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**The American University in Cairo
School of Global Affairs and Public Policy**

Foreign Direct Investment, Institutional Quality and Business Regulatory

Environment: Evidence from Africa

**A Thesis Submitted to the
Public Policy and Administration Department
in partial fulfillment of the requirements for the degree of
Master of Public Policy**

Submitted By

Nada Abdelghany

Under the Supervision of

Dr. Ghada Barsoum, Ph.D.

Chair Department Public Policy and Administration

Fall 19

Abstract

Foreign direct investment (FDI) plays a significant role in both the economic growth and development of a nation. Given Africa's development and economic characteristics, FDI is an attractive tool for economic development. Hence, understanding the key drivers of FDI is of major importance to help promote the sustainable development of the private sector. This thesis focuses on the interrelation between two key determinants of FDI inflows: institutional quality and the business regulatory environment, while controlling for economic determinants including the market and resource characteristics of a country. Using a panel of 46 countries for the period 2012-2016, a mediation analysis is employed to examine the relationship between an established governance index, as a proxy measure of institutional quality, using Worldwide Governance Indicators (WGI) and the doing business score developed by the World Bank (WB), as a proxy measure of business regulatory environment. The conditions of mediation analysis were tested using a number of multivariate log-linear regression models. The model is estimated using fixed effect panel regression analysis with robust cluster standard error to account for homoscedasticity and serial autocorrelation. The data on the included variables were gathered from publicly available resources. In line with literature such as Globerman and Sharpio (2002) and Gani (2007), the findings of the study regarding the relevance of governance index for FDI inflows showed a robust, consistent significance using different estimation techniques. However, contrary to the literature such as Piwonski (2010) and Morriz and Aziz (2011), the business regulatory environment did not demonstrate any robust significance to FDI inflows. Though these findings result in a statistical rejection of the main hypothesis, it does not constitute conclusive evidence that the business regulatory environment does not mediate the effect of institutional quality on FDI inflows within the African context. This is due to a concern regarding the validity of the doing business score validity as a proxy for the business regulatory environment.

To

*The 25th Jan Revolution,
My Mother, My Sister
My Person,*

&

To

*All the Women and Girls around the world who fight every day for
their dreams, their families and their lives.*

Acknowledgment

“Those who pursue a quest for knowledge, Allah shall ease their path to heaven”

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List of Acronyms

ADB	Asian Development Bank
AFDB	African Development Bank
EDB	Ease of Doing Business
FDI	Foreign Direct Investment
FPI	Foreign Portfolio Investment
GDP	Gross Domestic Product
GMM	Generalized Methods of Moments
HDR	Human Development Report
IDI	Infrastructure Development Index
IMF	International Monetary Fund
MNCs	Multinational Corporations
MNEs	Multinational Enterprises
OECD	Organization of Economic Cooperation and Development
OLS	Ordinary Least Square
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations development
U.S.	United States
WB	World Bank
WDIs	World Development Indicators
WGI	Worldwide Governance Indicators

Chapter 1: Introduction

There is a consensus amongst academics and practitioners that foreign direct investment (FDI) contributes to the economic growth and development of any given country, mainly due to capital accumulation and FDI spillover effects. This is particularly true for developing and emerging economies (OECD, 2002; Reisen and Soto, 2001). Consequently, maintaining enticing incentives that attract FDI inflows is a central concern on the national policy agenda, especially developing countries. This picked the interests of scholars in identifying the main determinants of FDI inflows and constructing governmental best policy practices to create a conducive FDI ecosystem.

The eclectic paradigm is recognized as a comprehensive conceptualization of FDI determinants that proposed location specific advantages, integrating it with internalization specific advantages and ownership advantages (Dunning, 1977, 1980, 1993). This paradigm pioneered a framework that integrated both micro and macro level factors responsible for influencing Multinational Corporation's (MNCs) decision to invest in a foreign country (Kinda, 2008).

Focusing on macro location specific advantages, a variety of studies investigated potential determinants such as trade openness, tax incentives, market size, natural resources endowment, human capital, macroeconomic stability, institutional quality and the investment climate (Jadhav, 2012). However, over the past two decades, scholars glorified investment climate role in attracting the lion share of FDI in developed countries. Based on Dunning (2003), it is argued that it is an important indicator for MNCs when deciding on their internalization specific advantages as directly contributes to transaction costs.

According to the International Monetary Fund (IMF), investment climate is defined as “a set of location specific factors shaping the opportunities and incentives for firms to invest in productivity, create jobs and expand” (Smith & Driemier, 2005, p.40). Mansoor et al. (2018)

pointed to the role of the business regulatory environment, as a subset of investment climate, in promoting the role of the private sector and hence attracting FDI in the country.

The European Bank for Reconstruction and Development (EBRD) defines investment climate as a variety of factors that incentivizes the occurrence of either domestic or foreign investment. According to the EBRD, these factors encompass suitable macroeconomic policies, sound economic and political institutions, effective legal and regulatory frameworks, infrastructure quality as well as other factors. Therefore, it considers institutional effectiveness, i.e. quality, as a key component in defining the goodness of investment climate, making it a key determinant of FDI (EBRD, n.d)

Due to the growing trend amongst scholars of focusing on the investment climate, the volume of studies dedicated to the two core elements of the investment climate (business regulatory environment and institutional quality) also increased. Such studies include Globerman and Sharipo (2002); Gani (2007); Piwonski (2010); Morris and Aziz (2011); Groh and Wich (2012); Jdhav (2012); Mongay and Filipescu (2012); Shahdan et al. (2014); and Jovanovic and Jovanovic (2017).

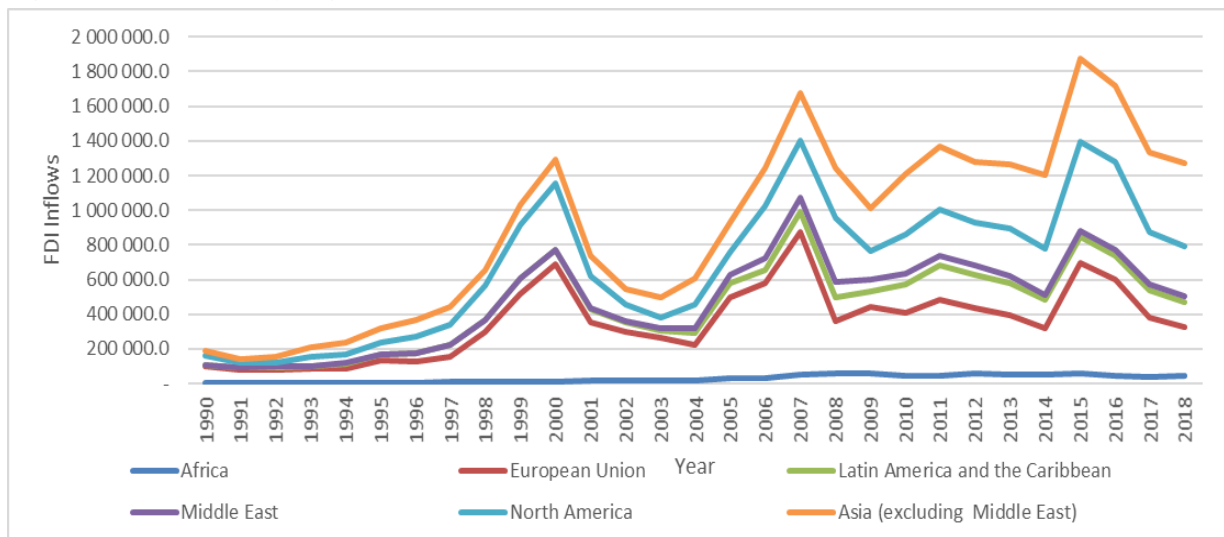
Most of these studies confirmed that both institutional quality and an adequate business regulatory environment are key incentives for FDI inflows. Although these studies empirically evaluated whether these elements matter or not, most of them studies were rudimentary in terms of how or why they matter. Moreover, as far as this study concerns, there is a lack of research on how these two factors interrelate in their effect on FDI, particularly in Africa.

This thesis aims to contribute to the literature by addressing this gap, in context of Africa. The interest in Africa is primarily due to a scarcity in studies that cover the region. Moreover, given Africa's unique development and economic characteristics (i.e. high unemployment, low economic growth and low human development index ranking, and the fact that out of its 54

countries, 33 are classified among the least developing countries), there is a demand for greater FDI. Hence, understanding the key factors driving FDI is of major importance to promote sustainable development tools that are related to the promotion of a private sector.

Figure 1 shows how FDI has developed over time. Generally, it has been exhibiting a relatively minor increase compared to the other regions.; Africa’s share has been increasing less than average over the past 30 years. This trend highlights the importance of understanding the determinants of FDI, the quality of those determinants in Africa and hence why FDI has thus far escaped the region compared to its peers.

Figure 1: FDI trends by Region (1990-2018)



Source: Constructed by Author using UNCTAD FDI data set (1990-2018)

1.1 Definition of Concepts

1.1.1 Foreign Direct Investment (FDI)

The World Bank (WB) defines FDI as “a category of cross-border investments in which an investor resident in one economy establishes a lasting interest in and a significant degree of influence over an enterprise resident in another economy”.¹ OECD quantifies such influence as a minimum of 10% of both enterprise ownership and voting power, where voting power

¹<https://datahelpdesk.worldbank.org/knowledgebase/articles/114954-what-is-the-difference-between-foreign-direct-inve>

represents their management role.² In addition to equity stake affecting the degree of influence, FDI components include investment in both indirectly and directly controlled enterprises, investment in debt and reverse investment.

The WB classifies FDI as Inward direct investment and Outward direct investment, where direct investment involve reallocation of both assets and liabilities. Inward investments are the direct investment at the resident/reporting country by foreign investors while outward investments are the direct investment of the resident/reporting country by local investors abroad (World Bank, n.d).

It is worth mentioning that foreign portfolio investment “FPI” is not a component of FDI, where the former constitutes passive investment in financial assets in the form of securities such as bonds and stocks while the latter constitutes investment in both financial and non-financial assets.

In other words, FPI is concerned with ownership and channeling funds only, while FDI is concerned with both ownership and management authority, alongside channeling funds, resources, innovation and technology knowhow.

This thesis focuses solely on Inward direct investment, hence any FDI connotation mentioned later implies inward direct investment. In the methodology section, an explanation of how FDI is measured in this study.

1.1.2 Governance

The notion of governance and its vital role in development was brought to attention and popularized in the WB’s (1989) long-term, perspective study on Sub-Saharan Africa. The report highlighted the role of governance in enhancing economic performance, along with

² https://www.oecd-ilibrary.org/finance-and-investment/foreign-direct-investment-fdi/indicator-group/english_9a523b18-en

private sector development and market mechanisms. In this study the WB defined governance as ***“the exercise of political power to manage nations’ affairs”*** (World Bank, 1989, p.60).

In 1992, the WB’s annual report on governance and development formally defined governance as ***“the manner in which power is exercised in the management of a country’s economic and social resources for development”***. The report stated three factors that conceptualize the notion of governance: the political regime, the government’s capacity and capabilities and also how authority is exercised. Later, WB (1994) listed four elements that could be used to evaluate governance: ***“public sector management, accountability, a legal framework for development, and information and transparency”*** (World Bank, 1994, p.XV).

The attempt to find an adequate definition of governance is not limited to the WB. Many development-oriented organizations have expended resources trying to define governance, as well as the key drivers which are responsible for its effectiveness, in pursuit of relevant criteria for a targeted plan to promote economic development.

In 1995, the Asian Development Bank (ADB) proposed governance as a system of sound development management, used to allocate both economic and social resources. ADB limited its scope to efficient management. Hence, the main factors that constituted governance were accountability, participation, predictability and transparency (ADB, 1995).

The UNDP defined governance as ***“the exercise of economic, political and administrative authority to manage a country’s affairs at all levels. It comprises the mechanisms, processes and institutions through which citizens and groups articulate their interests, exercise their legal rights, meet their obligations and mediate their differences”*** (UNDP, 1997).

