

**FOREIGN DIRECT INVESTMENT AND GOVERNANCE: AN EMPIRICAL
EVIDENCE FROM SUB-SAHARAN AFRICA**

TEDROS REDIE HABTEMARIAM



A minithesis submitted in partial fulfillment of the requirements for the degree of Magister Commerce, in the Department of Economics, University of the Western Cape.

Supervisor: Prof. Philip A Black

May 2004

Table of Contents

Declaration.....	I
Acknowledgement.....	II
Keywords.....	III
Acronyms.....	IV
Abstract.....	V
I. Introduction.....	1
1.1 Background.....	1
1.2 Trends and Magnitude of FDI in Developing Countries.....	3
1.3 The Statement of the Problem.....	4
1.4 The Aim of the Research.....	5
1.5 Rationale.....	6
1.6 The Importance of the Research.....	6
1.7 Chapter Outline.....	6
II. Literature Review and Theoretical Framework.....	7
2.1 Theoretical Literature on FDI.....	7
2.1.1 The Effect of FDI on Host Economy.....	8
2.1.2 FDI and Economic Growth.....	9
2.1.3 The Spillover Effect of FDI.....	10
2.2 FDI and Governance.....	13
2.2.1 Governance in Developing Countries.....	15
2.3 An Empirical Literature on FDI.....	17
2.4 The Determinants of FDI.....	17
2.4.1 Market Size.....	18
2.4.2 Physical Infrastructure.....	19
2.4.3 Macroeconomic Stability.....	19
2.4.4 Trade Openness.....	20

2.4.5 Human Capital.....	21
2.4.6 Governance.....	22
2.5 Theoretical Framework.....	22
III. Data, Model, and Econometric Methodology.....	24
3.1 Panel Data Econometrics: An Introduction.....	24
3.1.1 Balanced vs. Unbalanced Panels.....	25
3.1.2 Advantages of Panel Data.....	25
3.1.3 Panel Data Regression Models.....	26
3.1.3.1. Fixed Effect Model.....	27
3.1.3.2. Random Effect Model.....	27
3.2 Sampling and Source of Data.....	28
3.2.1 Data Description.....	28
3.3 The Econometric Model.....	29
3.4 The Estimation Technique.....	31
IV. Empirical Results and Discussion.....	32
V. Conclusion.....	34
Bibliography.....	36
Appendix	



DECLARATION

I declare that *Foreign Direct Investment and Governance: An Empirical Evidence from Sub-Saharan Africa* is my own work, that has not been submitted before for any degree or examination in any other university, and that all the sources I have used or quoted have been indicated and acknowledged as complete references.

Tedros Redie Habtemariam

May, 2004



Signed:.....

Acknowledgements

First and foremost my sincere thanks goes to my supervisor Prof Philip A. Black for his guidance and constant encouragement. For my family their prayer kept me strong through out my studies. My thanks also extend to all the department of economics staff for their support and hospitality especially Miss M. Langeveldt and Mrs C. Delgee while I was in the department. Finally, I convey my heartfelt gratitude to my friends: Abraha Z. Tesfamariam, Yared T. Tsegay, Daniel K. Ghebreab, Rosemary Mosia, Samuel G. Asfaha, Yosief T. Sium, Senait A. Habtesion, Micheal K. Debessai, Mehreteab S. Tesema, Ahmed Mohamed, Hussein S.S. Mohammed and Solomon H. Kahsay for being there for me.

T.R. Habtemariam



**FOREIGN DIRECT INVESTMENT AND GOVERNANCE: AN
EMPIRICAL EVIDENCE FROM SUB-SAHARAN AFRICA**

Tedros R Habtemariam

KEYWORDS:

Sub-Saharan Africa

Foreign direct investment

Governance

Economic growth

Spillovers

Trade openness

Human capital

Market size

Panel data

Fixed effects



Acronyms

EP	= EXPORT PROMOTING
FE	= FIXED EFFECTS
FDI	= FOREIGN DIRECT INVESTMENT
GDP	= GROSS DOMESTIC PRODUCT
GMM	= GENERALIZED METHOD OF MOMENTS
GLS	= GENERALIZED LEAST SQUARE
IV	= INSTRUMENTAL VARIABLE
IS	= IMPORT SUBSTITUTION
LSDV	= LEAST SQUARES DUMMY VARIABLE
MDG	= MILLENIUM DEVELOPMENT GOAL
MNC	= MULTINATIONAL CORPORATION
OLS	= ORDINARY LEAST SQUARE
PLS	= POOLED LEAST SQUARE
SSA	= SUB-SAHARAN AFRICA
UNCTAD	= UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT
UN	= UNITED NATIONS
WB	= WORLD BANK



Abstract

A vast literature agrees on the impact of market size, physical infrastructure, macroeconomic stability, human capital, and trade openness on FDI. Besides, another related and equally important determinant is good governance. It is known that good governance is a pre-requisite for attracting FDI and hence to economic growth. The mini-thesis employs a panel data of 36 countries from sub-Saharan Africa over the period 1996-2000 to examine the impact of governance on FDI flows. Within the governance variable there are six sub-indices which are the rule of law, political stability, control of corruption, voice and accountability, government effectiveness, and regulatory quality. The estimates show that political stability, regulatory quality and accountability have a positive impact on FDI while corruption, government ineffectiveness, and lack of rule of law do not affect FDI. The conclusion drawn from this research is that besides market size, trade openness, human capital, macroeconomic stability and physical infrastructure, governance plays a great role in attracting FDI into the sub- region.



CHAPTER I: INTRODUCTION

1.1 Background

Foreign direct investment^{1 2}(FDI) has become increasingly recognized in providing a package of external resources that can contribute to economic development. Thus, if well managed, it offers either a complementary or alternative channel through which host countries can stimulate and sustain their economic growth rates. Therefore it is instrumental to identify those factors that have the potential to either impede or induce FDI flows into host countries. Needless to say, it is essential to recognize that FDI offers a mixture of positive and negative effects. It is then the task of the host country to separate these effects and take measures that maximize the positives but minimize the negatives (Bende-Nabende, 2002).

There is a contradictory evidence in literature regarding the impact of Multinational Corporations (MNCs) and FDI on both short run and long-term economic growth. While some studies, both empirical and theoretical, indicate that FDI may have a strong positive effect on growth rates in developing countries, and others suggest that these positive effects may not be unconditional and point to the lack of technological spillovers and the possibility of creating an enclave economy in a country.

Another important issue related to FDI is the low level of domestic investment in the host countries. Both economic theory and empirical evidences suggest that FDI has a beneficial impact in developing host countries. The importance of FDI is becoming obvious to economic growth of developing nations because these nations are unable to achieve the needed growth with their domestic investment. It

¹ Note that private foreign investment takes place in three forms: official finance that includes capital from multinational agencies like the IMF and the World Bank; indirect investment that includes portfolio investments, bond finance and bank lending; and foreign direct investment. In this paper we are discussing FDI.

² According to the IMF FDI is defined as “an incorporated or incorporated enterprise in which a direct investor, who is resident in another economy, owns 10% or more of the ordinary share of voting power or the equivalent.”

is well documented in the literature of FDI. Hence, it is obvious to policy makers in those countries that FDI really assists economic growth. This can be carried out through employment creation, technology transfers, promoting managerial skills, increasing local market, creating export capacity and corporate tax (Asiedu, 2003, 2001; Loungani and Razan, 2001). Beyond facilitating growth, FDI has also other potentially desirable features that affect the quality of growth and assist with poverty reduction (Klein, Aaron and Hadjimichael, 2001; Jenkins and Thomas, 2002).

Another related and equally unfavorable vigor is the lack of good governance. Africa today is not only facing an economic crisis characterized by famine, malnutrition, soaring rates of unemployment, refugees, and severe poverty, but is also burdened by serious political problems, including one-person rule, violation of human rights, inter-ethnic and interregional conflict, lack of tolerance for minority groups, ineffective legal system that protect property and human rights, inefficient public institutions; lack of accountability and lack of democracy (Globerman and Shapiro 2002; Hamdok, 2001; Kaufmann, Kraay and Matruzzi, 2003). All these problems have projected an image that Africa is a region riddled by crises and not conducive to investment. As a result of the above problems that engulfed Africa in the 1980s and the 1990s, many investors have developed a perception that investing in Africa is bound to oil and natural resources and this shows Africa is “different” even if there is some progress on governance (Asiedu, 2001: 108).

Besides lack of good governance, the likelihood of expropriation contributes to the lack of investor confidence. Predictability of conditions and lack of arbitrariness may be the most important assurance that can be offered to investors, who seem to adapt to practically any conditions as long as the rules are clearly established in advance and followed subsequently.

1.2 Trends and Magnitude of FDI in Developing Countries

FDI is becoming an increasingly important factor in the economic development of Africa and other developing countries. FDI, in the last two decades, has been one of the most important instruments for international economic involvement in Africa. FDI inflows to Africa in the period of 1991-1994 increased to an average of US\$3.1 billion from an annual average of US\$1.7 billion for the period 1981-1985. However, in percentage terms these figures do not compare favorably with other developing regions where the share of total world FDI moved up from 18% in 1987-1991 to 37% in 1994 (UNCTAD, 1999). However, during the same period, Africa's share continued to stagnate in relative terms.

