furthermore, the taxpaying company may incur interest costs on debt financing, while the tax holiday company enjoys equity financing. In short, the tax holiday company could hold debt in the non-tax holiday company.

The most significant question is whether fiscal incentives have ever proved attractive for FDI location? Bora (2002), in a study of 71 developing countries, concludes that fiscal incentives are the most popular form of incentive; accounting for 19 out of 29 most frequently used incentives. As mentioned earlier and illustrated in Table 2, most fiscal incentives are based on tax holidays and other instruments designed to reduce the effective rate of corporation tax. But such tax incentives increase investment flows only if projects are sensitive to differential taxation and it is very difficult in practice to correctly select such projects. Furthermore, in many cases, it is the most profitable, tax-insensitive investments that are most likely to receive incentives, even though these projects could have been undertaken in the absence of incentives (Halvorsen, 1995).

For many LDCs, particularly SSA, the bulk of FDI originates from the UK, USA, Germany and France; countries that provide their firms investing abroad with foreign tax credits.<sup>3</sup> Therefore a lower tax rate in SSA will be directly offset by a higher rate in the investing country (Tanzi and Zee, 2000). As a result, fiscal incentives lose their attractiveness for foreign firms to increase investments since lower SSA taxes may be offset one-to-one in these countries. Tax incentives of this type do not increase investment. In fact this type of incentive only results in the transfer of revenue from SSA to the richer home countries (Halvorsen, 1995; Fletcher, 2002). For SSA countries in the period 1996-2000, 78% of all FDI inflows to Africa comes from these four countries, with the USA alone accounting for 37% of the total (See Table 3).

There is now a need for SSA governments to reassess the value of fiscal incentives, especially following the UNCTAD (2005) report on “Economic Development in Africa”, which shows that profit remittances in many SSA countries have in recent years significantly exceeded total FDI inflows. Apart from remittances, tax incentives come with an immediate opportunity cost in lost government revenue. The UNCTAD study shows that gold exports in Ghana for the period 1990-2003 rose threefold to about \$893.6 million, of which Ghana earned only about 5% in revenue. In Tanzania, gold exports rose from less than 1% of export revenues in the late 1990s to over 40% in 2003. Between 1997 and 2002, gold export earning stood at around \$890 million, with only about 10% going to government revenues in the form of taxes and royalties.

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<sup>3</sup> Tax credits are typically provided up to the amount that would have been paid in the home country at the domestic rate as if the income has been earned in the home country.

Attracting FDI is only a part of the story. The other is to assess the impact of such FDI on the wider economic and developmental gain to SSA. A balanced framework is needed, where governments need to weigh both country-specific and sector-specific costs and benefits. For example, the inflow of FDI may be a benefit, but the resulting profit outflows may be high enough to be a substantial cost. Thus, the anticipated benefits, in terms of development, that many SSA countries seek will not materialise. Fiscal incentives can not be seen as a “free lunch” to attract FDI, as the provision of these incentives is turning out to be very costly in terms of foregone revenues.

We can infer from the foregoing that the significance of fiscal incentives on FDI location depends on: (i) the source of FDI; if the investment is from advanced economies like the USA, UK, France and Germany, where home firms are offered foreign tax credit, such incentives will have very little effect on the firms’ location decision. Most investment in SSA comes from these countries. (ii) The type of project; short-term, footloose investments, such as banking, insurance, internet, etc, benefit most from fiscal incentives, especially tax holidays. Most investments in SSA are long-term, such as mining and agricultural projects. (iii) The motivation for the investment; if investment is natural resource or market seeking, fiscal incentives could only be a relatively minor determinant of FDI inflows. More significant determinants, apart from market size and growth, are the cost of domestic labour and the state of local infrastructure.

Fiscal incentives could be a significant determinant of FDI inflows in SSA, if investment is efficiency seeking or strategic asset seeking, but only a few SSA countries possess locational factors that would attract these types of FDI, e.g. South Africa and Mauritius.

With the growing pressures of international competition for FDI induced by globalisation, locational advantages based only on traditional factors may be insufficient to attract FDI. Depending on these factors, as many SSA countries do, may marginalise them as one of the major goals of FDI in international production is the improvement of efficiency. Recent studies have highlighted the need of improving and sustaining locational advantages through government policies, to complement traditional factors (Dunning, 2002). To explicitly capture the role of government policies, specifically, fiscal incentives, in determining the inflows of FDI in SSA, we present an empirical analysis in the following sections.