In their 1999 policy paper, the AFDB defined governance as ***“a process referring to the manner in which power is exercised in the management of the affairs of a nation, and its relations with other nations”*** (OCED,1999, p.2). In the same paper, they put forward elements

of good governance as accountability, transparency, fighting corruption, stakeholder participation and the legal and judicial framework. Hence, governance encompasses both a political dimension and a management dimension (OCED, 1999).

The above, stated definitions are concerned with the qualitative identification of governance and its elements. Measuring governance, on the other hand, has been a key focus of the WB. In a long standing research program by the World Bank Institute (WBI) and Brookings institute, Kaufmann and Kraay produces annually the Worldwide Governance Indicators (WGIs) using the WB governance survey. To comprehensively capture different governance elements, Kaufman, Kraay and Mastruzi built on previous definitions of governance, particularly those of the WB and advanced the definition of governance to *“the traditions and institutions by which the authority in a country is exercised”* (Kaufmann et.al, 2011, p.4).

This definition captures 3 main elements of governance:

1. The nomination, accountability and replacement process of governments.
2. The Government’s effective aptitude to articulate and execute sound policies.
3. Citizens and state conformity to institutions ruling economic and social interactions between them.

The developed WGIs were proposed to measure the above elements using six dimensions. The six dimensions are: *“voice and accountability, political stability and absence of violence / terrorism, government effectiveness, regulatory quality, rule of law and control of corruption”* (Kaufmann et.al, 2011, p.4). An explanation of each dimension, along with each element it captures is provided in table 1.

Table 1: Illustration of WGI's six dimensions

Elements	Dimension	Explanation
Nomination, accountability and replacement process of governments	Voice and Accountability	Captures citizens' participation in election and freedom of speech, association and media.
	Political Stability and Absence of Violence/Terrorism	Captures perception of probability of government/regime destabilization and overthrown unconstitutionally or violently including terrorism and political violence.
Governments effective aptitude to articulate and execute sound policies	Government Effectiveness	Captures both public and civil services quality, in addition to their degree of independence from political pressures. It also captures the policy formulation and enactment quality, in addition to reliability of government's obligation to implement these policies
	Regulatory Quality	Captures government capacity to articulate and apply sound policies and regulations that endorse private sector development.
Citizens and state conformity to institutions ruling economic and social interactions between them	Rule of Law	Captures perceptions on both the confidence and conformity limit of the society rule with focus on contract enforcement quality, property rights, crime and violence chances, and police forces.
	Control of Corruption	Captures perceptions of the level to which public power is exercised for private gain. This includes both minor and major forms of corruption.

Source: Kaufmann et al. (2011, p.4)

The above part emphasized on the contribution of international organizations to the definition of governance, however academics also have their share of contribution to the governance definition and what it entails. From an academic perspective, the meaning of governance in modern society is a highly contended subject. The overarching consensus is that there is no clear definition. Peters (2012) asks whether analyzing governance is of any use given the word's vagueness and ambiguity, although they acknowledge it is a key issue for any society, given that there is a clear need for collective action on some issues which are beyond the capabilities of any single individual (e.g. overpopulation, resource allocation). However, this inherent ambiguity has not stopped the surge of scholars approaching governance with different focal points, usually related to the political institutions in charge of administering policy (Pierre & Peters, 2005).

For instance, Oxborne and Gaebler (1995) look at governance as the “business of government”, whereas Fukuyama (2013) tackles governance by concentrating on the implementation of public policy as opposed to the formulation of it by political actors. The author does this by separating political ideology from the practical application of government, allowing him to theorize about their empirical relationship. This is in contrast to Peters (2012), who seems to suggest ‘good governance’ is linked to an open, democratic political system.

In the same paper, Fukuyama clearly tackles governance from a pragmatic perspective, focusing on the features of actually carrying out policy. Fukuyama looks at governance through 4 objective measures: inputs, outputs, procedures and the degree of bureaucracy.

Pierre and Peters (2005) also condense governance into 4 elements, although their factors are staged and goal-oriented. They suggest governance first involves codifying societal objectives into policy goals; Then, balancing these goals in order to create prioritized policy agendas; finding ways to achieve these goals and finally, holding the implementers accountable to society at large. These two authors showcase two common, yet distinct, methods of measuring governance found in the literature: practical and objective vs political and subjective.

In another paper, Fukuyama (2016) further highlights the practical aspect of governance by suggesting public administration and governance are equivalent terms. In addition, he also went on to emphasize the role of non-governmental actors in governance. Indeed, a greater number of NGOs, think tanks and supranational organizations (e.g. European Union) are involved in the political process. However, Fukuyama also brings up the importance of domestic networks (e.g. pressure groups, activists) for monitoring social conduct. So although an initial inspection of governance suggests it is associated with the actions of a formal government, some authors highlight the role of non-state bodies as well. Stoker (1998) seems to validate this idea. Stoker implies the heightened academic interest in governance is a result of an exploration into

whether, in this day and age, the resource allocation function of governments is actually worth the resource commitment, bureaucracy and risk of corruption.

In summary, scholars seem to agree on the fact Governance has come to convey nothing at all (Colebatch, 2009). Instead, it is used as a blanket term to describe all the elements involved in public administration, whether they be the actors, practices or measurement tools.

Given the scope of this thesis, it adopts Kaufmann et al. (2011) definition on governance. This is to better accommodate the data and measurement tools employed to quantitatively measure governance, which serve as key components for the author's research and addressing the research question.

1.1.3 Ease of Doing Business

The ease of doing business "EDB" is an index developed by the WB annually, since 2003. It is traced back Djankov et al. (2002) journal paper on "the regulation of entry" which measured the ease of market entry in terms of cost and procedures for start-ups and related it to corruption. EDB is not an economic indicator that reflects inflation or market growth, it is concerned mainly with measuring the efficiency of regulations that are affecting business operations directly.

The EDB assesses 10 topics, using 41 indicators for all of them. These 10 topics are starting a business, dealing with construction permits, paying taxes, getting electricity, trading across borders, registering property, enforcing contracts, getting credit, resolving insolvency, and protecting minority investors. Most of the used sub-indicators are to measure procedures complexity, time and cost. The index provides two measures: EDB score and EDB rank.

The EDB score, known before as 'distance to frontier', measures the difference between a country's business regulatory performance and business regulatory best practices. EDB rank measures a country's performance relative to each other, providing cross countries comparison.

The thesis utilizes only 8 topics of the EDB score to be used as a proxy of the business regulatory environment as shall be furtherly elaborated in the conceptual framework.

1.2 Research Objective and Approach

The research objective of this thesis is explanatory, where the researcher attempts to explain how governance relates to FDI with a focus on African countries. The approach adopted involves using the OLI paradigm and North's theory of institution to study the interrelation between institutional quality and business regulatory environment on FDI. Institutional quality is conceptualized using Kaufmann et al. definition of governance and is operationalized by a governance index, constructed by the researcher using WGIs. Business facilitation is conceptualized by the business regulatory environment and measured by the WB's EDB score. Both measures are used to investigate the effect of both institutional quality and business facilitation, respectively, on FDI inflows, whilst controlling for relevant economic determinants.

The thesis conducts a panel analysis of 46 African countries over the span of five years (2012-2016) using secondary data from key organizations such as WB, African Development Bank (AFDB), United Nations Development Programme (UNDP) and International Labour Organization (ILO). To further the analysis, mediation analysis developed by Baron and Kenny (1986) is also employed to address the research question and test the research hypotheses stated in the following section.

1.3 Research Question and Hypothesis

1.3.1 Research Question

How does the business regulatory environment, measured by doing business score, affect the relationship between FDI inflows and the institutional quality, measured by governance?

1.3.2 Main Hypothesis

The main thesis hypothesis is that *“Business regulatory environment mediates the relationship between institutional quality and FDI inflows.”*

1.4 Thesis Outline

This thesis is divided into 6 chapters. The first chapter presents the introduction to the thesis, highlighting the research objective and question. The second chapter delves into previous theoretical studies on FDI determinants, with a focus on institutional quality and the business regulatory environment. Empirical studies with a similar focus are also investigated. The third chapter defines the conceptual framework adopted in the thesis. The fourth chapter describes the data used in the analysis as well as their sources. It also identifies the methodology used to address the research question. The fifth chapter presents and discusses the findings of the analysis. The sixth chapter concludes the thesis with policy recommendation and further research.

Chapter 2: Literature Review

There are numerous studies that focus on analyzing FDI determinants, which are the subject of this chapter. The chapter contains four sections. The first section begins by thoroughly addressing the different theoretical approaches of the studies, which include both conventional and modern theories spanning from Tobin (1958) to Dunning (1993). The second section shines a light on empirical studies, which focus mainly on institutional quality and the business regulatory environment. The third section briefly addresses the relationship between institutional quality and the business regulatory environment. The chapter concludes with the fourth section identifying existing literature gaps and potential research questions that need to be addressed.

2.1 Theories on FDI Determinants.

Multiple theories have been developed to explain what drives firms into investing in different host countries. These theories have different approaches in addressing the question of what determines FDI, which can be classified into two main waves: conventional and modern.

2.1.1 Conventional Theories

Conventional theories were pioneered by three main approaches that emerged between 1930s and 1960s. The three approaches are:

- The trade and comparative advantage approach tracing back to the neoclassical theory of international trade and Hecksher Ohlin model (1933)
- Finance theories and the international capital movement approach introduced during the mid- 1930s by Iversen (1936)
- Firm-specific approach developed by Hymer (1960) and Vernon (1966).

This section will illustrate the different approaches elaborating on the different theories that developed under each approach.

2.1.1.1 Trade and Comparative Advantage Approach

The first attempt to explain FDI inflows relied mainly on the classical trade theory, demonstrated by Ricardo's model (1817) on comparative advantage to explain international trade (Hosseini, 2005). The Ricardian model assumed a model of two countries, such that each country produces one product that it has comparative advantage in it, under perfect competition, using immobile labor resource. In addition, the model assumed zero transaction and transportation cost. However, the simplistic form of Ricardian model and its assumptions—such as labor being the only relevant production factor, which is also immobile – do not allow for the existence of FDI (Ozwa, 1992).

The Heckshar-Ohlin trade model built on Ricardo's work such that it moved from classical trade theory to neoclassical trade theory by considering other production factors in addition to labor only. Yet, it still failed to replicate empirical conditions as it kept both the immobility assumption of production factors and the perfect competition assumptions (Ozwa, 1992; Chaudhuri & Mukhopadhyay, 2014).

Notably, Mundell (1957) eased the factors immobility assumption of the Heckshar-Ohlin model in an attempt to explain FDI, however, he focused only on capital mobility. This resulted in a shortfall in explaining FDI as by definition capital movement is concerned with portfolio foreign investment not production foreign investment. Accordingly, the suggested comparative advantage based model failed to explain FDI as it did not allow for the mobility of non-financial factors of production, which are a substantial pillar of FDI (Minabe, 1977)

Kojima and Uzawa's (1984) attempted a different approach in explaining FDI. They attributed a country's FDI to having a comparative disadvantage, while exports were attributed to a

country's comparative advantage. This means that FDI moves from source countries with a comparative disadvantage in production/industry to host countries with a comparative advantage in production/industry (Minabe, 1977; Hosseini, 2005). While the Kojima and Ozawa's model represent the first attempt to separate between exports and FDI under the trade approach, it still lacked the mapping of the real economy as the assumption on absence of transactional costs remained. Given such a shortfall, another approach was sought to understand the reasons of FDI inflows.

2.1.1.2 Finance and Capital Movement Approach

Under the umbrella of this approach emerged three main theories. Initially, FDI inflows were attributed to the theory of differential rates of return on capital investment by Iversen (1936). Iversen (1936) explained that capital move to countries offering high interest rate to countries offering lower interest rate. However, this theory showed its limitation when the United States (U.S.) FDI in Europe persisted despite a decline in the rate of return in Europe compared to the U.S. (Hufbauer, 1975).