Global FDI flows increased by six folds during the 1990s, reaching almost US\$ 250 billion by 2000. These flows, however, have been concentrated in a few countries with the world's top 30 countries accounting for 95% and 90% of the total FDI inflows and stocks respectively (UNCTAD, 1999 and 2003). There are a number of reasons for this pattern. Countries with large consumer markets and abundant natural endowments attract more MNCs. The recent literature has demonstrated that the quality of investment climate plays an important role in FDI. Generally, governance can significantly influence the inflow of FDI to developing countries' economic growth (Morisset and Lumenga Neso, 2002; Hausmann and Fernandez-Arias, 2000).

FDI inflows to Sub-Saharan Africa (SSA)³ have traditionally gone to resource-based sectors. SSA countries, in general, have not been able to attract FDI due to their small market size, poor infrastructure, political uncertainty, corruption, and restrictive policies toward foreign investment. However, several African countries have recently improved the environment for foreign investment and have managed to attract FDI inflows toward activities in manufacturing and service sectors. During 1991-94 only 21 percent of FDI inflows to SSA went to countries

³ Sub-Saharan Africa, Africa south of the Sahara Desert, is the term is used to describe those countries of Africa that are not part of North Africa. Sub-Saharan Africa is also known as Black Africa (though some consider this to be a politically incorrect or offensive form).

that were not major exporters of oil or minerals. The share of FDI inflows to these countries rose to about 49 percent in 1995-1999 (Klein *et al.*, 2001).

Table 1. The Share of FDI among Developing Countries, 1996-2000

(US\$ Millions)

year	Sub-Saharan Africa	South Asia	East Asia & Pacific	Latin America & Caribbean	SSA Share in Percentage
1996	4,456	3,510	60,970	43,771	3.95
1997	8,195	4,899	65,057	65,540	5.70
1998	6,332	3,548	62,997	72,829	4.35
1999	7,937	3,073	55,899	88,033	5.12
2000	6,676	3,093	52,130	75,088	4.87

Source: World Development Indicators, 2002

Table 1 summarizes data on the distribution of FDI to developing countries. SSA share is more or less 5% of the total share. It has been declining from about 19% in the 70s and to 9% in the 80s (Chowdhury and Mavrotas, 2003). This shows that even SSA countries have improved some of the governance attributes, the sub-region still getting the lowest share especially in the 1990s. For example, in 2000 foreign investors invested about US\$ 6.67 while Latin American and Caribbean region and East Asia Pacific US\$ 75.1 billion and US\$ 52.1 billion respectively.

1.3 The Statement of the Problem

Why are some countries or regions of the world are more globalized than others? Since the beginning of the 1990s, social scientists have been focusing on this question. More specifically, what has been driving this proliferating research agenda is the need to uncover the determinants of globalization, which usually refers to international trade and capital flows. The reasons why some developing countries, specifically those in sub-Saharan Africa, have been more successful than others in attracting foreign investment is the theme of this research. This study examines how six governance indicators determine the inflow of FDI in SSA.

1.4 The Aim of the Research

The aim of the research is to identify the major determining factor for FDI flow to SSA's recipients' countries with especial emphasis on the impact of governance on FDI. Governance is represented by six sub-indices, which cover a broad range of institutional, legal, and policy outcomes.

1.5 Rationale

FDI has become an important source of foreign direct finance to developing countries. It is, therefore, important to examine whether there exists a negative or a positive relationship between FDI and other macroeconomic variables, including governance in a recipient country. It was obvious that Africa has been suffering as a result of civil war, political instability, and lack of democracy and good governance. But since the late 1990s Africa has been improving in terms of all the above governance related factors, which have been hindering economic growth and FDI.



While other developing countries have been enjoying a drastic increase in FDI Africa has not got a significant chunk out of the inflow. Most of the FDI has been going into East Asian countries and since the 1990s to Central and Eastern Europe countries (former communist countries). Though there was an increase in FDI in the continent in the 1990s, the motive behind investing in Africa is either because of the vast natural resources or market size. About 65% of the total investment is concentrated in few countries that have tangible assets or/ and large market size (Asiedu, 2001). It is evident from previous studies that those countries that lack both natural resources and market size are unsuccessful apart from few countries. With regards to governance, except for a very few countries there is lack of good governance that has as a negative impact on investment, though, there has been a significant improvement especially in the rule of law and political stability.

1.6 The Importance of the Research

The importance of the research is to see if governance is one of the main deterrents for not attracting FDI into Africa. All the previous empirical evidences have controversial results on the role of governance, although, with different approaches, different variables and different data specifically on governance.

1.7 Chapter Outline

The thesis is organized as follows. The first chapter is an introduction that discusses the importance and impact of governance on FDI, and patterns and trends of FDI flows. Chapter two discusses recent literature on FDI, determinants of FDI, and the relationship between economic growth and investment. The third chapter describes the model, data and methodology. Chapter four discusses the results as well as interpreting and analyzing them. Conclusion will be provided in the final chapter, that is, chapter five.



CHAPTER II: LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 Theoretical Literature on FDI⁴

The relationship between FDI and growth has motivated a large empirical literature focusing on both developed and developing countries. Theoretically, there is a view that is bolstered by recent developments in growth theory, which highlights the importance of improvement in technology, efficiency, and productivity in stimulating growth (Lim, 2001). Both neoclassical and endogenous growth models give the basis for most of the empirical work on the FDI-growth link (Chowdhury and Mavrotas, 2003). Most of the empirical literature on FDI and growth are developed from either the neo-classical models of growth or the endogenous growth models as a theoretical framework. In the neo-classical models of growth, which is based within the Heckscher-Ohlin framework, FDI increases the volume of investment and / or its efficiency, and leads to long-term level effects and medium-term, transitional in growth. The new endogenous growth models consider long run growth as a function for technological progress, and provide a framework in which FDI can permanently increase the rate of growth in the host economy through technology transfer, diffusion and other spillover effects (Nair-Reichert and Weinhold, 2000).

As argued by Krugman and Obstfeld (2000), there is another recent theory, which attempts to explain the determinants of FDI. This orthodox trade theory asserts that the direction and magnitude of capital flows is determined by differences in factor proportions among countries, which cannot be addressed by international trade. According to this theory, a difference in factor proportions stimulates an adjustment of real exchange rates between them and consequently encourages

⁴ Lipsey (2001) explained in detail the concept of FDI. He explains FDI from micro (industrial organization) and from macro (international finance) perspective. The micro view tries to see the motivations for investment in controlled foreign operations, from the investor's point of view. While the macro tries to see FDI as a particular form of capital flow across national borders, that is from home countries to host countries.

countries with abundant capital and labour shortages to implement FDI into countries that are in the opposite situation. In this case, FDI functions as one way to bridge an intertemporal gap of capital demand and supply, and, like other capital inflows, increases the production frontier of developing countries, which normally suffer a lack of capital. Differences in factor proportions, however, cannot be the sole determinant of international capital flows, which seem to be highly volatile in comparison to relatively stable factor endowments. Past empirical studies, for example, show a strong influence of exchange rates movements on FDI. Since changes in exchange rates directly affect factor prices (e.g. labour prices) of host countries vis-à-vis home countries, they represent one major criterion whereby many MNCs decide their FDI. As factor proportions influence exchange rates but only to a modest degree, many other factors that affect exchange rates are assumed to influence FDI indirectly (Krugman and Obstfeld, 2000).

Nevertheless, the basic shortcoming of conventional neo-classical growth models, as far as FDI is concerned, is that long-run growth can only be achieved by technological progress, which is considered to be exogenous. FDI would only affect output growth in the short and in the long runs, under the conventional assumption of diminishing returns to capital inputs with a given technology; FDI would have no permanent impact on output growth. Within the new growth framework, FDI is treated as one of the factor inputs along with labour and domestic capital and is expected to promote growth in the long run. Whether or not technological progress is best described as exogenous to the world as a system, the role of FDI in diffusing technology to developing countries appears clear. Under either interpretation, technology created in the developed world is exogenous to a developing country. Consequently, a positive relationship between FDI and long run growth in a developing host country should be expected.

2.1.1 The Effect of FDI in an Economy

There are two competing views regarding the effect of FDI on domestic investment. One is that FDI encourages domestic investment by providing new markets, demand for inputs and new technology that spills over into the economy.

Labor is mobile and often moves from MNCs to domestic firms; more skilled labor may leave a multinational firm to form a start up. There is a belief that FDI can serve to increase competition thereby making markets (including financial markets) more efficient. Finally investment in new sectors can stimulate the growth of new industries and new products.

The opposing view is that FDI crowds out domestic investment by being monopolistic competitor. Domestic firms are simply not able to compete with foreign firms in terms of their advertising power, ability to dominate the market and engage in predatory pricing to prevent entry. Some also believe that FDI crowds out domestic investment by raising the demand for credit and consequently interest rates as well. Also, if financial inflows are very large, they can raise the rate of exchange, making the country's exports less attractive. However, as suggested by Cotton and Ramachandran (2002) that crowding out is not a major problem with regard to FDI. Rather the benefits of FDI are quite visible in terms of increased competition, efficiency and innovation.