## **5. The Model, Data and Variable Definitions**

For this study we utilize multiple regression analysis to determine the factors that affect the inflow of FDI to sub-Saharan Africa. The model is of the form:

$$FDI_{it} = A + \alpha FISCAL_{it} + \beta X_{it} + \varepsilon_{it}$$

Where  $FDI_{it}$  is the dependent variable measuring the inflow of FDI into country  $i$  in time  $t$ .  $FISCAL_{it}$  is the target (policy) explanatory variable, which is proxied by different measures of fiscal incentives. Vector  $X_{it}$  represent other factors that explain the inflow of

FDI to SSA, such as market size and growth, physical and human infrastructure development, and other policy and institutional variables.  $\varepsilon_{it}$  is an error term and A is a constant term, which may capture the effects of other non-specified factors.

A selection of 16 SSA countries for which data were available in the years 1990 to 2000 form the sample for our analysis. The sample countries are a mixture of those that have traditionally attracted significant FDI and continue to do and those that have always done poorly. The latter could be further divided into those that have performed above expectations and those that have continued to perform poorly. The 16 countries are identified by these different categories; Angola, Nigeria, South Africa, Chad and Sudan are the high FDI performers; Mauritius, Mozambique, Tanzania and Cote d'Ivoire have performed above expectations; and Botswana, Congo Republic, Ethiopia, Ghana, Namibia, Uganda and Zambia are the poor performers. The FDI trends for these countries are presented in figures 1 to 3 below. As can be seen, the majority of the sample countries, over the period 1970-2003, attract no more than \$300M in FDI inflow. The poor performers, although showing an increased trend after the mid 1990s, have started from a very low base, whereas the low performers, performing above expectation, seem to have been improving since early 1990s, again starting from a low base. Their performance seemed to have been mainly policy-inspired. The high performers are SSA countries with large deposits of oil and minerals, or possess large markets.

Only SSA countries are examined in this study on the grounds that the factors that determine the inflow of FDI to SSA are different from those that determine FDI

elsewhere, a view supported by Asiedu (2002) and Barta, Kaufmann and Stone (2003). Also, the structure and characteristics of SSA countries are different from other developing countries. This choice will also ensure that the results are relevant exclusively to SSA.

This study draws its data from two primary sources: United Nations Conference on Trade and Development's (UNCTAD) and World/African Development Indicators of the World Bank (WB). Data are also drawn from several other sources such as Freedom House (2004); World Resources Institute (2005) and International Telecommunications Union (ITU) (2004).

For this study, the dependent variable is defined as the US dollar value of FDI inflow of the host SSA country. The data for this variable was drawn from the UNCTAD FDI database<sup>4</sup>

The independent variables used in this study are defined below:

The attractiveness of the host SSA country's market is proxied by its GDP per capita (GDPCAP) and GDP growth (GDPGROW), which measure market size and growth respectively<sup>5</sup>. They are both expected to be positive determinants of FDI size, particularly for the market-seeking type.

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<sup>4</sup> (<http://stats.unctad.org/fdi/eng/>; accessed on and before 27/06/05).

<sup>5</sup> These two variables have been used extensively in the FDI literature and in the analysis of FDI determinants.

Recently, many SSA countries have attempted to open up their economies to both trade and investment in order to attract FDI. We therefore include in our study a proxy for openness, defined as exports plus imports divided by GDP, i.e.  $(X+M)/GDP$ . We expect that the higher is this ratio, the more open is the country and the higher will be the inflow of FDI.

We also include a proxy for political stability as a measure of country risk, with the expectation that political stability will have a positive impact on FDI inflows. We combine, by taking a simple average rank of two indicators, political freedom and civil liberty, to measure political stability (PFCL). Data for this variable were drawn from Freedom House (2004). Each country is assigned a rating for political freedom and civil liberties based on a scale of 1 to 7, with 1 representing the highest degree of freedom and 7, the lowest.

We select three proxy variables for fiscal incentives (FISCAL) in this study. For most SSA countries, the most popular tax incentive offered to foreign investors is a tax holiday (TAXHOL). This incentive is popular because it comes with a zero initial cost. This proxy will assume a value of 0 if no tax holiday is offered by the authorities. For a tax holiday of five years or less, a value of 1 is allocated and for a tax holiday of more than five years, a value of 2 is allocated. We expect TAXHOL to be positively related with FDI inflow.

In recent years, many countries have begun to relax restrictions placed on the repatriation of profits. In this study we use the proxy REPATRI to capture the impact of this incentive on FDI inflows to SSA. The World Economic Forum (WEF) assigns a range of values (1-7) depending on the level of restrictions imposed on the repatriation of profits<sup>6</sup>. A value of 1 means that no profit repatriation is allowed and a value of 7 means that there is no restriction whatsoever. The higher the value, the lower the restriction and the higher is the expected inflow of FDI.