Later, Tobin (1958) and Markowitz (1959)'s portfolio diversification theory, initially developed for securities diversification, looked at the FDI allocation decision from a risk minimization and return maximization perspective. Accordingly, companies' decision on capital reallocation incorporated lowering concentration risk in one market, while accounting for the rate of return simultaneously (Moosa, 2002).

Given that countries have different currencies, Itgaski (1981) and Cushman (1985) then incorporated exchange rate factor in the portfolio diversification theory. They explained FDI flows by stating that countries with stronger currencies would be the FDI source to countries with weaker currencies as both the production and transactional costs shall be lower given the exchange rate disparity. While the factors incorporated under this approach matters to FDI,

these theories focused on the movement of financial assets only, resulting in its adequacy for explaining FPI as FDI incorporate both financial and non-financial assets (Denisia, 2010).

2.1.1.3 Firm-Specific Approach

Hymer (1960) led a breakthrough in the analysis of FDI determinants by shifting the focus from finance and trade to the analysis of firms. This approach is more microeconomics-focused, as macroeconomics variables are not explicitly included. In addition, this approach assumes market inefficiencies, addressing the limitation of the first approach. Moreover, Hymer's approach is the pioneer in identifying FDI as "international production" addressing the limitation of capital approach that is focused on capital, i.e. financial assets, movement only (Dunning & Rugman, 1985).

According to this approach, FDI occurs due to reasons associated with firm-specific advantages of asset ownership in terms of technology, knowledge management and market failures. Hence, a company would operate in a foreign country when its specific advantages makes up for the cost of conducting business in the host country.

In line with Hymer, Vernon (1966) presented the production cycle theory in which he identified four production stages: innovation, growth, maturity and decline. He explained that the source company first invents a new product and introduces it to the local market; then in the growth stage, production increases in response to the demand of the local market and the surplus is exported to foreign countries, which are of the same or higher income level than the source country, creating competition. In the maturity stage, demand stabilize and profit margins decline but high volumes of production and low cost make up for that. In the decline stage, after the peak of maturity, revenues decline where it is no longer economically attractive to invest. At the declining point, companies start seeking alternatives to minimize costs by moving production to a country with lower labor costs while simultaneously creating new products for their local market (Hosseini, 2005; Denisia, 2010).

Although this approach highlighted the firm-specific viewpoint, it completely neglected the host country perspective and potential locational determinant. This shortfall is addressed in the modern theories.

2.1.2 Modern Theories

This new wave of theories came about as a further development of Hymer's approach, accounting for the shortcomings of his theory. Two main approaches emerged: internalization and transactional costs by Buckley and Casson (1985) and the eclectic paradigm of foreign direct investment by Dunning (1977).

2.1.2.1 Theory of Internalization and Transaction cost

Buckley and Casson (1985) intellectualized the internalization theory of Multinational enterprises/companies "MNEs"/ "MNCs" and Casson (1985) reformulated the theory to be inclusive of the transactional cost aspect between consumer and producer. Internalization refers to cost-effective transactions within the enterprise rather than through the market.

Rugman (1980) utilized the theory to understand the determinants of FDI, where he explained that market failures/imperfections nudge companies to internalize their transactions within the firm across different national boundaries rather than establish business transactions between two different companies across different national borders.

2.1.2.2 The Eclectic Paradigm

Dunning (1977, 1979, 1988) introduced the ownership, location and internalization "OLI" paradigm, formally known as the eclectic paradigm, as an attempt to formulate a cohesive theory of FDI flows. "O" stands for ownership specific advantages, "L" stands for location specific advantages and "I" stands for internalization specific advantage.

As highlighted before, ownership is concerned with management and technology knowledge, whereas internalization considers transaction costs within the firm. This makes both of them

firm-specific determinants. Location specific advantages, on the other hand, refers to characteristics of the host country in terms of policy framework, economic determinants and business facilitation (UNCTAD, 1998). Accordingly, FDI only occurs if these three advantages are attained together (Kurtishi-Kastrati, 2013).

According to UNCTAD (1998), the policy framework mainly encompasses different aspects related to economic policies such as rules of Entry and Operations, market policies and structure, international agreements on FDI, trade policy and tax policy. The economic determinants are classified based on market, resource and efficiency seeking, while business facilitation aspect is concerned with investment services and facilitation such as investment promotion, investment incentives, hassle costs and post investment services (UNCTAD, 1998, p. 91).

Looking more in-depth into economic determinants, market seeking is focused on market characteristics such as size, growth, structure and access to external markets. Resource seeking dimension element focus on labor, natural resources, technology and infrastructure availability, while efficiency Seeking is concerned with the cost of seeking these resources (UNCTAD, 1998, p.91).

Table (1) summarizes different elements of FDI determinants under the three aspects considered by UNCTAD to provide a clear visualization of UNCTAD operationalization method of the OLI paradigm. This operationalization resulted in a shortfall, mainly because the he policy aspect focused solely on economic and business dimensions.

Table 2: UNCTAD criteria of host country determinants of FDI

Aspect	Elements
Policy Framework	Economic, political and social stability Rules of Entry and Operations Market policies and structure International agreements on FDI Trade Policy Tax Policy
Economic determinants	Market Seeking: Market size, growth, structure and access to external markets Resource Seeking: Labor, Natural Resources, Technology & Infrastructure availability Efficiency Seeking: the cost of resources seeking
Business facilitation	Investment promotion Investment incentives Hassle costs ³ Post-investment services

Source: UNCTAD World Investment Report (1998, p. 91).

North (1990) introduced the notion of institutions and its effect on country's economic performance. He pointed to the effect of institutional quality on FDI inflows with a focus on investments transactional cost, while also accounting for the effect on production costs. According to North (1991), institutions are "humanly devised constraints that structure political, economic and social interactions". These constraints consist of explicit legislation and unofficial socio-political norms, which are influenced by the strength of a country's institutions. Indeed, North argued that by facilitating exchange between market participants, institutions are a key driver of economic development, free trade and free movement of factors of production.

North's 1991 paper suggests that once a society grows beyond a simple barter system relying on the strong social bonds between citizens living in close proximity to each other, transaction costs develop. These costs relate to increasingly larger physical distances between market participants; the enforcement of contractual terms and the protection of intellectual property. The existence of these costs necessitates institutional oversight and hence promote institutional development within the country.

³ UNCTAD (1998) defined hassle cost as cost related to corruption and administrative inefficiency

Interestingly, a year later, North (1992) published a paper stating that the political aspirations of those who govern these institutions may mean that political aspirations are prioritized above the welfare of society at large. Hence, suggesting the minimization effect on transaction costs may not be as potent as originally thought. Nonetheless, North's ground-breaking work introduced a new non-economic element – institutional quality – under location specific advantages. This drew the attention of scholars towards the effect of governance and corruption on institutional quality and hence on attracting FDI. Dunning (2003) supported North's institutions theory as he emphasized that MNCs strategic thinking became directed towards efficiency seeking rather than market and resources seeking.

As the scope of this thesis is the host country characteristics, this thesis focuses on the last two theories under the modern umbrella. The next section brings to the forefront different empirical studies concerned with the determinants of FDI in the host country.

2.2 Empirical evidence on FDI determinants

There is abundant literature which provides empirical evidence on the factors affecting FDI determinants. For instance, UNCTAD produces an annual report on FDI trends and development that tackles factors affecting its movement around the world since 1991. Generally speaking, Empirical literature on FDI determinants can be divided into two schools. A school concerned with the micro level of FDI, highlighting how certain factors shape firms' decisions to invest in a foreign economy. Another school is concerned with the macro level of FDI, where the studies under its umbrella focus on the country-specific characteristics that attract FDI on an aggregate level (Groh & Wich, 2012). The macro level school defines the scope of this thesis.

2.2.1 Economic Determinants of FDI

Ample number of studies focus on the various variables affecting FDI at a macro level. Fortunately, some of these studies conducted a comprehensive survey of these variables (see for example, Moosa & Cardak, 2006, p.202). These different variables include market size, population size, wages, trade barriers, growth rate, openness, trade deficit, exchange rate, taxes, corruption, country risk and inflation (Moosa & Cardak, 2006; Mengistu & Adhikary 2011; Jadhav, 2012).

A wave of literature has paid attention to the role of fiscal incentives and consensually concluded that tax-related incentives are substantial element for FDI attraction (UNCTAD, 2000; Buttner & Ruf, 2005; Cleeve, 2008). However, these studies also acknowledged that the role of tax incentives, per se, is secondary to other vital determinants that must exist for tax incentives to achieve its objective. These vital determinants include proper institutions, macro-economic stability, regulatory environment, and investment barriers operationalized by administrative cost in terms of red-tape and bribery (UNCTAD, 2000; Rajan, 2004).

2.2.2 FDI and Institutional Quality

Following North's 1990 theory on the role of institution, the relationship between FDI inflows and governance has been extensively studied. This section sheds the light on some of the studies addressing this relation with focus on the studies that adopted quantitative research methods. The section showcases the different elements and measures of governance used in these studies, the control variables, the methodology adopted and the main findings of them.

In the late 1990s and early 2000, the literature witnessed the introduction of a number of studies which picked up on the importance of institutional determinants on FDI inflows for host countries.

Lankes and Venables (1996) found that the strong institutional and legal infrastructure influenced the scope of vertical FDI and also lowered the risk profile of investments in the host country. Indeed, host countries with more developed infrastructure benefitted from not only greater FDI flows, but with more consistent and successful investments. These authors also advocate investing in structural reforms to progress the level of infrastructure and attract greater FDI.

A study by Bende-Nabende and Ford (1998) studied the role of economic institutional quality as an endogenous stimulus for FDI. They measured institutional quality by the liberalization of both fiscal and monetary policy in Taiwan, in addition to infrastructure development. They concluded the importance of these two elements to FDI using a dynamic model between 1959-1995.

Similarly, Altomonte (2000) conducted a panel analysis of 2,500 MNC investments in Central and Eastern Europe (CEE) host countries from 1989-1996. The study considered the institutional determinants of FDI inflows, alongside the more typical macroeconomic variables and found that they were also significant in determining the pattern of FDI inflows. Altomonte suggested that the legal environment of CEE is one of the key factors behind boosting FDI flows in the future.

Mengistu and Adhikary (2011) studied the relationship between FDI inflows and good governance using the WGI as a measure of good governance. Using a panel from 1996-2007, their study focused on 15 Asian economies. Their model discretely included six dimensions, while accounting for other multiple factors. These factors include market size, human capital, local investment, infrastructure, lending interest rate, economic openness, labor force, GDP growth and natural resources endowment. Fitting a log-level fixed effect model, they concluded that only political stability, rule of law and government effectiveness are significant robust

governance factors. Among the control variables, only infrastructure and lending interest rate had a significant robust effect over FDI inflows.⁴

To assess the importance of institutional and corporate governance compared to economic incentives, Fazio and Talamo (2008) used a two step gravity model of trade approach.⁵ This controlled for standard economic factors affecting FDI inflows such as wages, taxes, GDP, population and others. In order to have a comprehensive measure of governance, they operationalized governance using a triangulation of different indices from a number of sources. They used a shareholder protection variable developed by La porta et al.(2000) and they also included WGIs. Moreover, they added other indicators developed by Kaufmann et al. (2004) that capture defacto governance and an index of administrative openness. Using a panel of 61 countries which are FDI host from OECD source countries across the period 1980–2003, their findings indicated the significant impact of both de jure and de facto institutional governance on attracting FDI flows. Their findings are robust to the existence of lower wages and taxes as alternative incentives for FDI.

In line with the previous study, Subasat and Bellos (2012) studied the relationship between FDI and governance in 14 transition economies using a two step gravity model approach. They primarily investigated the direct relation between governance and FDI in the 1st step. Then, they introduced the governance difference level between the host and source country in the 2nd step. In their study, they measured governance using the PRS Group International Country Risk Guide data on law and order, bureaucratic quality, democratic accountability and corruption. Unlike the previous studies, they found that the lack of governance attracts FDI.

⁴ Robustness is concluded based on fitting two other econometric models that provided consistent findings over these variables with the fixed effect fitting.