2.1.2 FDI and Economic Growth

The contribution of FDI to economic growth has been debated quite extensively in the literature. The traditional argument is that an inflow of FDI improves economic growth by increasing the capital stock, whereas recent literature points to the role of FDI as a channel of international technology as well (Lensink and Morrissey, 2000). Furthermore FDI as an important source of capital, complements domestic private investment, is usually associated with new job opportunities, and in most cases is related to the enhancement of technology transfer and overall boosts economic growth in host countries.

Theoretically, this view has become bolstered by recent developments in growth theory, which highlights the importance of improvements in technology, efficiency, and productivity in stimulating growth. In this regard, FDI's contribution to growth comes through its role as a medium for transferring advanced technology from the industrialized to the developing economies.

Both economic theory and empirical evidence suggest that FDI has a beneficial impact on developing host countries. The importance of FDI is becoming obvious to economic growth of developing countries because these countries are unable to achieve the needed growth with their domestic investments. Hence, it is becoming obvious to policy makers in those countries that FDI really assists economic growth. This can be done through employment creation, technology transfer, managerial skills, increasing local market, create export capacity and corporate tax (Asiedu, 2003; 2001; Loungani and Razan, 2001). Beyond promoting growth, FDI has other potentially desirable features that affect the quality of growth and assist with poverty reduction (Klein *et al.*, 2001; Jenkins and Thomas, 2002).

The entry of a foreign investor (mostly MNCs) is not simply import of capital in another country. FDI is one of the channels for international knowledge and technology transfer. Technology transfer is considered to occur in the following way: in order to compete with more informed domestic firms, foreign investor should possess more advanced technology, managerial or marketing skills. Thus, locally owned firms may have the opportunity to appropriate knowledge and technology developed by parent MNC and transferred to the MNC's affiliates increases competition in local markets and forces the domestic firms to enhance their efficiency in order to protect their market shares and profits. These and other various externalities, caused by FDI to the domestic firms, are often called spillovers⁵.

2.1.3 The Spillover Effect of FDI

Spillovers may occur as the results of labor turnover from MNC's affiliates to the domestic firms, demonstration effect, rise in competition and technical support of supplies and customers. Various studies show that the existence of spillovers is not predetermined and not guaranteed but it depends on some technological and economic factors. One of them is the difference between foreign and domestic technology level, the so-called technology-gap. Economic literature suggests that the larger is the technology gap between home and host economy, the larger becomes the potential for imitation of technologies, which induces economic

⁵ For a more detailed discussion on spillovers see also Blomstrom and Kokko (2003).

growth. However, if the technology gap between foreign and local firms is too large, spillovers may not occur. This can be explained by the fact that technologies developed in more industrialized countries may be less suited for conditions in developing countries, because their implementation may require enormous expenditure. Other factors are the values of underlying technology, competition in the markets, etc.

FDI has various effects in an economy of a host country including growth effect. In theory, there are a variety of channels through which FDI can promote economic growth, especially in the host economy. Perhaps the most important one is technology transfer and spillovers. The economic growth literature has established the importance of technological progress in economic development. FDI often leads to technology transfer to affiliates of multinational firms in host countries. Spillovers can occur through MNCs' interaction with domestic suppliers and customers or through worker mobility. Therefore, FDI can have an impact on income.



Hermes and Lensink (2000) identify and distinguish spillovers in different forms. The following channels, through which spillovers of FDI may take place, have been distinguished: (1) demonstration and/or imitation, (2) competition, (3) linkages, and (4) training (see also Blomstrom and Kokko, 2003:10).

Spillovers through the demonstration channel emphasizes that technologies used by foreign firms are more advanced than those used by domestic firms, and that these domestic firms may imitate the newer technologies, which will make them more productive. The same may hold for managerial practices introduced by foreign firms. The demonstration effect may take place through direct or indirect contact between firms or through labor turnovers from foreign to domestic firms. The more backward the technological level in the host country in comparison to the level used by the foreign firms, the more domestic firms may profit from imitating and copying these technologies. This appears to reflect the idea of convergence of technological skills.

The competition channel stresses that the entrance of foreign firms intensifies competition in the domestic market. This forces domestic firms to become more efficient, which may lead to upgrading existing technology, or developing (or copying) new technologies and management skills.

The linkage channel of spillovers stresses the fact that MNCs may transfer new technology to domestic firms through transactions with these firms. Such transactions may, for example, be in terms of the purchase of raw materials or intermediate goods. This may lead to intensive buyer-seller relations with domestic firms in the host country, and as part of these relations foreign firms may provide technical assistance and training to local linkage firms. Moreover, selling to foreign firms may encourage domestic firms to upgrade the production process based on the technical and quality requirements demanded by the foreign buyers, increasing their productivity.

Finally, the training channel emphasizes that the introduction of new technologies, and domestic firms copying them, needs to be supported by an upgrading of the human capital available domestically. Domestic firms can only adopt these new technologies when the labor force is able to work with them. Therefore, local firms may be stimulated to train their own employees when foreign firms enter the market. This stimulus may be based on one of the other three channels discussed. Thus, perceived opportunities to copy newly introduced technologies, increased competition in domestic markets and/or the existence or development of linkages between foreign and domestic firms may lead to increasing training efforts by domestic firms. The latter point also makes clear that in practice it will be rather difficult to separate the four channels of spillovers.

The role of FDI as a source of capital has become increasingly important to SSA. The reason is that in order for the continent to achieve the Millennium Development Goal (DMG)⁶ of reducing poverty rates by half, the region needs to fill an annual gap of US\$64 billion, about 12% of GDP. Since income levels and domestic savings in the region are low, a bulk of the finance will have to come

⁶ DMG is a development goal set for Africa by the UN to reduce poverty by 50 percent in 2015.

from abroad - official finance or from private foreign investment. However, official assistance to the region has been declining. In addition, FDI is unavailable to most African countries; most of the countries in the region cannot raise funds from international capital markets. As a consequence, a bulk of the external resources needed to alleviation has to come from FDI (Asiedu, 2003).

2.2 FDI and Governance

Good governance is now acknowledged as an important pre-requisite for well functioning markets of countries and, hence, for attractive investment conditions and a sustainable allocation of investment capital. A number of multilateral organizations have reflected on the elements of good governance, and on their relation to investment for development. As the culture and experience of these organizations vary, so, too, do their perceptions of what constitutes good governance.



The key dimensions of governance include: rule of law, government effectiveness, voice and accountability, control of corruption, regulatory quality and political stability (Kaufmann *et al.*, 2003). Moreover, good governance includes sound democratic principles in political life of a country and consultation procedures with the private sector and other civil society stakeholders to ensure that laws are consistent with practical life and compatible with the needs and possibilities of the firms and the economy in general.

A system of governance that is not functioning properly can be easily identified by various signs, regardless of the specific historic-cultural context of each country: corruption, squandering of environmental resources, loss of public confidence in the government, non-respect of constitutional rights, etc. This usually leads to sub-optimal utilization of the country's human and financial resources.

Given the relative irreversibility of FDI, unnecessary uncertainties about legislative action and rules and enforcement act as major impediments, by giving

rise to risk premiums in general and by raising fears of discriminatory treatment. A non-transparent host country business environment raises information costs, diverts corporate energies toward rent-seeking activities and may give rise to outright crime such as corruption. While this weighs down on the entire host country business sector, it arguably acts as more of a discouragement to outsiders who are not privy to locally available information. All companies, domestic and foreign alike, on an equal footing, should be able to know in what conditions they operate and to prepare themselves sufficiently in advance, when changes are upcoming.

Among the elements of the enabling environment that can be influenced by policies, transparency is arguably the single most important one. Many studies suggest that companies may be willing to invest into countries with legal and regulatory frameworks that would not otherwise be considered as "investor friendly" provided they are able to obtain a reasonable degree of clarity about the environment in which they will be operating. Conversely, there appears to be certain threshold levels for transparency beneath which the business conditions become so opaque that virtually no investor is willing to enter, regardless of the extent of the inducement.

Transparency in government decision-making and public policy implementation is important because it facilitates governmental accountability, participation, and predictability of outcomes. To achieve transparency, there is a need for clear and enforceable rules and procedures, which are preferable to those that provide discretionary powers to government officials or that are susceptible to different interpretations. Accountability is needed to make sure that rules are actually complied with. Similarly, transparency and information openness cannot be assured without legal frameworks that balance the right to disclosure against the right of confidentiality, and without institutions that accept accountability.

2.2.1 Governance in Developing Countries

Dethier (1999) defined governance as “the science of government behaviour and performance including the exercise of economic, political and administrative authority to manage a country’s affair at all level”. Furthermore governance refers to existing institutions and policies in a country. It is widely argued that a country’s economic performance overtime is determined to a great extent by its political, institutional and legal environment (OECD, 2001). Hamdok (2001:1), in addition, broadly defined governance

“... includes a broad range of obligations including the establishment and maintenance of law and order, creating transparent administrative structures, extending social infrastructure to the rural areas, protecting poor and vulnerable groups and including them in the decision- making process and the preservation of the peace.”