The third proxy for fiscal incentives is tax concessions offered to specific industries. This indicates whether the host governments are selective in their offer of tax concessions or whether these are given across the board (TAXCON). If a country offers no tax concession, the variable takes a value of 0. If tax incentives are declared for a limited number of industries, the variable takes a value of 1 and if all industries are offered tax incentives, then the variable takes a value of 2. We expect TAXCON to be positively related to FDI inflows.

We select two variables for human capital in this study. Following Root and Ahmed (1979), we use secondary school enrolment ratio (SSER) as a measure, since it reflects the flow of investment in human capital in SSA and it is customary to use it in the empirical literature on growth (see Barro 1991)<sup>7</sup>. This flow measure does not take the accumulated stock of human capital in the economy into consideration. To account for

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<sup>6</sup> <http://search.weforum.org/>, accessed on and before 15/06/05.

<sup>7</sup> SSER is defined as total enrolment in secondary education as a proportion of the population of secondary school-age according to the World Bank.

this stock, we use the *adult illiteracy rate* of the host country (ILLIT). This measure of labour quality is indicative of the level of education and skills of the workers within a country and is widely used in the literature for this reason. This measure is expected to be negatively related to FDI size. Coughlin and Segev (2000) for example found that the illiteracy rate is inversely related to the availability of relatively skilled labour, a major factor in the location decision of MNEs, and a statistically significant determinant of FDI.

Good infrastructure is believed to increase the productivity of investments and stimulate FDI flows (Wheeler and Mody, 1992; Morisset, 2001; Asiedu, 2002). The measure of the quality of infrastructure within the host country is proxied by the number of telephone mainlines per 1000 population (INFRA).<sup>8</sup> It is expected that the higher the number of telephone mainlines, the higher the flow of FDI.<sup>9</sup>

We also incorporate in our analysis the real [effective] exchange rate (REXRI) to allow us to determine the effect of relative wealth and relative labour costs on FDI inflows (see Klein and Rosengren, 1994). A real depreciation of a country's exchange rate would increase the relative wealth of foreign firms and lead to an increase in foreign purchases of domestic assets. Also, a real depreciation of a country's foreign exchange would lead to capital inflows as foreign countries try to take advantage of relatively cheaper domestic labour. The importance of this channel can be seen from evidence presented in Xing and Wan (2004) for China, that points towards a strong dependence of relative

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<sup>8</sup> Data for this proxy were drawn from the ITU database (2004).

<sup>9</sup> An alternative proxy used is the number of cell phone users per 1000 population. These two are negatively correlated at the global level as cell phones tend to replace mainline telephones. They both tend to be positively correlated with FDI inflows. Data for this proxy was also drawn from ITU (2004).

labour costs on exchange rate movements. We measure the real exchange rate of the host country as the nominal rate adjusted by the host and source countries' GDP deflator. An increase in the real exchange rate (i.e. a real depreciation of the host country's currency) should be expected to lead to an increase in FDI inflows.

Finally, the corruption perception index (CPI) is included in the analysis to account for the influence of corruption on the inflow of FDI. Corruption is defined as the misuse of entrusted power for private gain (Transparency International, 2004). This data is collected, mainly through private sector surveys, by Transparency International (TI) and the Political Risk Services (PRS) Group.<sup>10</sup> In general SSA countries score quite low in the corruption ranking. In 2001, of our sample 16 SSA countries, only four, (Botswana (26), Namibia (30), South Africa (38) and Mauritius (40)) ranked below 50 out of 91 countries. At the extremes we have Nigeria, with a CPI of 1 and Botswana, with a CPI of 6. In 2001, Nigeria ranked 90 out of 91 countries and its position remained virtually unchanged in 2005, ranking 152 out of 158 (TI, 2004). For this analysis, we use the PRS data on corruption. Although not all SSA countries are covered by the surveys, and some sample countries are missing a few years, the PRS coverage of SSA countries is better than TI's. The CPI is expected to have a positive relationship with FDI inflows. The higher the CPI (low corruption), the higher the inflow, and vice versa.

To estimate the above model we use the cross-sectionally heteroskedastic and time wise autoregressive model described by White (1980). To use this model we assume that the

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<sup>10</sup> TI scores this variable from 10 (no corruption) to 0 (highly corrupt) and PRS scores the same way but from 6 to 0.

cross-sectional observations have regression errors that are heteroskedastic, and that the time-series observations are autoregressive. The estimation procedure is based on a transformed model where autocorrelation across time and heteroskedasticity across countries are taken into account in order to derive residuals, which are asymptotically non-autoregressive, homoskedastic and efficient.<sup>11</sup> This allows the application of the OLS method using all pooled observations; 176 in total, if all data are available.<sup>12</sup>