⁵ Gravity model approach is an international economics trade model that analyze bilateral trade and FDI flows based on both countries' economic sizes and geographical distance. It was firstly introduced in 1954 by Walter Isard

Testing the robustness of their findings, Subasat and Bellos (2013) conducted a similar study on a panel of 18 Latin American countries across 1985-2004. Their findings validated the findings on the transition economies, which imply that, on the contrary, poor governance attracts FDI.

Another study by Groh and Wich (2012) analyzed governance effect in emerging markets on FDI inflows. They derived a composite index of FDI attraction for 127 countries where they included business environment, economic activity, infrastructure, and legal and political system as a definition of governance. They measured governance using only 4 indices of the WGI, where they excluded voice and accountability and included corruption as an indicator for the business environment. Based on their findings, they argued that the reason why developing and emerging economies attract less FDI than developed countries, on average, is due to the poor legal and political system as well as poor infrastructure.

Jadhav (2012) studied the economic, political and institutional determinants of FDI in Brazil, Russia, India, China and South Africa, formally known as the BRICS nations. He conducted a panel study spanning a period of 10 years 2000-2009, using pooled multivariate regression and panel root test. Their model encompassed market size, trade openness and natural resources as economic determinants as well as inflation rate as a measure of macroeconomic stability. In order to measure the institutional and political determinants, he used WGI and included each dimension separately in the model. The study found that the two significant dimension of governance are rule of law and voice and accountability. Moreover, both market size and trade openness were of significant effect. His findings confirmed that economic determinants are of more relevance to FDI inflows than both political and institutional determinants.

All the previous studies have included the dimensions of governance as separate variables in the model; however, this raised a collinearity concern due to their interrelations. Therefore, to account for multicollinearity in studying governance impact on both inwards and outwards

FDI, Globerman and Sharipo (2002) combined the six dimensions in one index. Using 114 countries, they averaged FDI flows between 1995-1997. Their model controlled for human capital and GDP. They found a significant effect for the governance index; however, transition economies demonstrated higher governance impact.

Following the same approach of accounting for the collinearity issue, Gani (2007) analyzed each governance dimension impact in a separate model. Using pooled OLS for a panel data of 46 economies from Asia and Latin America over 4 years, he deduced that only voice and accountability indicator is of insignificant effect on FDI, implying that the remaining 5 dimensions' matter for FDI.

Using the same method of analyzing each dimension, Gangi and Abdulrazek (2013) studied the relationship between the six dimensions of governance, separately, and FDI inflows in a panel of 50 African countries over 1996-2010. Using both fixed effect and random effects estimation, they concluded a robust significant effect of three dimensions only. These dimensions are voice and accountability, government effectiveness and rule of law.

To conclude, the wave of literature on relationship between governance and FDI has established an agreement on the existence of a significant relationship between both variables. Still, there has been a shortfall as there is no consensus on which institutional quality dimensions are the most significant and the direction of the relation.

2.2.3 FDI and Business Regulatory Environment

The Business regulatory environment of the host country constructs a location-specific advantage that is a direct element of investment climate. The release of the EDB index by the WB marked the beginning of a new wave of literature. This wave focuses on studying the business regulatory framework as an incentive scheme that creates an attractive investment

climate for FDI inflows. This section provides an illustrative sample of these studies with a focus on the used sub-indices of EDB, how they were used in the model and the main findings.

Piwonski (2010) studied the relation between the aggregate rank of doing business and the FDI inflows of countries included in the WB Survey over 2004-2010. Her study used the EDB index as a proxy for the incentives that governments adopt to attract FDI. She concluded that enhancing a country's doing business rank one level, increased FDI flow by \$44 million USD using pooled OLS regression analysis.

Morris and Aziz (2011) investigated the relationship between factors that affects conducting business and FDI inflows to 57 Sub-Saharan African and Asian countries over six years 2000-2005. Using the correlation coefficient, the study provided mixed evidence to support a robust correlation. The overall EDB index was only significant for the year 2000, factors of enforcing contracts and closing business were significant for four years. The ease of credit factor showed significance in just in one year. Only trading across borders and registering a property showed significance for the whole period. Moreover, upon segregating the findings over Sub-Saharan and Asian countries, it was found that EDB is insignificant for FDI inflows in Asian economies over the span of six years.

Bayraktar (2013) analyzed the role of EDB in changing the direction of FDI in the outset of the financial crisis using correlation measures. Analyzing all countries included in the index during 2004-2010, she concluded that better EDB score attracts more FDI. However, this effect has partial explanatory power for developing countries.

Gillanders and Corcoran (2015) used the EDB as a proxy to understand the effect of the business regulatory environment. They studied the average of FDI inflows over the period between 2004-2009 for countries in the doing business report in 2009. They concluded that even though the aggregate level of EDB is significant determinant of the FDI inflows, this

conclusion is only valid for middle-income countries. In addition, they attributed that significance to the “trading across borders” factor.

Investigating the same relation in six Asian economies for the period 2004-2013, Shahadan et al. (2014) concluded that FDI is attracted to a better rated business environment. Analyzing the factors of the EDB, they found that all factors are significant contributors except for paying taxes and resolving insolvency or closing business in the region.

Vogiatzoglou (2016) findings were in line with previous studies regarding the relevance of doing business to FDI in South East Asian countries. However, only 7 indicators from the 10 indicators that composes the EDB index were identified as relevant to the business regulatory environment in the model. The main contribution of the study is investigating the significant sub-indicators under each of the thematic indicators in the model.

Jovanovic and Jovanovic (2017) also investigated the relationship between the 10 indicators of the WB’s EDB indicators and FDI inflows in 27 ex-socialist countries from 22 OECD countries over the period of 2004-2011. Only three indicators showed significant impact using two econometrics techniques. While both the ease of paying taxes and enforcing contracts were significant in one of the two models, only the ease of trade across borders showed significant robust effect on FDI.

In order to account for the structural instability that occurred due to the global financial crisis, the scholars refit the models for two separate period group 2004-2007 and 2008-2011. Moreover, DBI showed more significance in the earlier period implying that the weak effect could be attributed to the crisis then.

In a study by Blanchet (2006), He analyzed the relationship between FDI inflows in France over 2005-2006 and EDB. He compared between them using the aggregate ranking in the model and using the separate ranking of the factors composing the index. He concluded that

the aggregate ranking is a more accurate predictor for FDI than each factor separately. However, as his study spanned only one country for two years, there is no conducive evidence to support the robustness of his findings.

Based on the above studies, there is a common tendency toward considering the EDB index as a proxy for the business regulatory environment. While a study by Pinheiro-Alves and Zambujal-Oliveira (2012) concluded that the WB indicator is neither a consistent measure for the business environment nor an adequate descriptive power, EDB is the sole universal quantitative measure for business regulatory environment. This gives it the advantage of being suitable for international comparison.

To conclude this section, most studies varied between studying the overall index, the 10 sub-indices or both; however what is more important is the inconsistency of evidence on the role of EDB. Moreover, there is no consensus on the relevance of sub-indices.

2.3 Institutional Quality and Business Regulatory Environment

Unlike the studies on the relation between FDI and institutional quality or business environment, there are limited number of studies on the interrelation between both of these determinants. A study by Mongay and Filipescu (2012) examined the relation between institutional quality and the business regulatory environment for 172 nations. The measures used were the corruption perception index and EDB rankings, respectively. The findings of the study supported the interrelation between the two variables using pairwise correlation measures.

Bota-Avram (2014) also investigated the interrelation between the different dimensions of WGI and EDB score while clustering countries by income group. Her study concluded that both rule of law and control of corruption significantly manifest in their impact on the quality

of business environment in high income economies. Still, both government effectiveness and regulatory quality matters for all countries irrespective of their income group.

Another study on 41 African countries by Alemu (2015) examined the relation between both WGIs and EDB score between 2005 till 2012. Using a generalized method of moments “GMM” estimation model and others, five dimensions of WGIs showed significant impact on business environment. Only voice and accountability showed irrelevance to the EDB score. Such interrelation raises a question on whether the reason WGIs impact on FDI is actually through its impact on EDB index.

2.4 Literature Gap and Research Contribution

There are abundant number of empirical studies that addressed the role of institutional quality, particularly those that operationalize it through governance and WGIs, in attracting FDIs. There are also multiple studies that tackled the role of the business regulatory environment, operationalized by the EDB score, on FDI inflows. However, there is a lack of research that addressed why institutional quality or governance matters for FDI using quantitative research methods while accounting for business regulatory environment in the model, despite the presence of a few studies that affirms the existence of a significant relationship between them. Moreover, there are not enough studies that address these two elements with a focus on Africa, not to mention, jointly in the same model. This provides room for plenty of further research.

This thesis contributes to the existing literature by examining the interrelation between two central determinants of FDI inflows: institutional quality and business regulatory environment. Moreover, the thesis contributes to literature on Africa as its scope is focused on both North and Sub-Saharan Africa.

Chapter 3: Conceptual Framework

Drawing from the literature review chapter, the objective of this chapter is to highlight the main theories, concepts and definitions that are used as the frame of this thesis. It also aims to illustrate how these concepts are operationalized within the scope of the thesis and the rationale behind their relationship.

The theoretical framework of this thesis integrates two main theories on FDI determinants. As highlighted in the literature review chapter, the **ownership, location and internalization specific advantages** theory, known as OLI and introduced by Dunning (1977), is the only theory that considers the host country specification. Since this thesis aims at investigating the interrelation between different aspects of the location specific determinants of FDI host countries and FDI inflows, it adopts the **OLI** theory. Moreover, this thesis integrates OLI theory with North's (1990) theory on institutions to construct the main theoretical framework for its hypothesis on the dynamics of the relation between governance and ease of doing business.

3.1 Location specific determinants Paradigm

UNCTAD (1998) proposed a frame of the location specific determinants, where it identified them based on three aspects: policy framework, economic determinants and business facilitation. The policy framework adopted by UNCTAD is focused on economic related policy in terms of monetary, fiscal and trade policies. While assessment of the economic policies, per se, is beyond the scope of this dissertation, assessing the capacity of governments to adopt adequate policies that promote private sector development is a key interest.⁶ Hence, the frame

⁶ Understanding the economic policy framework requires an in-depth investigation of each country's case and its set of adopted policies. Moreover, the researcher believes that such investigation should be done through a case study method encompassing both qualitative and quantitative methodology to provide a comprehensive evaluation.

of the location specific determinants adopted in this thesis follows the main outline of that proposed by UNCTAD while replacing policy framework element with institutional quality.

UNCTAD conceptualization of business facilitation is mainly based on the role of investment promotion agencies as it entails investment promotion, incentives and services. The functional role of agencies is beyond the scope of this thesis. The thesis is more focused on the overall institutional performance as highlighted in the previous subsection.

Within the scope of this thesis, business facilitation refers to efficiency elements which MNCs seek that are related to business operations. In that sense, efficiency is reflected by the costs incurred by the MNCs due to administrative inefficiency in terms of time, complexity of procedures, information gap and financial cost. Such efficiency is governed by the business regulatory environment of the host country. Hence, business regulatory environment replaces business facilitation in the paradigm adopted in this thesis.

The economic determinants proposed by UNCTAD include market seeking, resource seeking and efficiency seeking. However, following Dunning (2003), efficiency seeking is a business facilitation element in the context of this thesis.

Figure 2 exemplifies the paradigm of the location specific determinants adopted in this thesis, where it shows the main factors of each element. It is worth noting that the paradigm adopted follows a neoclassical approach on the role of government in investment promotion. As this approach suggests governments should be limited to establishing a sound environment and does not condone any direct incentives (Ali, 2016).

3.2 Investment Climate

As defined by the IMF and EBRD, the investment climate is a set of location specific determinants of both domestic investments and FDI. Following the EBRD approach towards governance as a main shaper of investment climate reform, this thesis defines investment

climate as location specific characteristics set of the host country encompassing institutional quality, business facilitation and economic determinants.