The potential relevance of governance to explaining FDI flows across countries has been indirectly suggested by Lucas (1990), who addresses the question of why capital flows from rich to poor countries do not take place in the world economy until capital to labor ratios and, hence, wages and capital returns are equalized. He considers a number of possible explanations and rejects several prominent explanations on conceptual grounds, including the possibility that technological change makes capital substantially more productive in developed countries. An explanation that he considers quite plausible is the efforts of host country governments to appropriate economic rents associated with inward foreign direct investment through instruments such as heavy taxation. He offers this as a possible explanation for relatively low rates of capital formation in developed countries in the face of substantial factor price differences between developed and developing countries. While Lucas identifies explicit policies that are targeted at foreign investors, other governance policies that discourage domestic capital investment may also be relevant factors influencing inter-country differences in economic performance.

In general, however, he highlights an argument that capital flows cannot be predicted by looking exclusively at labor and capital scarcity. There is a relatively

extensive empirical literature focusing on the characteristics of locations that seems to either attract or repel foreign investors. While it seems plausible that FDI will be attracted to regions characterized by more favorable governance infrastructures, all other things constant, most of the relevant literature has focused on economic determinants of FDI inflows. It is, of course, true that the international business literature has acknowledged the importance of country-specific political risk. As a consequence, empirical analyses of FDI now routinely include some kind of variable to control for inter-country differences in the broad political environment, albeit with somewhat mixed results.

However, it is difficult to generalize about the statistical impact of political governance attributes, in part because the attributes are measured in different ways in different studies. Moreover, although many previous studies adopt measures that are closely related to the idea of governance infrastructure, there has yet been no systematic attempt to directly relate governance infrastructure measures to FDI flows for a wide cross-section of countries. Nor has there been much discussion regarding the specific infrastructure elements that are especially robust determinants of FDI.



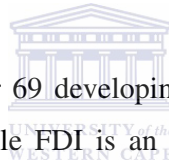
The point of departure is that good governance is a requirement for sustainable development in Africa. Growth and development require a predictable regulatory administration and an effective and transparent public administration and an independent judiciary. However, while it is important for the state to strive to recreate a growth and development-enhancing environment, it should be realized that the attainment of good governance is a process (Hamdok, 2001).

Broadly speaking, governance infrastructure comprises public institutions and policies created by governments as a framework for economic and social relations. We are most concerned with those elements of the governance infrastructure that can affect the investment decisions of MNCs. A “positive” governance infrastructure would therefore include: an effective, impartial and transparent legal system that protects property and individual rights; public institutions that are stable, credible and honest; and government policies that favor

free and open markets. These conditions encourage FDI and presumably private domestic investment as well, by protecting privately held assets from arbitrary direct or indirect appropriation. In a related manner, the same conditions encourage sunk cost investments by MNCs that facilitate efficient operation in host countries.

Governance infrastructure, so conceived, can be contrasted with physical infrastructure and human capital. Physical infrastructure is conventionally thought to include investments in the construction and maintenance of communications, transportation and utility networks. Human capital reflects less tangible investments in people, mainly in the form of education and health. To the extent that education and health are provided by government or influenced by public policy, human capital may be thought of as human infrastructure.

2.3 An Empirical Literature on FDI



Using panel data in a test for 69 developing countries Borensztein, De Gregorio and Lee (1998) find that while FDI is an important vehicle for the transfer of technology, and a positive contributor to economic growth, its impact is greater the higher the level of human capital stock in the host economy. While Balasubramanian, Salisu and Sapsford (1996) employ a cross-country procedure to analyze 46 developing countries in 1970-85. The evidence regarding the importance of a certain threshold of the host's human capital, in addition, finds that FDI's growth contribution is significantly greater in outward-oriented or neutral trade regimes compared to those pursuing import-substituting strategies.

2.4 The Determinants of FDI

An immense literature on the determinants of FDI in developing countries clearly suggests the importance of infrastructure, market size, human capital, macroeconomic stability and sound institutional framework for attracting FDI flows (see for example, Singh and Jun, 1995; Chowdhury and Mavrotas, 2003; Globerman and Shapiro, 2002; Morisset, 2000).

Although there is no complete theory available on the determinants of FDI, two sets of forces are usually suggested as important in influencing investment decisions of foreign companies: those external to the firm and those internal to the firm. The internal factors to the firm include management, organization, structure and production technology that may help determine the ownership of production. The external factors include interaction country characteristics, such as government policy, availability of resources and infrastructure, all of which may help explain the desirability of producing a product or providing a service (financial or non-financial) in a particular country (Mbekeani, 1997; Lipsey, 2001).

2.4.1 Market Size

Size of markets and sustained growth of markets are obvious attractions to profit maximizing firms. Most statistical studies on the determinants of FDI, in developing countries, indicate the importance of size of markets (Balasubramanyan *et al.*, 1996). The theory underlying this proposition is that firms, which possess advantages such as a new technique of production or ownership advantages, require sizeable markets both at home and abroad in order to maximize returns to their investments in generating the unique advantages they possess. Although markets abroad can be serviced through exports, tariffs and trade restrictions may be a barrier to exporting. In addition, the physical presence of the firm in the market would facilitate acquisition of market intelligence. Investments that are attracted to host countries because of the size of markets are known as market seeking investments (Dunning, 1993; Asiedu, 2003).

It should be noted also that not all FDI is domestic market oriented. Dunning, in his seminal work, classified investment that attracts size of markets into market, resources, and efficiency- seeking investments. There are also export market oriented investments both in relatively large countries such as China and small economies such as Mauritius. The attraction of these countries for foreign firms is their resource endowments including cheap but efficient labor. Investments which

seek such endowments are referred to as resource seeking FDI (Dunning, 1993; Asiedu, 2002).

Yet another variety of FDI referred by Dunning as efficiency seeking FDI, may also respond to relatively low wage costs in developing countries. Efficiency seeking investments consolidate and rationalize market seeking and resource seeking investments which companies may have undertaken in the past. Such investments may result in an international division of labor, with capital intensive segments of the production processes and products located in the developed countries and the labor-intensive processes and components located in the developing countries. In some cases, FDI may be undertaken in locations with cheap labor for the assembly of components and parts. It should be noted that in these types of labor seeking investments it is not just low wage costs, but it is the efficiency wage or low wages coupled with relatively high productivity which counts in the investment decision process of foreign firms.

2.4.2 Physical Infrastructure



The significance of infrastructure facilities as a determinant of FDI needs no elaboration. Infrastructure facilities are to be defined broadly in this context to include not only transportation and communications but also a favourable environment for work and leisure. These are vital for any sort of investments be they are foreign or domestic.

2.4.3 Macroeconomic Stability

Low inflation rates and stable exchange rates are important determinants of FDI for more than one reason. First, they attest to the stability and the underlying strength of the economy. Second, they provide a degree of certainty relating to the future course of the economy and impart confidence in the ability of firms to repatriate profits and dividends. Weak economies with high levels of domestic borrowing and debt, measured by the ratio of budget deficits to GDP and total volume of borrowing to GDP, are often compelled to institute exchange controls and controls on the capital account of the balance of payments. Third, more often a stable macro economic environment also implies a stable political environment.

Political and economic stability are usually intertwined (Balasubramanian *et al.*, 1996).

2.4.4 Trade Openness

The main contribution of standard theories of international trade is that free trade is a positive sum game; it confers gains on all the trading partners (see Krugman and Obstfeld, 2000). The gains are two fold; specialization gains and exchange gains. The former arise from allocation of resources and specialization in production based on comparative advantage of the trading countries and the latter from an opportunity to trade at a set of prices different from that in autarchy. Standard trade theories also demonstrate that in general policy induced interference in free trade in the form of tariffs and quotas on imports would result in misallocation of resources and loss of efficiency gains from trade. Resources will move from the production of exportables into the protected and the relatively profitable importables.

Restrictions on imports may, however, induce inflows of foreign capital, including FDI, into the production of importables. The issue then is whether or not such tariff jumping variety of FDI is socially efficient from the point of view of the host countries. The consensus on the issue is that whilst such tariff jumping FDI may be profitable, from the point of view of the foreign firms it may not be socially profitable for the host country. Foreign firms would enjoy markets sheltered from import competition and reap substantial rewards for their investments. The host country, however, would lose because of (a) presence of FDI in areas of activity in which it does not possess comparative advantage (b) protection induced misallocation of domestic resources away from lines of activity in which it enjoys a comparative advantage and loss of specialization gains from trade (c) payment of profits to foreign owned factors of production.

Admittedly, FDI in the import competing industries may contribute to skill formation and technological change. But these sorts of dynamic gains from FDI are uncertain. Foreign firms would have little incentive to invest in development of skills and technology in the presence of highly profitable markets, sheltered

from international competition. FDI can generate dynamic advantages only in the presence of an appropriate climate for investment, which is free of factor and product market distortions.

Several statistical studies endorse the proposition that the tariff jumping variety of FDI not only results in the importation of technologies which are not appropriate to factor endowments of host countries but also results in social rates of returns, which are well below the private rates of returns to foreign investors (Balasubramanian *et al.*, 1996). In other words, the country would have been better off importing the products than making them at home with the tariff jumping variety of FDI.