## **6. The Empirical Findings**

The descriptive statistics of the variables are presented in Table 4, which shows that a high level of diversity exists between countries in the SSA region. For the variable, market size, measured by GDP per capita, SSA residents received an average of \$1,020 per head, with a high variation between countries. The highest recorded is \$3,873 per capita, for Mauritius in 1996. Growth averaged about 3.6% per annum, with the highest being contributed by Tanzania (19.3%) in 1999. The average FDI flow is \$240M per annum for all SSA countries in the sample. Again there is a wide variation between countries, with the highest being \$3817M recorded for South Africa in 1997. In terms of human capital development, illiteracy levels range widely from 14% for South Africa in 2000, to 72% for Ethiopia in 1990, with an average of 39%. The highest secondary school enrolment ratio is 97% for South Africa, with the average for all SSA countries being only 32%. Tanzania recorded the lowest ratio of 6% in the early 1990s. The most “open” economy as shown by the statistics is Angola in 1999, where total trade is more than 75% higher than GDP. At the other extreme we have Sudan, whose economy was

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<sup>11</sup> All econometric estimations have been performed using STATA v.6.0

<sup>12</sup> There are a number of missing values for some of the variables, with the largest full set of data being 107 observations.

virtually closed in the mid 1990s, with a trade ratio of 0.23 in 1997. The Infrastructure measure reveals an average of 25 main telephone lines per 1000 population, and ranges from 1 (Chad, Uganda) to 235 (Mauritius). The average corruption perception index is 3.6, with the maximum of 6.1 for Botswana in 1999, which is the least corrupt country in the sample. Political stability averaged 4.4, with the index ranging from 1.5 (relatively free) for countries like South Africa, Mauritius and Botswana, to 7 (relatively unfree) for countries like Sudan and Angola.

To estimate the impact of fiscal policy on FDI flows to SSA, controlling for economic fundamentals – market size and growth, openness of the economy, human capital, infrastructure development, economic and political stability and cost factors - two sets of models are estimated; random effect models and fixed effect models. First, however, we look at the association of the explanatory variables to be able to assess the most appropriate way of applying the data to the model specified above.

Multiple correlation coefficients for the independent variables in the pooled dataset reveal that multicollinearity is not a problem in general (see Table 5). The highest correlation coefficients are between ILLIT and GDPCAP (-0.693), and ILLIT and INFRA (0.685), with the correlation between GDPCAP and INFRA at 0.674. The variable ILLIT is dropped from some of our regression models to assess its absence on the overall fit of the model and on the significance of the other explanatory variables.

A multiple regression analysis is conducted for all 16 SSA countries for which data are available, for the years 1990-2000. The results of five separate regression models are presented in Table 6. Equation (1) reports a random effect model corrected for autocorrelation and heteroscedasticity (White-corrected standard errors)<sup>13</sup>, as does equation (2), except that the variable ILLIT is dropped. Equation (3) is a corrected fixed effect model and when ILLIT is omitted, equation (4) is estimated. Equation (5) is the random effects model of equation (1) with the inclusion of CPI. In general, for the various models, the results indicate that a large part of FDI inflows into SSA can be explained by both fiscal (tax) policy variables and other control variables.

Since there is only a small chance of a collinearity problem, the first regression (equation (1)) includes all explanatory variables, apart from CPI, where data are limited. For this model, market size and growth, secondary school enrolment ratio, openness of the economy, the real exchange rate and tax holiday variables explain 30% of the variation in FDI inflows in SSA. For a pooled cross-sectional analysis, this relationship is quite reasonable.

Of the fiscal variables, only TAXHOL is positively significant (at the 1% level). REPATRI and TAXCON are insignificant in determining FDI inflows in SSA. This result indicates that countries that offer wide sweeping tax concessions and the repatriation of profits may tend not to attract the expected level of FDI. This result further corroborates the views of Osman (2000), Morriset and Pirnia (2001), Wells et al (2001) and UNCTAD (2005) that tax concessions generally fail to attract FDI.

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<sup>13</sup> White, H. (1980)

For the control variables we see that market size and growth are significant as expected, given that most SSA countries seem to be attracting more market seeking and resource seeking FDI. Economic policies like human capital development in the form of SSER, openness of the economy and exchange rate adjustments are also quite significant determinants of FDI. SSA countries that have been able to adjust their economies along these lines tend to attract more FDI.

Regression equation (2) reports on the random effect model with ILLIT omitted from the analysis. The results reveal a slight increase in the coefficient and significance of market size and growth. Infrastructural development, INFRA, which was insignificant in equation (1) and has a relatively strong correlation with ILLIT, is now significant at the 5% level. By dropping ILLIT the overall fit of the model is not adversely affected, and broad conclusions remain the same.