3.2.1 Institutional Quality

In this thesis, governance is used to operationalize institutional quality in the proposed paradigm. As highlighted in the introduction chapter, governance has been defined by multiple organization and academics where each of the suggested definitions tackled different dimensions depending on the scope of work of each them. Some of the dimensions were common amongst them, nonetheless this thesis adopts the Kaufmann et al. definition to conceptualize governance. The thesis also utilizes the WGIs measured by Kaufmann and Kraay, in order to construct an aggregate index that combine the six indicators/dimensions to measure governance. The method used to construct the governance index is extensively illustrated in the data and methodology chapter.

3.2.2 Business Regulatory Environment

This thesis adopts the WB EDB regulatory frame as a measurement tool of business regulatory environment. The regulatory frame originally encompasses 10 business operations factors as listed in the definition of concepts chapter. Within the scope of this thesis, both protecting minority investors and enforcing contracts factors are excluded as they are implicitly reflected by governance dimensions. The assessment of the regulatory frame is measured by the total EDB score constructed by the WB minus the two excluding factors scores where detailed illustration of the score is provided in the methodology section.

As has been demonstrated in the studies tackled in the literature, there are other factors that are partial/potential contributor to FDI inflows and characterize location specific determinants. These factors are classified under the elements of economic determinants in the adopted

paradigm. The next section provides a description on how economic determinants are operationalized within the scope of this thesis.

3.2.3 Economic Determinants.

Based on OLI theory of FDI determinants, MNCs decide to invest on the basis of resources seeking, market seeking or efficiency seeking. Efficiency seeking is already reflected within business facilitation, given the thesis scope, as shown in previous sections. Based on the adopted paradigm, this thesis defines the economic determinants as a set of market and resources characteristics sought by MNCs that factor into their internalization and transactional cost.

3.2.3.1 Market Seeking

This thesis conceptualizes market seeking based on four elements: market size, scale of internal market, economic stability, and openness. These four elements are referred to as market characteristics in the conceptual map. The choice of the market size element is based on the market size hypotheses, which states countries with a bigger market size are expected to grow quicker, due to economies of scale. Accordingly, a bigger market size is a sought-after characteristic. Market size is operationalized by GDP per capita to account for the population size effect, while internal market scale is operationalized by population size (Petrović-Ranđelović et al., 2017).

Sudden and persistent fluctuations in the market are considered investment dampening. Both political and economic stability are sought after characteristics by investors. Political stability is accounted for under the umbrella of institutional quality. Economic stability on the other hand is reflected by a steadily growing market with low inflation rate. Hence, economic stability is operationalized by inflation adjusted economic growth.

There is no interest for any firm in investing in a closed economy. Hence, access to different markets is a key characteristic sought after by MNCs. While the EDB score considers trade across borders, it focuses only on the procedural and cost aspect. Trade openness within the context of the economic determinants focuses on the share of global trade in GDP including imports and exports. Trade openness indicate the size of extended markets that a host country can offer to MNCs investing in it.

3.2.3.2 Resource Seeking.

The thesis borrows from UNCTAD conceptualization of resource seeking elements. These elements include labor force availability, natural resources, technology and infrastructure. While labor force is defined as percentage of population in the working age, a concern on how to define the criteria of skilled labor arouse. Ideally, a skilled labor force would be operationalized by a labor force with an advanced education level. However, constrained by the availability of data for this variable, we operationalize labor force by two dimensions: percentage of population in the working age and mean years of schooling.

Natural resources matter, especially for Africa, as highlighted in the literature. Natural resources are operationalized by rents from the natural endowment of the country such as oil, minerals and forests. Both technology and infrastructure are aggregately operationalized by the infrastructure development index “IDI” in the context of this thesis. This index was introduced by the AFDB, where It is a composite index of four composite indices: electricity; transportation; information and communication technology “ICT” and water and sanitation (AFDB, 2018).⁷

⁷As explained in the AFDB (2018) bulletin, Electricity is measured by net generation while transportation is measured by total paved roads and total roads network. ICT comprises four measures: total phone subscription, number of internet users, fixed broadband internet subscribers and international internet bandwidth. Water and sanitation index measures improved water sources and sanitation facilities accounting for population accessibility.

3.3 Hypothesis development

The relations between the different concepts stated above are demonstrated in figure 2. These relations construct the main hypothesis of this thesis. Within the investment climate, institutional quality, business regulatory environment and economic determinants simultaneously affect the FDI inflows.

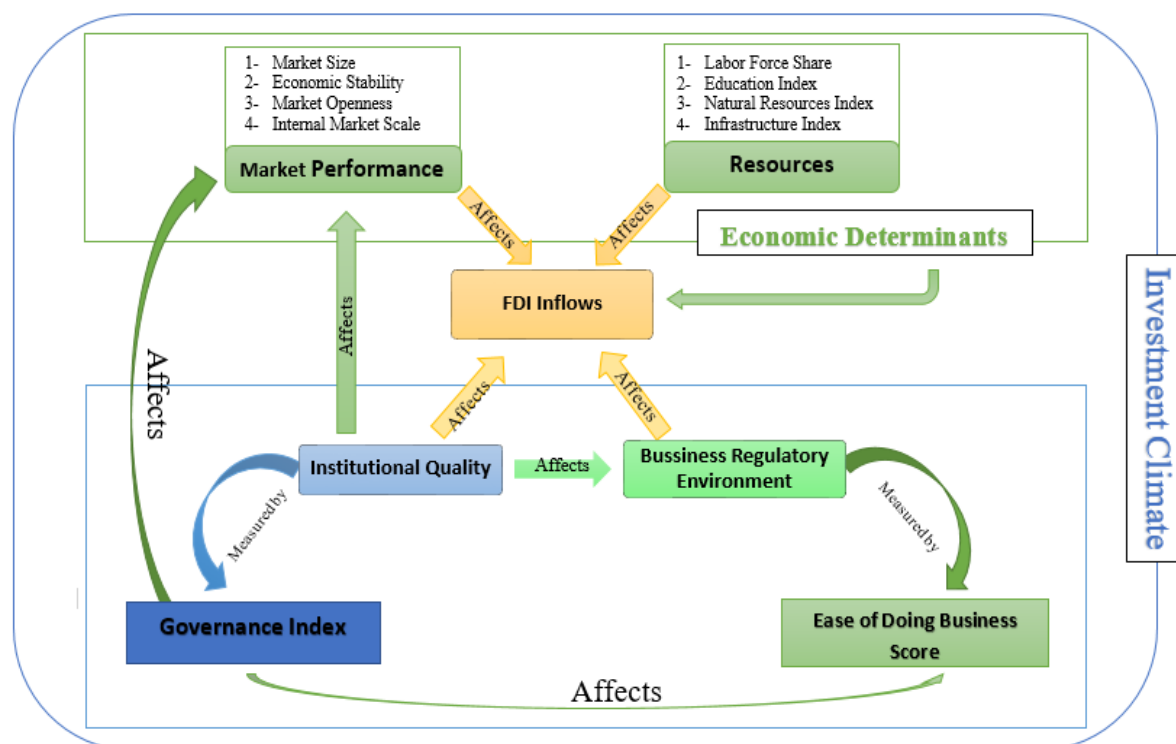
Institutional quality and business regulatory environment are respectively measured by the governance index and the total score of doing business factors. The two elements interrelate such that institutional quality affects business regulatory environment. Hence, the governance index directly affects the doing business score.

Economic determinants encompass both market performance and resources of the host country as conceptualized in this thesis. Hence, market performance and resources directly affect FDI inflows as well. North's theory on institution mostly pointed to the importance of institution for a country's economic performance. Since market performance reflects economic performance, institutional quality affects market performance. Hence, governance index also affects market performance.

Based on this conceptual map, the researcher hypothesizes that the reason why institutional quality matters for FDI is mainly due to its direct impact on the business regulatory environment, while controlling for its direct impact on the economic performance of the host country and the impact of economic determinants on FDI inflows. That is, the business regulatory environment, measured by EDB score, mediates the relationship between institutional quality, measured by governance, and FDI inflows.

The next section provides an illustration for the methodology adopted in this thesis to test the first part of the suggested hypothesis as the thesis shall control for the economic determinants.

Figure 2: Author's Conceptual Map⁸



Source: Author's conceptualization based on Dunning (1977), UNCTAD (1998), Globerman & Sharipo (2002), Morris & Aziz (2011) and Alemu (2015)

⁸ FDI Inflows are driven by resources, market characteristics, institutional quality and business regulatory environment. These 4 factors are split into two groups, overall making up the investment climate of any given economy.

The first group is termed the economic determinants, composed of a country's market performance and their respective resources. These are controlled for in the analysis.

In the second group, we can find the factor which serves as the focus of this thesis: institutional quality. This factor is of paramount importance due to its interrelations with the other factors; it directly affects both business facilitation and market performance.

Consequently, the measurement tool (governance index) which is used to measure the quality of a country's institutions, implicitly and directly affects the measure of both the business facilitation factor (doing business score) as well as the country's market performance (by way of economic performance).

Chapter 4: Data and Methodology

This thesis aims at understanding the interrelation between two central location specific determinants of FDI: institutional quality and business regulatory environment controlling for the economic determinants. This aim is driven by the researcher's interest in understanding how and why governance matters for FDI, especially in the case of Africa.

This chapter illustrates the design, data and the adopted analysis methodology for this thesis. The thesis analysis methodology is comprised of 3 stages: factor analysis, mediation analysis and regression analysis. It is divided into five sections: research design, data sources, data description, the data analysis methods, the variables of interest and the model specifications.

4.1 Research design

The thesis employs a quantitative research design using secondary panel data resources publicly available on the WB databank, AFDB databank and UNDP website. The thesis employs panel data analysis due to their advantages when it comes to cross country analysis.

As referenced in (Bellos & Subasat, 2012), these advantages are:

- It provides larger degrees of freedom compared to either cross-sectional or time series analyses. This leads to more precise regression estimates.
- It accounts for the omitted variable bias and heteroscedasticity, which is essential as it is expected to encounter country specific characteristics that cannot be included in the model.
- It captures relationships complexities between variables more than either cross-sectional or time series data with bigger capacity.

4.2 Data Source

The thesis combines data on the used variables using different resources. The data on economic variables used in the analysis were gathered from the WB database; the IDI is obtained from AFDB data bank; the education index is obtained from the UNDP website and the labor share is obtained from ILO.

Moreover, the variables used in this thesis are calculated by different resources. The macroeconomic variables in the study are compiled by the WB from the country's national accounts. The governance variables, known as WGIs, used in constructing the governance index, as illustrated later, are calculated by Kaufmann and Kraay. Both the doing business score and the measure of a country's Natural Resources Indicator (NRI) are estimated by the WB.

It is worth noting that NRI is estimated by the WB as one of the World Development Indicators (WDIs). Mean schooling year, also known as education index (EI), is estimated by the UNDP as one of the Human Development Report (HDR) measures, while labor force is calculated by International Labor Organization (ILO).

4.3 Data Description

The data set consists of strongly balanced panel for a sample of 46 African economies, out of 54 African countries, for the period 2012 – 2016.⁹ Eight countries are excluded due to a lack of data and to preserve the strong balanced data set given the short time period.