In general, FDI which exploits the natural comparative advantage, which host countries possess, contributes to efficient resource allocation and specialization and trade. This is not to say that the only variety of FDI, which is socially efficient, is of the trade promoting variety. It is just that allocation of FDI between import competing activities and export promoting activities should be guided by comparative advantage and market forces free of policy induced distortions. This shows that FDI is much more effective in EP (export promoting) countries than in IS (import substitution) countries, but this doesn't rule out production by foreign firms for the domestic market provided that such investment are guided by distortion of free market forces. Statistical evidence in support of this proposition is robust (see Balasubramanian *et al.*, 1996).

2.4.5 Human Capital

The development literature emphasizes technology transfers as a central aspect of take-off and convergence of growth rates. Arguably the most important channel of technology transfer is FDI. While theoretical models of FDI and firm location focus largely on technology and physical capital, recent empirical evidence underscores that the success of technology transfer via FDI depends crucially on the size of the developing country's human capital stock (Borensztein *et al.*, 1998). In addition, Borensztein *et al.* (1998) documents that large share of FDI occurs among nations with similar technology and human capital levels.

There is a general consensus that FDI contributes to economic growth by stimulating technological progress. In recent years, there is a growing view that FDI is positively correlated with growth. In theory, there are a variety of channels through which FDI can promote economic growth, especially in the host economy. Perhaps the most important one is technology transfer and spillovers. The economic growth literature has established the importance of technological progress in economic development. FDI often leads to technology transfer to affiliates of MNCs in host countries. Spillovers can also occur through MNCs' interaction with domestic suppliers and customers or through worker mobility. Therefore, FDI can have an impact on income.

Borensztein *et al.* (1998) present a model where FDI has a significant impact on economic growth of developing countries via technology transfer. This model is based on the assumption that foreign investors operating on domestic market make adoption of new technology easier for local firms and thus promote technological progress and growth. However, in order to benefit from technology transfer, domestic firms should have sufficient absorptive capability that is a minimum threshold stock of human capital.

2.4.6 Governance

Recent empirical findings tend to confirm the impact of governance on FDI is significant. Globerman and Shapiro (2002) found that investments in governance infrastructure not only attract foreign capital but also create the conditions under which MNCs invest in a host country. Because the investment environment of a country affects both domestic and foreign investors, and because FDI has been shown to promote host country efficiency. It is a natural extension of the literature to consider the impact of governance infrastructure on cross-country differences in FDI flows.

2.5 Theoretical Framework

Theoretical models of investment suggest several determinants of investment behaviour. At the aggregate level, the early accelerator theory of investment

captured the dependence of investment on expected returns. According to accelerator model, investment is related linearly to past changes in output. Output growth rates are expected to persist through time and no account is taken of the influence of the cost of capital on the investment decision. The neo-classical theory of investment, which followed, addressed the latter shortcoming but continued to assume that output was determined outside the model. According to the neo-classical model, investment spending depends on the user cost of capital and is geared to maintaining the optimal capital stock and an associated level of output.

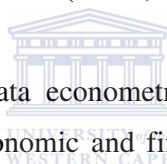
There are some approaches which develop hypotheses about country risk and investment with simple models of macroeconomic equilibrium. Another hypothesis is that openness to trade, through the discipline of international market, is a way of improving the credibility of government policies. This, in turn, lowers country risk and increases investment. An additional hypothesis is that income inequality, by fuelling social unrest, increases socio-political instability. The later, by creating uncertainty in the politico-economic environment, reduces investment.



CHAPTER III: DATA, MODEL AND ECONOMETRIC METHODOLOGY

3.1 Panel Data Econometrics

Hsiao (2003) defined panel data set as “one that follows a given sample of individual’s overtime and thus provides multiple observations on each individual in the sample”. It has become widely available in both developed countries and developing countries. Nowadays it has also become increasingly important in developing countries. In these countries, there may not have a long tradition of statistical collection. Panel data sets for economic research possess several major advantages over conventional cross-sectional or time-series data sets. Panel data usually give you a large number of data points, increasing the degrees of freedom and reducing the collinearity among explanatory variables, hence improving the efficiency of econometric estimates (Hsiao, 2003).



The development of panel data econometrics in recent years has led to the expansion of the range of economic and financial models where the panel data model is applicable. The development has been mainly achieved in the panel data model dealing with the case of a large number of individuals and a small number of time-series observations. In addition, the development has predominantly grown out of introducing the GMM (Generalized Method of Moments) proposed by Hansen (1982). The GMM, including the IV (Instrumental Variable) method, allows the implementation of consistent estimations for the panel data model based on conditional expectations and the dynamic panel data model, which we cannot estimate consistently in the framework of traditional estimation techniques such as the OLS (Ordinary Least Squares) and the LSDV (Least Squares Dummy Variable) estimators. Furthermore, it is recognized that the GMM is applicable to accomplish consistent estimations for the count panel data model and the structure of the variance in the panel data model. Until now, a great deal of empirical studies in economics and finance were implemented in parallel with the development of the estimation techniques.

3.1.1 Balanced vs. Unbalanced Panels

1. Balanced panels are panels, where we collect for each individual (n) an observation at each period (T) of the study. Thus we have a total of $n \times T$ observations. This may be the case when we collect data on regions in a country over time as regions usually do not disappear or new regions enter the country.

2. Unbalanced panels instead are panels, where we do not collect data for an individual at each period of the study. This is typical for household panels. The reason is that it is not always possible to interview all household members. They may just disappear, refuse to take part in an interview, some die, children, for example, grow old enough to be interviewed for the first time, but have not been interviewed since the beginning of the panel study. So, the number of observations per respondent T_i may vary and the total number of observations is $\sum_{i=1}^n T_i \neq nT$.

3.1.2 Advantages of Panel Data

According to Hsiao (2003), there are many important advantages of panel data compared to time series or cross-sectional data sets is that it allows identification of certain parameters or questions without the need to make restrictive assumption. And these main advantages are (Hsiao, 2003; Baltaghi, 2002):

1. Efficiency of parameters

Because panel data sets are typically larger than cross-sectional or time series data sets and explanatory variables. They vary over two dimensions (individual and time) rather than one. Estimators based on panel data are quite often more accurate than from other sources.

2. Identification of parameters

Panel data reduces identification problems. Although this advantage may come under different headings, in many cases it involves identification in the presence of endogenous regressors or measurement error, robustness to omitted variables and the identification of individual dynamics.

3. Controlling for individual heterogeneity

Panel data suggest that individual firms, states, or countries are heterogeneous. Time series and cross section studies not controlling for the heterogeneity run the risk of obtaining biased results.

4. The dynamics of adjustment

Panel data are better able to study the dynamics of adjustment. Cross-sectional distributions that look relatively stable hide a multitude of changes.

5. Panel data allows us to construct and test more complicated behavioral models than purely cross-section or time series data.

3.1.3 Panel Data Regression Models

A panel data regression differs from a regular time-series or cross-section regression in that it has a double subscript on its variables, i.e.

$$Y_{it} = \alpha + X'_{it}\beta + u_{it} \quad i = 1, \dots, N; \quad t = 1, \dots, T \quad (3.1)$$

with i denoting observations and t denoting time. The i subscript, therefore denotes the cross-section dimension whereas t denotes the time series dimension. α is a scalar, β is $K \times 1$ and X_{it} is the i th observation on K explanatory variables. Most of the panel data applications utilize one-way error component model for the disturbances, with

$$u_{it} = \mu_i + v_{it} \quad (3.2)$$

where μ_i denotes the unobservable individual specific effect and v_{it} denotes the remainder disturbance. Note that μ_i is time-invariant and accounts for any individual-specific effect that is not included in the regression. In this case we could think of it as the individual's unobserved ability. The remainder disturbance v_{it} varies with individuals and time and can be thought of as the usual disturbance in the regression. In vector form (3.1) can be written as

$$y = \alpha \mathbf{1}_{NT} + X\beta + u = Z\delta + u \quad (3.3)$$

Where y is $NT \times 1$, X is $NT \times K$, $Z = [\mathbf{1}_{NT}, X]$, $\delta' = (\alpha', \beta')$ and $\mathbf{1}_{NT}$ is a vector of ones of dimension NT . Equation (3.2) can also be written as

$$u = Z_u\mu + v$$

where $u' = (u_{11}, \dots, u_{1T}, u_{21}, \dots, u_{N1}, \dots, u_{NT})$ with the observations stacked such that the slower index is over individuals and the faster index is over

time. $Z_{\mu} = I_N \otimes \mathbf{1}_T$ is an identity matrix of dimension N , $\mathbf{1}_T$ is a vector of ones dimension T and \otimes denotes Kronecker product. Z_{μ} is a selector matrix on ones and zeros, or simply the matrix of individual dummies that may include in the regression to estimate the μ_i , if they are assumed to be fixed parameters.

3.1.3.1 Fixed Effect Model

This model restricts the coefficients on x to be common across t and i . A less restricted form could allow the slopes to vary over time, across donor-recipient pairs or both. The assumption made about α_i has implications for the consistency and efficiency properties of estimates of β in equation (3.1). In an aid to trade equation the group-specific term reflects idiosyncratic preferences or characteristics of a donor-recipient pair. If the group-specific effect is assumed constant (but allowed to differ across units) the model is called a fixed effects (FE) model. Assuming heterogeneity across units equation (3.1) implies that the effect of all omitted variables is the same for a given cross sectional unit through time but varies across cross-sectional units for a given point in time.