Equations (3) and (4) report the fixed effect models, (with (4) dropping ILLIT) and the results show that, for both equations, market size is no longer significant, but market growth is now significant at the 1% level. SSA countries with relatively higher growth (as a result of policy reforms) tend to do better in attracting FDI compared to those simply possessing larger markets<sup>14</sup>. Both equations show that the wider the range of tax concessions offered, the lower the amount of FDI received and the variable is significant at the 1% level. This result is contrary to the expectations of many SSA governments

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<sup>14</sup> In the fixed effect models, countries like Namibia, Botswana and Mauritius tend to have more significant impact on FDI inflows than their larger counterparts.

wishing to attract larger FDI inflows by offering tax concessions. TAXHOL is no longer significant when country effects are taken into consideration. The removal of restrictions on the repatriation of profits becomes significant (at the 5% level) when ILLIT is removed from the model. There is some evidence therefore that removal of restrictions has a significant positive impact on FDI flows to SSA. Political freedom and civil liberty seemed to be a significant determinant of FDI inflows. Countries like Nigeria, South Africa and Sudan seem to feature less well in this area. These two equations explain almost 60% of the variation in FDI inflows in SSA.

Equation (5) incorporates the variable measuring the impact of corruption, as perceived by businesses, on FDI inflows. This result may be viewed with caution, as much information is lost as a result of the smaller number of observations (76) for CPI. The results show that CPI is positively significant at the 5% level i.e. the higher the CPI (i.e. the less corrupt the country is) the higher is the amount of FDI it attracts. Countries like South Africa, Mauritius and Botswana have low levels of corruption and attract high proportions of FDI. Also, some of the most corrupt SSA countries, according to the index, do attract large amounts of FDI, e.g. Nigeria, presumably because of the influence of other factors like market size and growth and natural resources. We also see from the result that both proxies for human capital; SSER and ILLIT are significant at the 5% and 10% levels respectively. This shows that both the stock and flow concepts of education attract FDI flows in SSA.

## **7. Conclusions**

This paper provides empirical evidence on the effectiveness of fiscal incentives to attract FDI to 16 SSA countries for the period 1990-2000, after controlling for the influence of traditional, political, institutional and other policy variables. Pooled data analysis is performed and the results discussed.

The results of the study show that traditional factors such as large market size, good infrastructural development, high skills level, and relative wealth and labour costs are important determinants of FDI inflows.

FDI policies are also found to be important determinants of FDI, e.g. openness of the economy. With regards to fiscal policy, our results show that tax holidays are very important for attracting more FDI. When country effects are taken into consideration, profits repatriation becomes important, so does tax concessions, but with a negatively significant effect on FDI flows. The results also show that the effect of institutional variables on FDI is important, especially a reduction in the level of corruption.

The results of this study highlight the importance of government policies in attracting FDI flows to SSA. They show that apart from the traditional factors, FDI policies of SSA governments also play an important role. Within the FDI policies ( tax incentives) adopted by SSA governments, it is tax holidays that matter the most. For countries offering too many concessions, the results show an adverse effect on FDI inflows.

The UNCTAD (2005) report on “Development in Africa” calls for a balanced policy approach to achieving growth and development, pointing to the fact that in the past, foreign investment steered a development path that was at odds with the needs of the SSA.

For many SSA countries, attracting FDI has become the industrial policy of choice, with fiscal incentives being used as an instrument of competition. Fiscal incentives could be useful, but they have to be selective in terms of the motivation for investment, the source of investment and the type of project undertaken. Chalk (2001) proposed the following to rationalise a country’s fiscal incentive system for it to be able to facilitate the objectives of increasing government revenues and minimising the economic distortions that arise from the provision of fiscal incentives. A fiscal incentive system must be clear and simple, time-bound, performance-based, consistent with regional countries, and not susceptible to abuse.

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**Table 1: Distribution of World FDI Inflows, 1986-2001 (Percentage)**

Region	1986-1990	1991-1992	1993-1998	1999-2000	2001
Developed countries	82.4	66.5	61.2	80.0	68.4
Developing countries	17.5	31.2	35.3	17.9	27.9
Africa	1.8	2.2	1.8	0.8	2.3
Central and Eastern Europe	0.1	2.2	3.5	2.0	3.7

Source: UNCTAD (2002).

**Table 2: Types of Incentives Used by Region**

<b>Region/ Major incentives (Countries)</b>	<b>Africa (23)</b>	<b>Asia (17)</b>	<b>Latin America &amp; Caribbean (12)</b>	<b>Central &amp; Eastern Europe (25)</b>	<b>Western Europe (20)</b>	<b>Other Countries (6)</b>	<b>Total (103)</b>
Tax Holidays	16	13	8	19	7	4	67
Accelerated Depreciation	6	8	6	12	10	5	47
Investment Allowances	4	5	9	3	5		26
Import duty Exemption	15	13	11	13	7	4	63
Duty Drawback	10	8	10	12	6	3	49

Source: UNCTAD, 1995

**Table 3: Sources of FDI inflows to Africa, 1996-2000 (%)**

<b>Country</b>	<b>1996-2000</b>
United States	37
France	18
United Kingdom	13
Germany	10
Netherlands	3
Italy	3
Spain	2
Belgium	2
Others	12

Source: Estimated from UNCTAD (2002)

Table 4: Descriptive statistics of the variables; 1990-2000.