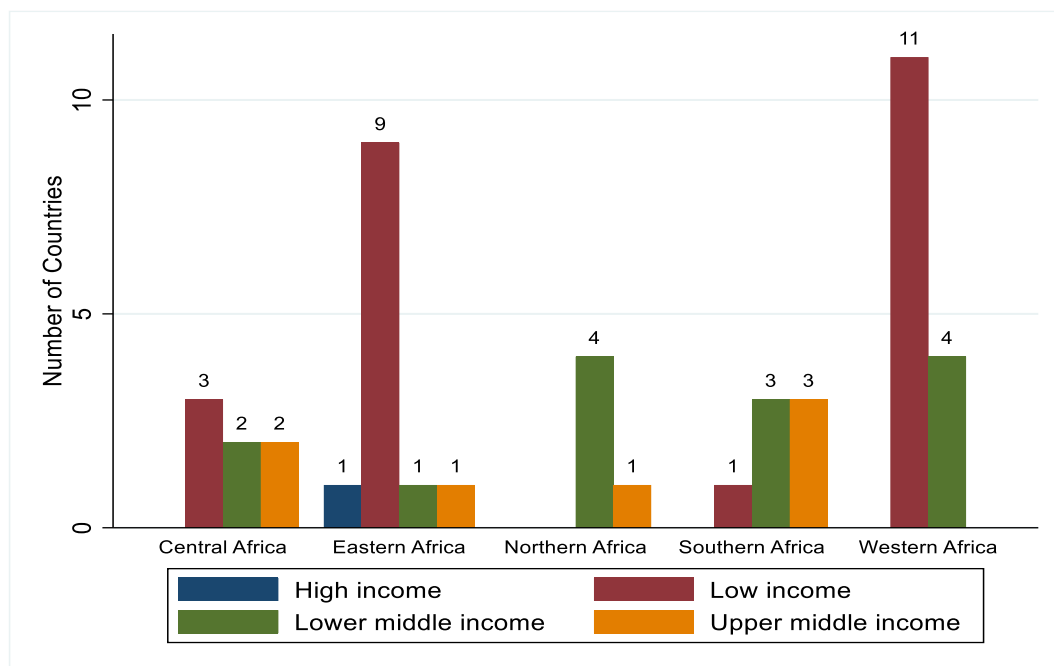
In spite of the data availability since 1996 onwards for most variables, the thesis focuses on the time period from 2012-2016 as the data on EDB score is only available starting 2010.

⁹ The list of sampled African countries includes: Algeria, Benin, Botswana, Burkina Faso, Burundi, Cabo Verde, Cameroon, Central African Republic, Chad, Comoros, Congo, Dem. Rep., Congo, Rep. Cote d'Ivoire, Egypt, Equatorial Guinea, Eswatini, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Niger, Rwanda, Senegal, Seychelles, Sierra Leone, South Africa, Sudan, Tanzania, Togo, Tunisia, Uganda, Zambia and Zimbabwe.

Moreover, the study did not span the time period starting 2011 onwards due to the political instability encountered in the North African region between end of 2010 and early 2011. In addition, the aftermath effect of the 2008 financial crisis on international crisis sustained till 2010. These two events resulted in a huge hit to FDI inflows during this short period compared to the average FDI inflows during other years. Therefore, the thesis constrained the time span to factor for outlier values of FDI inflows during the affected years.

The following diagram shows the classification of the sampled countries by income level over the different sub-regions in Africa. As shown in the figure, only one country, i.e. Seychelles, is classified as high income country by the WB and almost half of the sampled countries, i.e. 24, are low income level.

Figure 3: Sampled African Countries by Income Level over African sub-regions.



Source: Constructed by Author based on the sampled countries

4.4 Data Analysis Methods

4.4.1 Factor Analysis

The thesis employs factors analysis for the purpose of constructing a composite index that measures governance. The thesis follows the guidance of Nardo et al. (2005) on the building and out of composite indices, where it divides index construction into consistency analysis, standardization and normalization, weighting and aggregation.

Factor analysis is a dimension reduction statistical technique. It is used to combine the variability between multiple highly correlated variables, such that this variability become captured by a lower number of unobserved variables. These unobserved variables are referred to as **factors**. Factor analysis comes in two forms: exploratory and confirmatory analysis.

As referenced in Gnanadesikan (2011), when the researcher has a pre-defined hypothesis on the factors that combine the variables, confirmatory factor analysis is employed to affirm this hypothesis. Alternatively, exploratory factor analysis reveals the variability and multiplicity of interrelations that generate such factors between large numbers of variables. It is used when the researcher is still formulating an understanding of the used data.

Based on the literature, high multicollinearity between WGI dimensions is expected. Hence, the thesis employs confirmatory factor analysis to reduce these six dimensions in form of less item, i.e. governance the variables seek to measure is pre-identified.

Correlation measures between the estimates of the six dimensions are employed to confirm the researcher's concern of multicollinearity issues. Consistency is checked with both the Kaiser-Meyer-Olkin (KMO) value and Bartlett's test significance Chi-square to see if the factor analysis is plausible or not. KMO is an official test for the partial correlations between all the included dimensions while Bartlett's test examines whether the correlation matrix is an identity matrix or not. For factor analysis to be conducted, the KMO value must exceed 0.5 and the null

hypothesis of Bartlett's test must be rejected indicating that the correlation matrix is invertible (Groh & Wich, 2012).

Normalization and standardization indicate using the z-score of the variables value as it standardizes the measure of all the input variables across the same range and remove the unit of measurement effect. Moreover, the z-score yields a distribution transformation for the data to a normal distribution with mean zero and standard deviation of one.

One of the key advantages of factor analysis for composite construction is that each component produced is assigned a weight proportional to its share of the total variance in the data. Nicoletti et al. (2000) emphasize that this property ensures large coverage of the cross-country variance which is required for cross-country comparisons i.e. the scope of this thesis. The aggregation step is done to aggregate the retained factors that would explain an accumulated variability of 60% at least. The aggregation method used is the linear summation of the retained factors accounting for their weights. The linear method is chosen so that input variables shall be standardized, so the measure unit concern is invalid in this case. A final step is added, where the aggregated factors are standardized using a Min-Max method for the sake of the interpretability and comparability of the index score. The thesis relies on SPSS as a statistical software to run the factor analysis for the index needed.

4.4.2 Mediation Analysis

Mediation analysis is used to investigate the dynamics of the interrelation between institutional quality and business regulatory environment in determining the FDI inflows to a certain country. Hence, the mediation analysis technique is used to formally test the main hypothesis of the thesis. As presented in the introduction, the thesis main hypothesis is that “***Business Regulatory Environment mediates the relation between Institutional Quality and FDI inflows***”.

Baron and Kenny's (1986) three-step mediation analysis was adopted, where they listed three necessary conditions, yet insufficient, that must be satisfied to establish mediation effect. These conditions are:

1. A significant relationship between the mediator and the independent variable
2. A significant relationship between the independent variable and the dependent variable in absence of the mediator
3. A significant relationship between the dependent variable and the mediator variable.

When these three necessary conditions are satisfied, a further necessary and sufficient condition for concluding mediation is examined. This condition concerns the change in the effect of the independent variable on the dependent variable upon the inclusion of the mediator variable in the model. If the effect fully diminishes after introducing the mediator variable, then a full mediation effect is concluded. In case the effect declines, then a partial mediation is concluded.

To assess the change in the effect, a formal mediation effect test known as the **Sobel test** is conducted. This test assesses whether the mediator variable carries the effect of an independent variable to a dependent variable. The test measures the reduction in the effect of the independent variable on dependent variable upon introducing the mediator variable. The test score is then compared to the Normal distribution/T-distribution to decide whether the reduction is significant. Hence, it can be concluded whether the mediation effect is statistically significant.

The Sobel test null hypothesis is that there is no significant reduction in the effect, hence no mediation effect. The Sobel test equation is:

$$test - statistic = \frac{a * b}{\sqrt{(b^2 * s_a + a^2 * s_b)}}$$

Where:

- a = unstandardized regression coefficient of governance variable in Model C;
- b = unstandardized regression coefficient of DB variable in Model B;
- S_a = standard error of a & S_b = standard error of b.

In order to formally check the fulfillment of these three conditions and conduct the Sobel test, if conditions are fulfilled, 5 sub-hypotheses are developed. These sub-hypotheses are as follows:

- **Sub- hypothesis 1:** There is a significant, positive relationship between governance and ease of doing business.
- **Sub- hypothesis 2:** There is a significant, positive relationship between governance and FDI inflows in the absence of the ease of doing business variable.
- **Sub- hypothesis 3:** There is a significant, positive relationship between ease of doing business and FDI inflows in the absence of the governance variable.
- **Sub- hypothesis 4:** There is a significant, relationship between governance and FDI inflows when ease of doing business is considered.
- **Sub- hypothesis 5:** There is a significant, positive relationship between ease of doing business and FDI inflows when governance is considered.

In order to establish the mediation effect, these five hypotheses must not be rejected except for hypothesis four, as perfect mediation is established when the effect of governance completely diminishes when ease of doing business is introduced in the model. To formally test for these sub-hypotheses, multiple multivariate log linear panel regression analyses are carried out. The next section illustrates the models used and which sub-hypotheses they test.

4.4.3 Regression Analysis

Regression analysis is used for two purposes:

- Validating the fulfillment of Baron and Kenny necessary conditions
- Investigating the relationship between governance index, doing business score and FDI inflows whilst controlling for economic determinants to determine the mediation effect

As the variables of interest are continuous variables, a multivariate log-linear regression model is used to fit the different models specified in table 3. Model A, C and D are used to test the fulfillment of the three necessary conditions respectively. Model B is used to verify the importance of the control variables prior including them in the model. Model E shall be used to test for the necessary and sufficient condition if model A, C and D imply conditions are met.

Table 3: Mediation Model Construction

Model	Model A	Model B	Model C	Model D	Model E
Dependent	<i>Ln (DB score)</i>	<i>Ln (FDI)</i>	<i>Ln (FDI)</i>	<i>Ln (FDI)</i>	<i>Ln (FDI)</i>
Independent	<i>Governance</i>		<i>Governance</i>	<i>Ln (DB score)</i>	<i>Governance</i>
Mediator					<i>Ln (DB score)</i>
Control	<i>GDP per Capita, Openness, Economic Growth, IDI, NRI, Labor Force, EI, Population</i>				
Tested Sub-Hypotheses	<i>Sub-hypothesis 1</i>		<i>Sub-hypothesis 2</i>	<i>Sub-hypothesis 3</i>	<i>Sub-hypothesis 4 &5</i>

Source: Constructed by Author

The thesis primarily specifies the fixed effect estimation method as it assumes the time invariant characteristics of the countries are correlated with both the explanatory and control variables. For instance, the country's region in Africa, whether north or Sub-Saharan, is an invariant characteristic that potentially indicates the natural endowments of the country; this is already reflected in the NRI variable. Moreover, the income level classification by the WB, is correlated to GDP per capita, which is included in the model as a measure of one of the control variables.

As referenced in Gujarati (2009), fixed effect estimates are characterized by being consistent estimates, though inefficient. Moreover, it lacks the capacity to reflect the long run effect on the investigated variable. However, it is believed that given the short span this thesis is investigating, i.e. 5 years, the long run effect is not of a concern.

Still, the thesis formally compares between pooled, fixed effect and random effect estimation, as well as utilizing the specification tests including both the Hausman test and the Breusch and Pagan Lagrange multiplier test to draw a formal conclusion on the fixed effect specification.

Findings from both models will be included in the result section, although the analysis will only consider the correctly specified one. The thesis will adopt post estimation diagnostic tests to check for multicollinearity, homoscedasticity and autocorrelation to ensure that the estimates provided are consistent. In this part of the methodology, the software package STATA is used.

4.5 Analysis Variables

4.5.1 Dependent variable

The dependent variable is the log level of the annual net inflows FDI. The net figures indicate new investment inflows less disinvestment from foreign investors in the reporting country. Net inflows FDI is annually available in current/nominal values. Since current values do not account for changes in market prices, a deflation is required. The deflation is done using the consumer price index of the same year of the inflows.

$$\ln(FDI)_{it} = \ln\left(\frac{\text{Net inflows } FDI_{it}}{\frac{CPI_{it}}{100}}\right), \text{ such that } i: \text{Country} \ \& \ t: \text{time}; \ \text{Unit: Million}$$

4.5.2 Independent Variable

The independent variable is governance. In order to account for the collinearity issue that was raised in the literature, an aggregate index is constructed by conducting factor analysis using the six estimates of the WGIs. The illustration of the process of conducting factor analysis is provided in the next section. The index scale is from 0 to 100 with 0 being the worst and 100 being the best.

4.5.3 Mediator Variable

As highlighted in the conceptual framework, business facilitation is defined by the business regulatory environment which is measured by the summation of the scores of 8 factors of the doing business score in this thesis. Each of these factors is scored against 100. Hence, it is a

continuous variable where the highest possible value is 800. The measure included in the model is its log measure and is referred to by “DB score” in the model.