3.1.3.2 Random Effect Model

The second estimator makes use of the idea that heterogeneity across units can be accounted for by treating the individual specific effects as random variables. Here the assumption is that the unit specific effects cannot be observed or measured and so represents ‘specific ignorance’ for the modeller and must be treated as part of our ‘general ignorance’. What this means is that the large number of factors that affect the value of the dependent variable but which are not explicitly accounted for in the model can be summarized by a random disturbance. If this assumption is made then we call it a random effects (RE) model. Hence in addition to a non-specific error term v_{it} there is also a group-specific error term μ_i . Equation (3.1) is, therefore, written as

$$Y_{it} = \mu_i + \alpha_i + X'_{it}\beta + v_{it}$$

3.2 Sampling and Source of Data

We took a sample of 36 countries drawn from the SSA based on convenience (availability of data). Our main data sources are the World Bank's World Development Indicators and Global Development Finance (both 2002, CD-ROM version), and the United Nations Conference on Trade and Development (UNCTAD, World Investment Report, various issues). Data on governance was obtained from World Bank and was prepared by Kaufmann *et al.* (2003) from 1996-2002 on biennials. The data was annualized to fit with the rest of the data set. This was calculated by taking the average of the previous and preceding years for the sample period.

3.2.1 Data Description

The thesis employs panel data of 36 countries in SSA for the period of 1996-2000 to analyze the impact of governance on FDI flows. The governance indicators data was made available since 1996 on biennial bases. Kaufmann *et al.* (2003) estimated and indexed the governance data and categorized them into six sub indices from various sources. The sub-indices are:

1. Voice and accountability
2. Political stability
3. Government effectiveness
4. Regulatory quality
5. Rule of law
6. Control of corruption

All these indices have been estimated from 31 different qualitative indicators from 13 different sources. Measurement error is the main drawback of these aggregate indicators of governance. These aggregates drawn from a variety of sources do not provide more precise measures of governance than individual indicators. The rest of the other variables are obtained from the World Bank's WDI CD-ROM (2002).

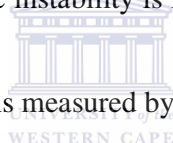
3.3 The Econometric Model

FDI= f (market size, trade openness, physical infrastructure, governance, macroeconomic stability).

FDI is the dependent variable and is represented by the ratio of FDI to real GDP.

The independent variables are:

- Market size is measured by real gross domestic product (GDP) per capita
- Trade openness is measured by the ratio of trade (import + export) to GDP
- Physical infrastructure is measured by the telephone lines per 1000 population
- Governance is measured by other six sub-indices (see in the above subtopic)
- Macroeconomic instability is measured by annual average inflation rate
- Human capital is measured by secondary school enrolment.



The model developed to assess the impact of governance on the FDI inflow to sub-Saharan Africa. The model has three components: the dependent variable, that is, FDI, vector of exogenous variables and the vector governance indices⁷.

$$\ln FDI_{it} = c + \alpha \ln GDP_{PERCAPITA_{it}} + \beta \ln CPI_{it} + \gamma \ln INFRA_{it} + \eta \ln OPENNESS_{it} + \lambda \ln SEC_{it} + \phi \ln RETURN_{it} + \mu \ln GOV_{it}$$

Where i is individual country and t is the year

Ln	=	log
GDP_{PERCAPITA}	=	market size
CPI	=	rate of inflation
INFRA	=	physical infrastructure

⁷ $\mu \ln GOV_{it}$ represents all the governance indices. These are regulatory quality, voice and accountability, political stability, rule of law, government effectiveness, and control of corruption. The indices are estimated individual against the other independent variables. As a result we have six estimates.

OPENNESS	=	trade openness
SEC	=	human capital
RETURN	=	rate of return on investment
GOV	=	vector of governance indices

The dependent variable

The dependent variable is the ratio of FDI to real GDP for country i at time t .

Explanatory variables

Market size: the size of the host market affects the amount of FDI flows. Large markets are more likely to attract FDI due to an expected stream of future returns. Conversely, small market size for some developing countries is considered as deterring FDI. Following conventional measure of market size, GDP will be used in constant US dollar.

Economic growth: economic growth is often found to significantly induce FDI inflows into a country (see Jun and Singh, 1996). Profit-maximizing foreign investors are attracted to fast growing economies in order to take advantage of future market opportunities. Growth is measured by the annual percentage of growth rate of GDP and is expected to affect FDI positively.

Inflation rate: as in many research, inflation is taken as a proxy to macroeconomic stability and is measured by annual percentage general price increase in the economies. Inflation is expected to affect GDI negatively.

Trade openness: many researches show that openness affects FDI positively. The measure used in the trade openness is the share of trade to GDP.

Secondary school enrolment: is used as a proxy to human capital. This is measured as the number of secondary school pupil per 1000 population.

Physical infrastructure: good infrastructure increases the productivity of investments and therefore stimulates FDI. As in many empirical studies, the member of telephones per 1000 population is used as a proxy to physical infrastructure. The expected estimated sign is positive.

Governance indices: the concept of governance cannot be measured by one index; thus the World Bank has developed six sub indices to account for the governance.

- Voice and accountability
- Political stability
- Government effectiveness
- Regulatory quality
- Rule of law
- Control of corruption

All these indices have been estimated from 31 different qualitative indicators from 13 different sources and are subject to measurement error (Globerman and Shapiro, 2003). Singh and Jun (1995) indicate their concern on the reliability of governance data.

3.4 The Estimation Technique

Fixed effect panel estimation is employed in estimating the model. The first reason is that it allows us to focus on changes with different units overtime. Second, the estimates remain unbiased even when data is missing for some time period for some cross-sectional units (see Asiedu, 2003). In this case, the panel data of 36 countries in SSA is considered.

A GLS fixed effect estimation technique is used in determining the impact of governance on FDI with some other controlling (independent) variables. FDI is regressed with every sub-index on the governance variables. As a result FDI is regressed against the six governance sub-indices along side the other controlling variables. We regressed the same variables in every estimation. We have six regression estimates.

CHAPTER IV: EMPIRICAL RESULTS AND DISCUSSIONS

The FDI model is estimated based on 36 unbalanced panel data of SSA countries for the period of 1996-2002 using fixed effect panel data econometric techniques.

The model estimated is:

$$\ln FDI_{it} = c + \alpha \ln GDP_{it} + \beta \ln CPI_{it} + \gamma \ln INFRA_{it} + \eta \ln OPENNESS_{it} + \lambda \ln SEC_{it} + \phi \ln RETURN_{it} + \mu \ln GOV_{it}$$

Table 2: Summarized results of the governance indices

	Coefficient	t- statistic
Control of corruption	-0.140350	-3.546421
Government effectiveness	-0.379160	-9.594779
Rule of law	-0.419545	-8.278264
Regulatory quality	0.686652	3.068405
Political stability	0.060903	0.453380
Voice & accountability	0.471045	7.779443

The purpose of the research is to estimate the effect of governance on FDI and to investigate the way through which good governance may be helpful to FDI. Particular emphasis was given to the governance variables, which are believed to be the main hindrance along other determinants in the sub-continent. The empirical results are summarized in the above table which shows the coefficient and the t-statistic, as well as the signs (see Appendix). The above table presents the results for the six governance variables. Most of the variables have the expected signs. Corruption, government ineffectiveness and lack of rule of law have a negative but significant effect on FDI on SSA while regulatory quality, political stability and accountability were positive but also significant with the exception of political stability. This is consistent with Schneider and Frey (1985) findings. In their empirical study they find a negative relationship between political stability and FDI. The results are also consistent with Naude and Krugell (2003), who used a different approach and econometric technique.

Naude and Krugell (2003), using the same Kaufmann *et al.* (2003) data set employed, find that most of the governance indicators are significant, apart from the regulatory burden and corruption and graft, which are not significant. Furthermore, they find out that only political stability has the right sign, indicating a negative relationship between political stability and FDI. The rest of the sub-indices accountability, rule of law, and government effectiveness show that more FDI has been taking place in countries with poor governance.

In addition, Globerman and Shapiro (2003) find out that the size of a national economy strongly conditions how attractive that location is to foreign investors. They also strongly support the notion that governance infrastructure has an important and direct influence on FDI. An additional influence suggested by them was that FDI would be more strongly affected by improvements in political governance in developing countries than in developed countries. Of the governance indicators, their evidence suggests that regulatory burden and government effectiveness are the most important determinants of FDI flows from all countries (both developed and developing countries).

While Morisset (2000) finds that the most important features of countries successfully attracting FDI are strong economic growth and aggressive trade liberalization. The above two empirical studies are consistent with the estimates in this research. Trade openness represented by the ratio of total trade to GDP is significant and positive determinants of FDI. Market size represented by GDP per capita is highly significant and positive in all the six estimates. In vast empirical studies market size has a significant and positive impact on FDI flows (see for example Asiedu, 2003; Schneider and Frey, 1985; Naude and Krugell, 2003; Blomstrom and Kokko, 2003; Bevan and Estrin, 2002; Borensztein *et al.*, 1998).