Variable	Obs	Mean	Std. Dev.	Min	Max
FDI	176	239.7455	466.9736	-335	3817
TAXCON	1176	1.552	1.328691	0	2
TAXHOL	176	.9415584	.8873623	0	2
REPATRI	176	5.254545	.9686408	3.2	7
PFCL	176	4.386364	1.673708	1.5	7
INFRA	176	25.21023	43.88525	1	235
REXRI	176	85.84841	34.1738	19.9	203.6
GDPCAP	176	1020.625	1114.873	92	3873
GDPGROW	176	3.553977	4.489503	-24.7	19.3
SSER	1176	32.13772	24.75736	6	97
ILLIT	176	38.93333	17.12228	14	72
XM_GDP	176	.6882955	.3867822	0.23	1.79
CPI	98	3.0	1.0	1	5

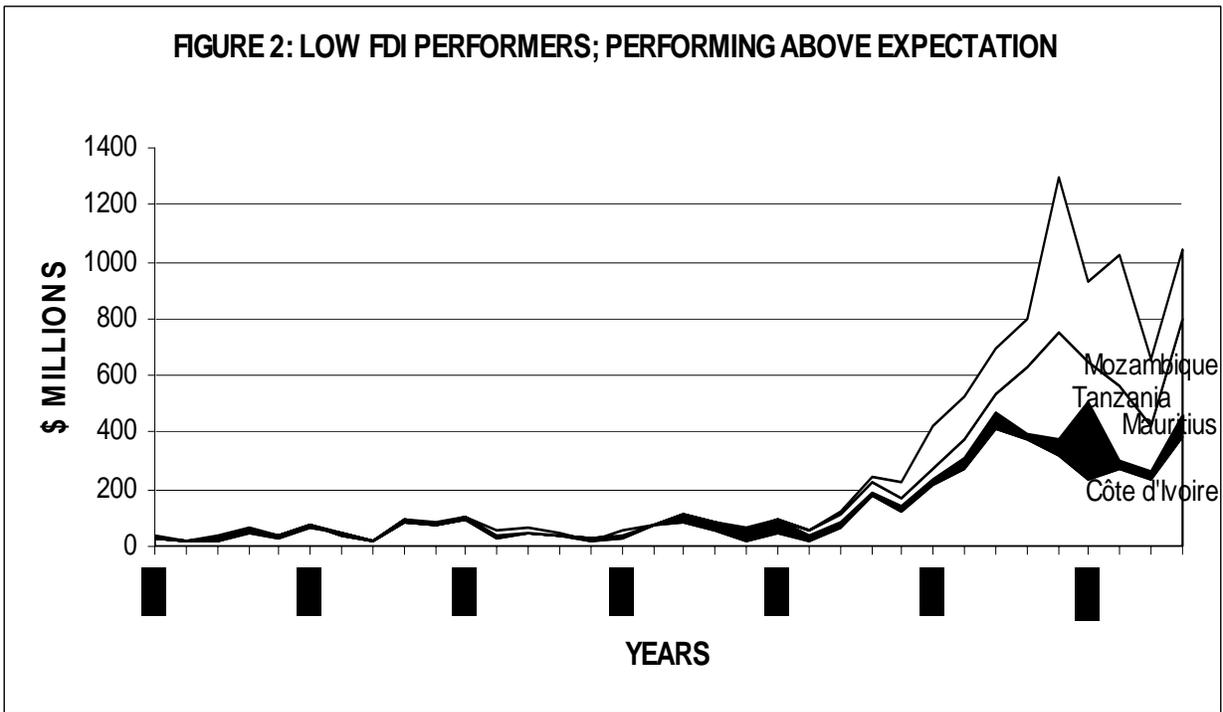
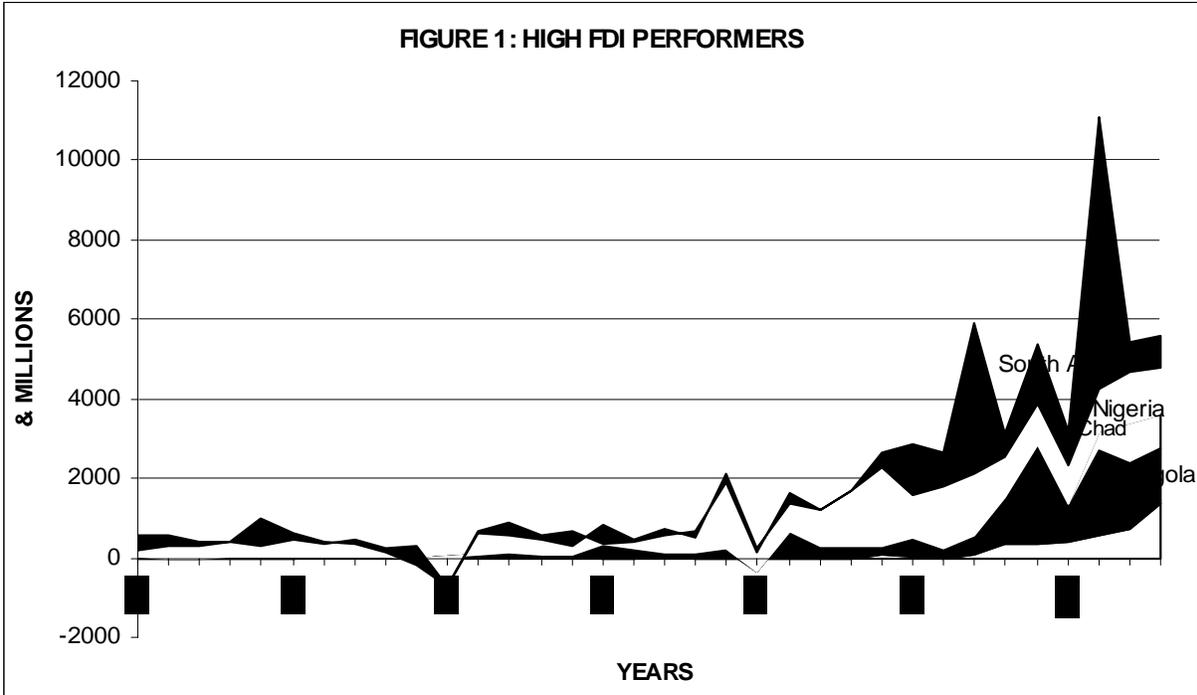
Table 5: Correlation Coefficients of the Independent Variables.