4.5.4 Control Variables

The following table presents the control variables in the model, where these variables are used to model the economic determinants of the investment climate. The table also demonstrates the measures used to quantify/reflect these variables in the model and their name in the model for reporting purposes.

Table 4: Control Variables Description.

Variable	Measure/Proxy description	Name in the model
Market Size	Log of Real GDP per capita: GDP calculated at constant \$ values divided by population.	GDP Capita
Economic stability	Economic growth i.e. annual changes in real GDP. It is reported in percentage terms with positive and negative values	Economic growth
Internal market	Log level of country’s population size	Population
Market Openness	Total amount of trade i.e. imports + exports, as percentage of the GDP. It ranges from 0 to 100.	Openness
Labor force	The share of the population size aging between 15-64 who are economically active in the total population. This includes both employed and unemployed seeking jobs.	Labor
Labor Skill	Education index which estimates the average number of years of education received by people ages 25 and older in their lifetime.	EI
Natural Resources	Natural resource index which estimates the natural resources rents as percentage of GDP such as oil, natural gas, hard and soft coal, mineral and forests. It ranges from 0 to 100.	NRI
Infrastructure	Infrastructure development index compares infrastructure level in the region including electricity, technology, transportation and sanitation. It ranges from 0 to 100.	IDI

Source: Constructed by Author

4.6 Model Specification

The following models are the ones that shall be fitted to test the main hypothesis of this thesis. It is worth noting that both independent, mediator and control variables are included in the model with one-year lag. Hence, while the dependent variables span the period 2012-2016, the remaining variables span the period 2011-2015.

$$\textbf{Model A: } \ln(DB\ score)_{i(t-1)} = \beta_0 + \beta_1\ Governance_{i(t-1)}$$

$$\textbf{Model B: } \ln(FDI_{i(t-1)}) = \beta_0 + \beta_x * Control\ Variables_{i(t-1)}$$

$$\textbf{Model C: } \ln(FDI_{i(t-1)}) = \beta_0 + \beta_1\ Governance_{i(t-1)} + \beta_x * Control\ Variables_{i(t-1)}$$

$$\textbf{Model D: } \ln(FDI_{i(t-1)}) = \beta_0 + \beta_1 * \ln(DB\ score)_{i(t-1)} + \beta_x * Control\ Variables_{i(t-1)}$$

$$\textbf{Model E: } \ln(FDI_{i(t-1)}) = \beta_0 + \beta_1\ Governance_{i(t-1)} + \beta_2 * \ln(DB\ score)_{i(t-1)} + \beta_x * Control\ Variables_{i(t-1)}$$

Such that; $i = country$ & $t = year$

Chapter 5: Findings and discussion

This chapter presents the findings of the data analysis conducted using the tools and methods described in the previous section.

5.1 Factor analysis

Prior to conducting the factor analysis, the correlation matrix of the six dimensions of the WGI were checked. The correlation is presented in the following table over the pooled data used in the analysis irrespective of the year. It is noticed that all the pairwise correlation are higher than 0.6, presenting a highly significant correlation that will cause a multicollinearity issue upon including all the dimensions in the model.

Table 5: Correlation Matrix of WGI's dimensions in African countries.

Dimension	Control of Corruption	Government Effectiveness	Political Stability	Regulatory Quality	Rule of Law	Voice & Accountability
Control of Corruption	1.0000					
Government Effectiveness	0.8656	1.0000				
Political Stability	0.7142	0.6833	1.0000			
Regulatory Quality	0.7858	0.8939	0.6534	1.0000		
Rule of Law	0.8986	0.9502	0.7421	0.9124	1.0000	
Voice & Accountability	0.7318	0.7433	0.6346	0.7777	0.8033	1.0000

Source: Constructed by Author using SPSS output

Hence, as highlighted in the methodology, the thesis resorts to constructing a composite index to comprehensively measure governance. Following Nardo et al. (2005), consistency analysis is conducted prior to computing the factor analysis. Table 6 presents a summary of the SPSS factor analysis output per year including consistency checks. The consistency checks conducted are KMO value, Bartlett's test significance Chi-square and the component matrix of the six dimensions. All KMO values significantly exceeds 0.6 (the threshold required) which

confirms the conclusion from the correlation matrix. Moreover, in Bartlett's test, the null hypothesis is rejected, which means that correlation matrix is not an identity matrix. Hence, the data's suitability for factor analysis is confirmed.

It should be noted that the standardization of the dimensions in this case was not needed as the dimensions' estimates are available in the normalized form ranging from -2.5 to +2.5. Moreover, the weighting has also been accounted for through the factor analysis. It should also be noticed that while the thesis focuses on FDI inflows during 2012-2016, all the explanatory variables are included in the model at one-year lag values. Hence, the results provided are for the WGI's dimensions from 2011-2015.

After conducting the factor analysis, both the percentages of variation explained by the extracted factor and the component matrix for all dimensions were checked. The dimension reduction technique resulted in the loading of all dimensions over six factors with one factor having the lion share in terms of the percentage of variation i.e. above 83% per year. The component matrix showed no exclusion of any of the dimensions. In addition, all correlation coefficients are positive indicating strong correlation of the six dimensions in the same direction to the extracted factor.

Table 6: Factor Analysis summary outcome per year

Year	2011	2012	2013	2014	2015
KMO-Value	0.889	0.889	0.892	0.884	0.879
Bartlet Test Approx (P-Value)	0.0000*	0.0000*	0.0000*	0.0000*	0.0000*
% of Variation by the extracted factor	84.79%	84.68%	84.91%	83.66%	83.92%
Component Matrix					
Control of Corruption	0.96	0.95	0.96	0.96	0.96
Government Effectiveness	0.95	0.95	0.95	0.95	0.94
Political Stability	0.82	0.81	0.82	0.83	0.81
Regulatory Quality	0.92	0.91	0.92	0.92	0.93
Rule of law	0.97	0.97	0.97	0.98	0.98
Voice and Accountability	0.87	0.88	0.88	0.84	0.84

Source: Constructed by Author using SPSS output

This one factor was selected to construct the index. Hence, the aggregation was no longer of a concern. This one factor is used as an estimate for the overall governance score of the country. In order for that score to be meaningful, the score is rescaled from 0 to 100 over the full data set as with the following formula for each year:

$$Governance\ Index_{it} = \left(\frac{Factor\ Score_{it} - Min(Factor\ Score_t)}{Max\ Factor\ Score_t - Min(Factor\ Score_t)} \right) * 100;$$

$i = country \ \& \ t = year$

The final Governance index per country is provided in the next section including the list of sampled African countries. Table 7 below shows summary statistics for the constructed Governance index. The mean value of the index in the 46 African countries ranges from 36.7 to 39.3 exhibiting a declining pattern over the 5 years in the analysis. The countries with the maximum governance score are Botswana and Mauritius.

Table 7: Summary Statistics of Governance Index per Year

Year	Mean	St. dev	Min	Max
2011	40.49804	13.97274	14.8442	74.42659
2012	39.74367	14.22285	15.4069	74.75313
2013	39.5633	14.30405	15.2668	74.27834
2014	39.28802	14.00792	12.65318	74.64108
2015	38.268	14.36999	13.1746	74.15226

Source: Constructed by Author using STATA output

5.2 Descriptive Statistics

5.2.1 Summary statistics

Table 8 presents the summary statistics on the main variable of interest of this thesis. Since the data is strongly balanced, each country appears on average over the 5 sampled years. The overall average of governance index is 39.4 which reflects low level of governance with an average of 1.82 variation for each country across the 5 years. Moreover, countries' governance score varies among each other by 14.07 points. The highest score is attained by Mauritius in

Eastern Africa during the year 2013, while the minimum governance score belongs to the Central African Republic.

Table 8: Panel Summary Statistics of independent, dependent and mediator variables

Variable		Mean	Std.	Min	Max	Observations	
Governance	Overall	39.47221	14.07074	12.65318	74.75313	N	230
	Between		14.07645	15.25142	74.45096	N	46
	Within		1.816704	33.30982	47.02507	T	5
FDI	Overall	771.7272	1106.302	-604.232	7009.875	N	230
	Between		980.7211	6.270656	3986.328	N	46
	Within		528.1014	-1777.75	4064.427	T	5
Doing Business	Overall	414.07	86.09746	176.88	635.79	N	230
	Between		84.49331	224.164	619.792	N	46
	Within		19.95882	346.428	477.898	T	5

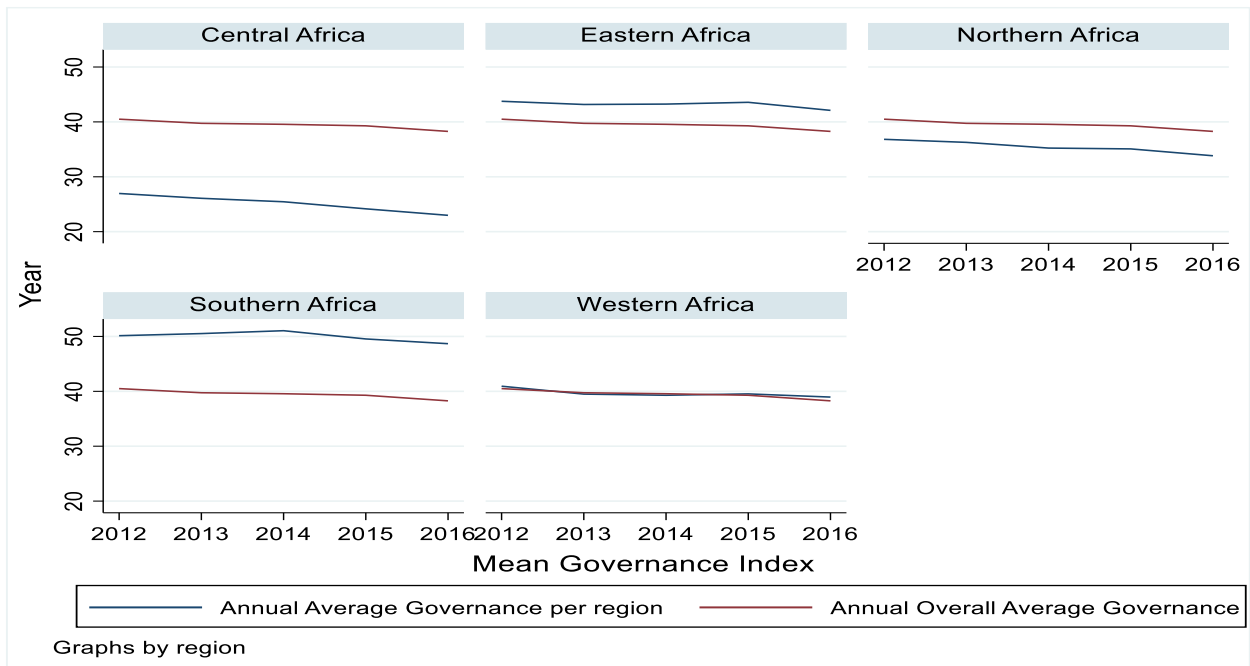
Source: Constructed by Author using STATA output

The average FDI inflows for the sampled countries is 771.7 million dollars, where this average varies by 980.7 million dollars between the countries and varies by 528.1 on average within each country. FDI inflows takes positive and negative values with negative values indicating FDI outflows higher than inflows for the country during a specific year. The highest negative FDI inflows are during 2014 in Chad for the amount of -604 million dollars followed by Algeria during 2015 with amount of -424.3 million dollars. The highest FDI inflows occurred during 2013 in South Africa.

As for the doing business score, the average score for the sample is 414.07, where it varies between sampled countries by 84.49. For each country, this score varies among the 5 years by 19.96. The summary statistics on the control variables are provided in **appendix B** aggregated over the whole sample.

As can be seen in figure 4, analyzing the governance index across sub-regions, both Eastern and Southern African countries have a higher average governance score than the sampled countries with Southern Africa being the highest. Central African countries have the lowest governance score on average. Northern Africa and Western Africa are close to the average.