CHAPTER V: CONCLUSION

This mini-thesis has examined the determinants of FDI with especial emphasis to governance in Sub-Saharan Africa. In general, good governance has a partial impact on FDI with respect to SSA. The econometric estimates show that corruption, government ineffectiveness and lack of rule of law has a negative effect while political stability, good regulatory quality and accountability has a positive impact. One also should consider that trade openness, human capital and high GDP per capita has a positive impact. Correspondingly FDI has a positive overall effect on economic growth, although the magnitude of this effect depends on the stock of human capital available in the host economy.

The nature and the interaction of FDI with human capital in countries with very low levels of human capital, however, has a direct negative effect on FDI (Borensztein et al., 1998). Additionally, this paper finds out that macroeconomic instability has also a negative impact in the sub-continent. In the 1990s SSA countries have shown an improvement in institutions that promote economic growth in general and FDI specifically due to largely the introduction of multi-party democracy. These countries can only attract FDI by curbing corruption, developing more efficient public sector that ensures proper functioning of government institutions, and raising the level of political accountability.

But there are still some limitations to governance indicators in this research. First, it is difficult to generalize about the statistical impact of political governance attributes, in part because the attributes are measured in different ways, in different studies. Second, it is subject to measurement error. Singh and Jun (1995) indicate their concern about the impact of political stability on FDI, the reason being the difficulty to obtain reliable quantitative estimates in the long run. Moreover, although many previous studies adopt measures that are closely related to the idea of governance infrastructure, there has yet been no systematic attempt to directly relate governance infrastructure measures to FDI flows for a wide

cross-section of countries. This research is wide open for further research with different methodologies and techniques.



BIBLIOGRAPHY

Agrawal, P. (2000). Economic impact of foreign direct investment in South Asia. Bombay, India: Indira Gandhi Institute of Development Research

Asiedu, E. (2001). On the determinants of foreign direct investment to developing countries: is Africa different? *World development*, 30(1): 107-119

Asiedu, E. (2003). Foreign direct investment to Africa: the role of government policy, governance and political instability. Occasional Papers. Kansas: University of Kansas. [Online]. Available <http://www.people.ku.edu/~asiedu/Paper%20submitted%20World%20Economy2%20to%20Gearge.pdf> –

Balasubramanyam, V.N., Salisu, M. and Sapsford, D. (1996). Foreign direct investment and growth in EP and IS countries. *The economic journal*, 106(434): 92-105

Baltaghi, B. H. (2001). *Econometric analysis of panel data* (2nd ed). Chichester: John Wiley & Sons.

Barro, R. (1994). Democracy and growth. NBER Working Paper No 4909. Cambridge, MA: NBER



Bende-Nabende, A. (2002). Foreign direct investment determinants in sub-Saharan Africa: a co-integration analysis. *Economics bulletin*, 6(4):1-19

Bevan, A. and Estrin, S.(2002). The determinants of foreign direct investment in transitions economies. Draft paper. London: London Business School.

Blomstrom, M. and Kokko, A. (2003). Human capital and inward FDI. Working Paper No 167. Stochlohom, Sweden: Stockholm School of Economics.

Blomstrom, M. and Kokko, A. (2003). The economics of FDI incentives. NBER Working Paper No 9489. Cambridge, MA: NBER.

Borensztein, E., De Gregorio, J. and Lee, J-W. (1998). How does FDI affect economic growth. *Journal of international economics* 45(1): 115-35

Campos, J. E. and Lien, D. (1999). The impact of corruption on investment: predictability matters. *World development* 27(6): 1059-1067

Chowdhury, A. and Mavrotas, G. (2003). FDI and growth: what causes what? Paper presented at the WIDER Conference on “Sharing Global Prosperity”, Heliniski, 6-7 September.

- Cotton, L. and Ramachandran, V. (2001). Foreign direct investment in emerging countries: lessons from sub-Saharan Africa. WIDER Discussion Paper No 2001/82. Helsinki: United Nations University.
- DeMello, J.R. (1997). Foreign direct investment in developing countries and growth: a selective survey. *Journal of development studies*, 30:1-34
- Dunning, J. (1993). *Multinational enterprises and the global economy*. Reading, MA: Addison-Wesley Publications Co.
- Edwards, S. (1990). Capital flows, foreign direct investment, and debt – equity swaps in developing countries. NBER Working Paper No 3497. Cambridge, MA: NBER.
- Globerman, S. and Shapiro, D. (2002). Global foreign direct investment flows: the role of governance infrastructure. *World development*, 30(11): 1899-1919.
- Gradstein, M. (2003). Governance and economic growth. World Bank Policy Research Working Paper No 3098. Washington, D.C.: The World Bank.
- Hamdok, A. (2001). Governance and policy in Africa: recent experiences. Discussions Paper No 2001/126. Helsinki: World Institute for Development Economic Research, United Nations University. [Online]. Available <http://www.wider.unu.edu/publications/dpps/dp2001-126.pdf>
- Hausmann, R. and Fernandez-Arias, E. (2000). Foreign direct investment: good cholesterol? Inter-American development bank research development, New Orleans.[online]. Available <http://ksghome.harvard.edu/~rhausma.cid.ksg/WP/pubWP-417.pdf>
- Helpman, E., Melitz, M. J. and Yeaple, S. R. (2003). Export versus FDI. NBER Working Paper No 9439. Cambridge, MA: NBER.
- Hermes, N. and Lensink, R.(2000). FDI, financial development and economic growth. Groningen, the Netherlands: University of Groningen. [Online]. Available <http://www.ub.rug.nl/eldoc/som/e/00E27>
- Hsiao, C. (2003). *Analysis of panel data*. (2nd ed.). Cambridge, UK: Cambridge University Press.
- Jenkins, C. and Thomas, L. (2002). Foreign direct investment in southern Africa: determinants, characteristics and implications for economic growth and poverty alleviation. Oxford, University of Oxford: CSAE.
- Kandiero, T. and Chitiga, M. (2003). Trade openness and foreign direct investment in Africa. Paper presented at the Economic Society of Southern Africa 2003 Annual Conference, Cape Town, South Africa.

Kaufmann, D., Kraay, A., and Matruzzi, M. (2003). Governance matters III: Governance Indicators for 1996-2002. World Bank policy research department Working Paper No. 3106. [Online]. Available <http://www.worldbank.org/wbi/governance/wp-governance.htm>

Klein, M., Aaron, C., and Hadjimicheal, B. (2001). Foreign direct investment and poverty reduction. Paper presented at the OECD conference on New Horizons and Policy Challenges of Foreign Direct Investment in the 21th Century, Mexico City, November 26-27

Krugman, P. and Obstfeld, M. (1999). *International economics: theory and policy*. (5th ed.). New York: Addison Wesley Longman.

Lensink, R. and Morrissey, O. (2001). Foreign direct investment: flows, volatility and growth in developing countries. [Online]. Available <http://www.ub.rug.nl/eldoc/som/e/01E16/01E16.pdf>

Lim, E-W. (2001). Determinants of, and the relation between, foreign direct investment and growth: a summary of the recent literature. IMF Working Paper No 175. Washington, D.C.: IMF.

Lipsey, R. E. (2001). Foreign direct investment and the operations of multinational firms: concepts, history, and data. NBER Working Paper No 8665. Cambridge, MA: NBER.

Lucas, R.E. (1990). Why doesn't capital flow from rich to poor countries? *The American Economic Review*, 80(2):92-96

Marino, A. (2000). The impact of FDI on developing countries growth: trade policy matters. [Online]. Available <http://www.etsg.org/ETSG2000/Papers/Marino.pdf>

Mbekeani, K.K. (1997). Foreign direct investment and economic growth. Occasional Paper Series September Issue. Braamfontein, South Africa: National Institute for Economic Policy.

Morisset, J. (2000). Foreign direct investment in Africa: policy also matters. *Transnational Corporations*, 9(2):107-125

Morisset, J. and Neso, O.L. (2002). Administrative barriers to foreign investment in developing countries. World Bank Policy Research Working Paper No 2484. Washington, D.C.: World Bank. [Online]. Available http://econ.worldbank.org/files/15291_wps2848.pdf

Nair- Reichert, U. and Weinhold, D. (2000). Causality tests for cross-country panels: new look at FDI and economic growth in developing countries. [Online]. Available http://www.ciber.gatech.edu/workingpaper/99_00-12.pdf

Naude, W.A. and Krugell, W.F. (2003). Foreign direct investment in Africa: do institutions and geography matter? Paper presented at the Biennial Conference of the Economic Society of South Africa, Somerset West, Cape Town, South Africa, 17-19 September

Neumayer, E. and de Soysa, I. (2001). Trade openness, FDI and child labor. University of Bonn, Bonn: Center of Development Research (ZEF). [Online]. Available ideas.repec.org/p/wpa/wuwpit/0312001.html

Razin, A. (2002). FDI flows and domestic investment: overview. Prepared for the CES-Ifo Studies, July.

Schneider, F. and Fray, B.S. (1985). Economic and political determinants of foreign direct investment. *World development*, 13(2): 161-175

Singh, H. and Jun, K. W. (1995). Some new evidence on the determinants of foreign direct investment in developing countries. Working Paper Series No 1531. Washington, D. C.: The World Bank

Todaro, M. P. (2002). *Economic development*. New York: Addison Wesley Longman, Inc.