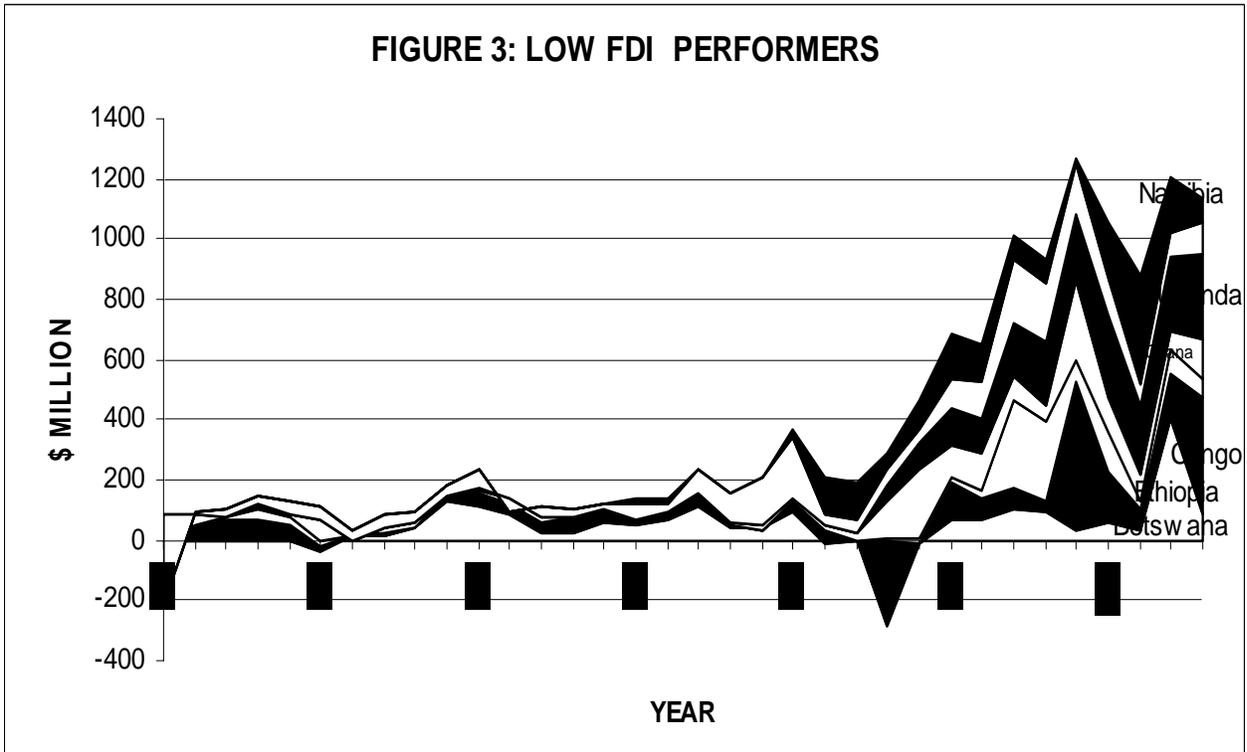
	GDPCAP	GDPGROW	SSER	ILLIT	XM_GDP	INFRA	PFCL	REXRI	REPATRI	TAXHOL	TAXCON
GDPCAP	1.000										
GDPGROW	0.020	1.000									
SSER	0.606	-0.068	1.000								
ILLIT	-0.693	-0.140	-0.438	1.000							
XM_GDP	0.294	0.144	0.337	-0.486	1.000						
INFRA	0.674	0.032	0.517	-0.685	0.183	1.000					
PFCL	-0.454	-0.187	-0.441	0.685	-0.504	-0.664	1.000				
REXRI	0.207	-0.094	0.172	-0.359	-0.055	-0.007	-0.033	1.000			
REPATRI	0.390	0.249	0.303	-0.375	0.056	0.358	-0.520	0.081	1.000		
TAXHOL	-0.404	-0.134	-0.360	0.525	0.000	-0.326	0.506	-0.267	-0.687	1.000	
TAXCON	-0.146	-0.081	-0.144	0.157	-0.041	-0.143	0.216	-0.050	-0.230	0.405	1.000