UNCTAD. (1999). Foreign direct investment in Africa's: performance and potential. New York and Geneva: United Nations.

_____. (2003). Foreign direct investment and performance requirements: new evidence from selected countries. New York and Geneva: United Nations.

Van Kiekerk, A.J. (2003). Africa's millennium: trade, investment and growth. Paper presented at the Biennial Conference of the Economic Society of South Africa, Somerset West, Cape Town, South Africa, 17-19 September.

Verbeek, M. (2000). *A guide to modern econometrics*. Chichester. John Wiley and Sons, Ltd.

World Bank. (2002). Global Development Finance on CD-Rom. Washington, D.C.: The World Bank.

World Bank. (2002). World Development Indicators on CD-Rom. Washington, D.C.: The World Bank.

APPENDIX I

FIXED EFFECTS RESULTS

1. CONTROL OF CORRUPTION

Dependent Variable: RFDIX?				
Method: GLS (Cross Section Weights)				
Date: 03/25/04 Time: 17:05				
Sample: 1996 2000				
Included observations: 5				
Total panel (unbalanced) observations 111				
White Heteroskedasticity-Consistent Standard Errors & Covariance				
Cross sections without valid observations dropped				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
CORR?	-0.140350	0.039575	-3.546421	0.0007
OPENNESS?	5.74E-12	7.05E-13	8.150447	0.0000
SEC?	9.57E-06	4.07E-06	2.354832	0.0210
INFRA?	-0.815306	0.055325	-14.73654	0.0000
CPI?	-0.046917	0.003667	-12.79566	0.0000
GDPPERCAPITA?	0.018514	0.004349	4.256946	0.0001
Weighted Statistics				
R-squared	0.935193	Mean dependent var		5.748796
Adjusted R-squared	0.910890	S.D. dependent var		6.767828
S.E. of regression	2.020286	Sum squared resid		326.5244
F-statistic	230.8855	Durbin-Watson stat		2.063009
Prob(F-statistic)	0.000000			
Unweighted Statistics				
R-squared	0.716014	Mean dependent var		1.942542
Adjusted R-squared	0.609519	S.D. dependent var		3.538076
S.E. of regression	2.210890	Sum squared resid		391.0428
Durbin-Watson stat	1.459058			

2. GOVERNMENT EFFECTIVENESS

Dependent Variable: RFDIX?				
Method: GLS (Cross Section Weights)				
Date: 03/25/04 Time: 17:06				
Sample: 1996 2000				
Included observations: 5				
Total panel (unbalanced) observations 111				
White Heteroskedasticity-Consistent Standard Errors & Covariance				
Cross sections without valid observations dropped				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
EFF?	-0.379160	0.039517	-9.594779	0.0000
OPENNESS?	7.14E-12	7.51E-13	9.506307	0.0000
INFRA?	-0.833374	0.039408	-21.14711	0.0000
CPI?	-0.056447	0.003273	-17.24875	0.0000
GDPPERCAPITA?	0.016870	0.005048	3.342148	0.0013
SEC?	7.47E-06	3.69E-06	2.023335	0.0464
Weighted Statistics				
R-squared	0.919154	Mean dependent var		5.683277
Adjusted R-squared	0.888837	S.D. dependent var		6.105510
S.E. of regression	2.035649	Sum squared resid		331.5094
F-statistic	181.9068	Durbin-Watson stat		2.127959
Prob(F-statistic)	0.000000			
Unweighted Statistics				
R-squared	0.717811	Mean dependent var		1.942542
Adjusted R-squared	0.611990	S.D. dependent var		3.538076
S.E. of regression	2.203882	Sum squared resid		388.5677
Durbin-Watson stat	1.462990			

3. RULE OF LAW

Dependent Variable: RFDIX?				
Method: GLS (Cross Section Weights)				
Date: 03/25/04 Time: 17:06				
Sample: 1996 2000				
Included observations: 5				
Total panel (unbalanced) observations 106				
White Heteroskedasticity-Consistent Standard Errors & Covariance				
Cross sections without valid observations dropped				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LAW?	-0.419545	0.050680	-8.278264	0.0000
RETURN?	0.017896	0.024715	0.724082	0.4713
SEC?	2.76E-06	9.16E-06	0.300709	0.7645
CPI?	-0.033134	0.004496	-7.369749	0.0000
OPENNESS?	4.79E-12	8.35E-13	5.738777	0.0000
INFRA?	-0.786536	0.074979	-10.49005	0.0000
GDPPERCAPITA?	0.026505	0.004665	5.681477	0.0000
Weighted Statistics				
R-squared	0.941115	Mean dependent var		5.150002
Adjusted R-squared	0.916447	S.D. dependent var		6.516288
S.E. of regression	1.883570	Sum squared resid		262.5399
F-statistic	197.1140	Durbin-Watson stat		2.084561
Prob(F-statistic)	0.000000			
Unweighted Statistics				
R-squared	0.716223	Mean dependent var		1.978083
Adjusted R-squared	0.597343	S.D. dependent var		3.613296
S.E. of regression	2.292827	Sum squared resid		389.0221
Durbin-Watson stat	1.451086			

4. REGULATORY QUALITY

Dependent Variable: RFDIX?				
Method: GLS (Cross Section Weights)				
Date: 03/25/04 Time: 17:07				
Sample: 1996 2000				
Included observations: 5				
Total panel (unbalanced) observations 111				
Cross sections without valid observations dropped				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
REG?	0.686652	0.223781	3.068405	0.0029
CPI?	-0.043274	0.011813	-3.663268	0.0004
OPENNESS?	7.33E-12	2.27E-12	3.236392	0.0018
SEC?	1.35E-05	1.34E-05	1.005543	0.3177
GDPPERCAPITA?	0.020607	0.010717	1.922907	0.0581
INFRA?	-1.306065	0.328046	-3.981351	0.0001
Weighted Statistics				
R-squared	0.966928	Mean dependent var		6.780432
Adjusted R-squared	0.954527	S.D. dependent var		9.564441
S.E. of regression	2.039570	Sum squared resid		332.7878
F-statistic	467.7984	Durbin-Watson stat		2.100449
Prob(F-statistic)	0.000000			
Unweighted Statistics				
R-squared	0.720413	Mean dependent var		1.942542
Adjusted R-squared	0.615568	S.D. dependent var		3.538076
S.E. of regression	2.193698	Sum squared resid		384.9848
Durbin-Watson stat	1.446264			

5. POLITICAL STABILITY

Dependent Variable: RFDIX?				
Method: GLS (Cross Section Weights)				
Date: 03/25/04 Time: 17:07				
Sample: 1997 2000				
Included observations: 4				
Total panel (unbalanced) observations 84				
White Heteroskedasticity-Consistent Standard Errors & Covariance				
Cross sections without valid observations dropped				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
STAB?	0.060903	0.134332	0.453380	0.6521
SEC?	1.12E-05	3.30E-06	3.383921	0.0014
INFRA?	-0.408424	0.141355	-2.889345	0.0056
CPI?	-0.025286	0.010449	-2.420047	0.0190
OPENNESS?	1.75E-12	8.18E-13	2.137802	0.0372
GDPPERCAPITA?	0.034182	0.007355	4.647350	0.0000
GDPPERCAPITA?(-1)	0.011712	0.008968	1.306040	0.1972
Weighted Statistics				
R-squared	1.000000	Mean dependent var		3.85E+15
Adjusted R-squared	1.000000	S.D. dependent var		3.77E+16
S.E. of regression	3.082484	Sum squared resid		503.5906
F-statistic	2.07E+33	Durbin-Watson stat		0.523116
Prob(F-statistic)	0.000000			
Unweighted Statistics				
R-squared	0.597912	Mean dependent var		1.864504
Adjusted R-squared	0.370316	S.D. dependent var		2.507000
S.E. of regression	1.989371	Sum squared resid		209.7527
Durbin-Watson stat	2.504504			

6. VOICE AND ACCOUNTABILITY

Dependent Variable: RFDIX?				
Method: GLS (Cross Section Weights)				
Date: 03/25/04 Time: 17:07				
Sample: 1996 2000				
Included observations: 5				
Total panel (unbalanced) observations 111				
White Heteroskedasticity-Consistent Standard Errors & Covariance				
Cross sections without valid observations dropped				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
VOICE?	0.471045	0.060550	7.779443	0.0000
OPENNESS?	5.89E-12	7.21E-13	8.167079	0.0000
SEC?	9.20E-06	4.25E-06	2.165442	0.0333
INFRA?	-0.717243	0.047418	-15.12606	0.0000
CPI?	-0.038611	0.003805	-10.14875	0.0000
GDPPERCAPITA?	0.017300	0.003139	5.511753	0.0000
Weighted Statistics				
R-squared	0.958623	Mean dependent var		6.349513
Adjusted R-squared	0.943106	S.D. dependent var		8.351361
S.E. of regression	1.991999	Sum squared resid		317.4449
F-statistic	370.6863	Durbin-Watson stat		2.032494
Prob(F-statistic)	0.000000			
Unweighted Statistics				
R-squared	0.716951	Mean dependent var		1.942542
Adjusted R-squared	0.610808	S.D. dependent var		3.538076
S.E. of regression	2.207237	Sum squared resid		389.7516
Durbin-Watson stat	1.446990			