Table 6: Linear Regression with White-corrected standard errors in the presence of heteroscedasticity.

Variables	1	2	3	4	5
GDPCAP	0.26** (2.42)	0.28*** (3.01)	0.41 (0.42)	0.42 (0.88)	-0.44 (-0.570)
GDPGROW	13.49* (1.72)	15.71** (2.05)	7.76*** (2.53)	7.92*** (2.58)	-9.65 (-0.64)
SSER	10.26*** (2.68)	11.54*** (3.14)	3.84 (0.79)	3.61 (0.75)	20.91** (2.29)
ILLIT	-3.99 (-0.97)		-4.23 (-0.23)		33.37** (1.97)
XM_GDP	623.14*** (2.51)	538.37** (2.25)	191.65 (0.90)	198.13 (0.94)	-488.13 (-1.41)
INFRA	3.98 (1.46)	4.87** (2.02)	0.63 (0.19)	0.53 (0.17)	10.86 (1.15)
PFCL	-46.24 (-0.68)	-48.09 (-0.72)	-151.58 (-1.71)	-153.88* (1.91)	-295.32 (-1.14)
REXRI	4.94** (2.05)	5.88*** (2.87)	4.20 (1.95)	4.16** (1.95)	13.77** (2.43)
REPATRI	74.27 (0.87)	68.40 (0.81)	132.33 (0.75)	171.68** (2.05)	-58.71 (-0.51)
TAXHOL	274.18*** (2.84)	244.69*** (2.83)	33.81 (0.73)	35.10 (0.81)	18.58 (0.36)
TAXCON	-22.3 (-1.22)	-17.33 (-1.41)	-25.52*** (-2.58)	-25.37*** (2.55)	100.43 (1.46)
CPI					311.71** (1.98)
CONSTANT	-238 (-0.26)	-524.66 (-0.60)	-733.01 (-0.60)	-349.92 (-0.46)	235.16 (0.31)
Observation	107	107	107	107	76
R-squared	0.30	0.28	0.57	0.57	0.55
Adjusted R-squared (OLS)	0.21	0.21	0.45	0.45	0.37

Note: Figures in parenthesis are t-statistics. \*\*\* denoted significance at 1%, \*\* at 5% and \* at 10%.





Source: Data drawn from UNCTAD FDI database at <http://stats.unctad.org/fdi/eng/>; accessed on and before 27/06/05

**Appendix: key determinants of FDI by Selected SSA Countries**

Key Determinants	Selected SSA Countries						
	Bots wana	Lesot ho	Maur itius	Mozam bique	Nami bia	Swazi land	Ugan da
Political Stability/Good Governance	√	√	√	√	√	√	√
Macroeconomic Stability/Economic Reform	√	√	√	√	√	√	√
Cheap and Skilled Labour Force	√	√	√			√	
Market Access to Neighbouring State		SA			SA	SA	
Tax Incentives, Investment Promotion, EPZ	√	√	EPZ	√		√	
Investment Protection, Property Rights				√	√		√
Privatisation				√			√
Profit and Dividend Remittances				√			√
Relaxation of Capital Control							
Good Quality Infrastructure	√		√		√		
Preferential Access to EU and US Markets							
Availability of Natural Resources	√				√		

Source: Adapted from Basu and Srinivasan (2002)