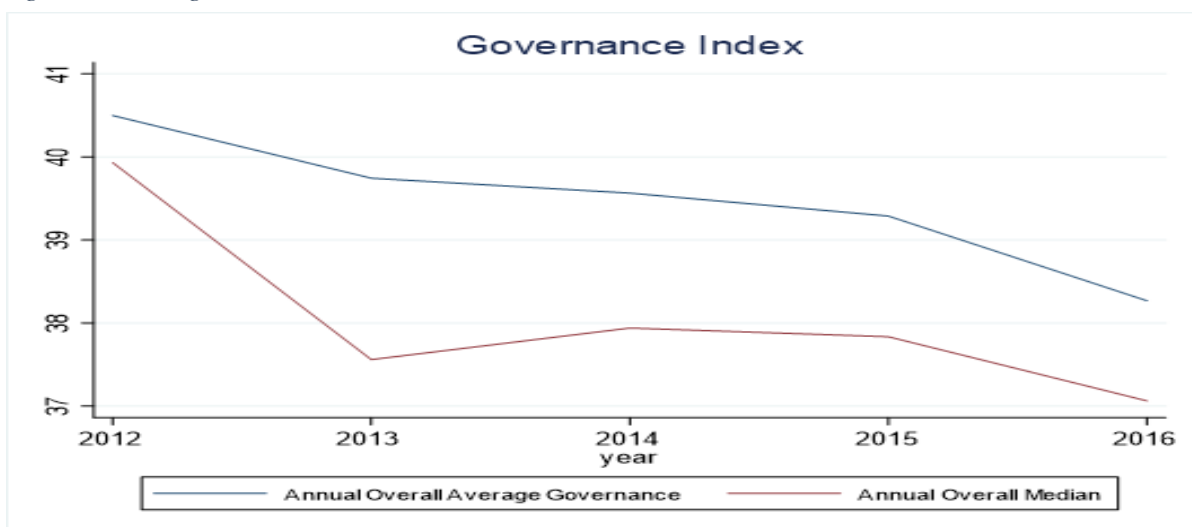
Figure 4: Average Governance index by region vs. Overall Governance index average over time



Source: Constructed by Author using STATA output

While this primitive insight may suggest that the average is low due to the weight of Central African countries, the reality is that the average is skewed up due to high values from Southern and Eastern African countries. This can be seen by comparing both the annual overall governance average to the annual overall median, where the median values of the governance index are below the average values. Figure 5 clearly shows that the governance index is exhibiting a declining pattern over the 5 years for the sampled countries.

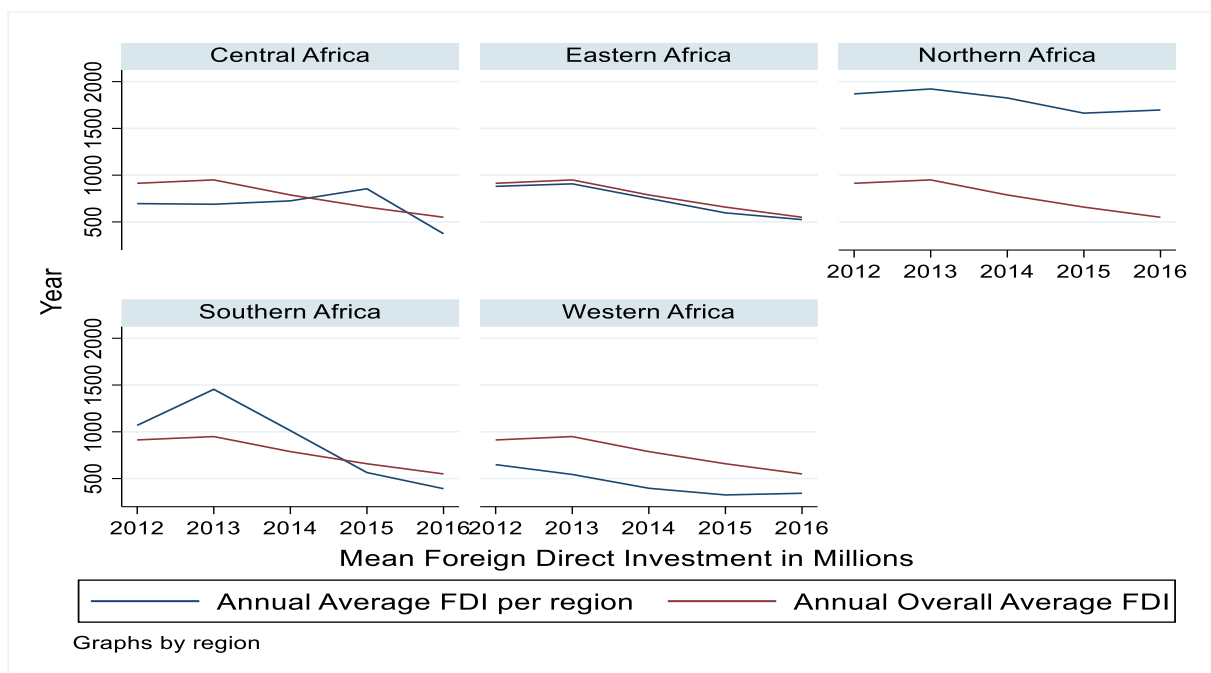
Figure 5: Average Governance Score VS. Median Governance Score over time



Source: Constructed by Author using STATA output

Looking at FDI inflows over the years of study by sub-regions, Northern Africa demonstrates the highest, although declining, average of FDI despite having a below-average governance score. This could be attributed to the fact that North Africa is usually grouped with Middle Eastern countries, yet with bigger market size and cheaper labor share. Figure 6 below shows that Southern Africa comes next, while both Central and Western Africa have the lowest FDI inflows on average in line with sub-hypothesis 2.

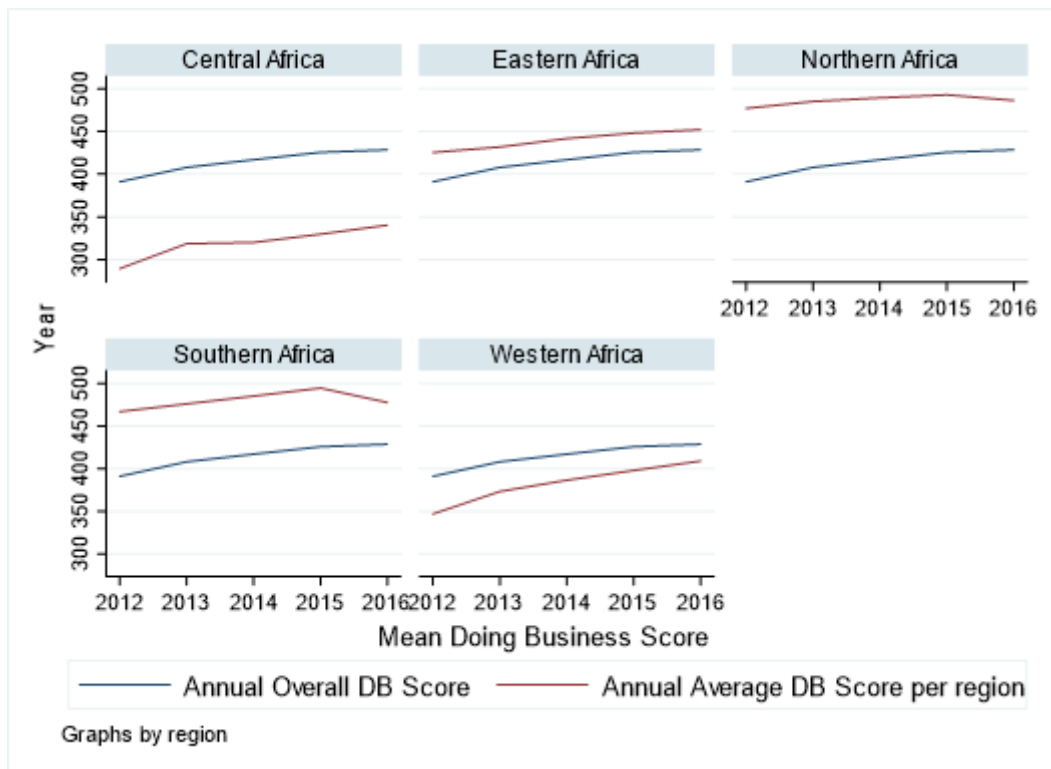
Figure 6: Average FDI inflows by region vs. Overall FDI inflows average over time



Source: Constructed by Author using STATA output

Figure 7 investigates the same pattern for the doing business score, both Northern and Southern Africa demonstrate the highest average score compared to the remaining sub-regions. Whereas, Central and Western Africa demonstrate the lowest average score. The comparison between figure 6 and figure 7 is in favor of sub-hypothesis 3.

Figure 7: Average DB Score by region vs. Overall DB score Average over Time



Source: Constructed by Author using STATA output

5.2.2 Correlation Measures

To investigate the correlation factor among the variables used in the analysis and to check for potential multicollinearity issues among predictor variables, the Pearson correlation coefficient is tabulated below in table 9. The table shows the correlation matrix for the variables included in the model including the dependent variable accounting for the measurement level. It is calculated over the whole period of the study.

Table 9: Correlation Matrix between dependent, independent, mediator and control variables

Variables	Ln (FDI)	Governance	Ln (DB)	IDI	EI	Economic Growth	Openness Index	NRI	Ln (Market size)	Ln (GDP per Capita)
Ln (FDI)	1									
Governance	0.1977*	1								
Ln (DB)	0.2653*	0.7173*	1							
IDI	0.1714*	0.5325*	0.6373*	1						
EI	0.2339*	0.4419*	0.5366*	0.6604*	1					
Economic Growth	0.2822*	0.0717	0.0229	-0.1244*	-0.0392	1				
Openness Index	0.0672	0.3676*	0.1971*	0.2787*	0.3847*	0.0809	1			
NRI	0.1262*	-0.4966*	-0.5111*	-0.3930*	-0.1758*	0.1317*	0.1746*	1		
Ln (Market size)	0.5148*	-0.2996*	-0.1203*	-0.2127*	-0.1866*	0.1598*	0.5897*	0.0925	1	
Ln (GDP per Capita)	0.1798*	0.4635*	0.5600*	0.6879*	0.7229*	0.0989	0.4786*	-0.1361*	-0.4309*	1

(*) indicates significance at 10% error

Source: Constructed by Author using STATA output

The correlation matrix shows high prospects for the selected model as the bivariate relation between the dependent variable and each of the specified variables in the model is significant except for openness index. Moreover, there is a strong positive correlation between governance and doing business, hinting at a potential mediation effect, whilst also raising a suspicion regarding multicollinearity. However, it must be noted that this measure pools observations irrespective of the time dimension and does not consider cross section dependence.

As for the control variables, the moderate to strong correlation amongst them, as well as the independent and mediator variable raises concern regarding multicollinearity. Yet, Gujrati (2009) emphasized that multicollinearity can be tolerated as long as collinearity between variables is not perfect. Nonetheless, a formal diagnostic test will be carried out after fitting the model to reach a formal conclusion regarding the significance of the issue.

As the correlation matrix did not account for the time dimension, further Pearson correlation coefficients are tabulated by year with focus on dependent, independent and mediator variables. The following three tables shows the coefficients for each bivariate relationship. As shown in table 6, there is a significant, positive and strong relationship between the governance score and the doing business score over the 5 years, giving credence to hypothesis 3. There is also a moderate positive significant relationship between FDI and the doing business score for all years except for 2015. Surprisingly, the correlation between governance and FDI is insignificantly weak over each year, despite its significance in the pooled correlation.

Table 10: Pearson Correlation between Governance score and log Doing Business score per year

Correlation	Ln(DB) _(t-1)				
	2012	2013	2014	2015	2016
Governance _(t-1)	0.7567*	0.7652*	0.7795*	0.7914*	0.7799*

Source: Constructed by Author using STATA output

Table 11: Pearson Correlation between log FDI inflows and Governance score per year

Correlation	Ln (FDI) _t				
	2012	2013	2014	2015	2016
Governance _(t-1)	0.1878	0.1824	0.2074	0.1826	0.2087

Source: Constructed by Author using STATA output

Table 12: Pearson Correlation between log FDI inflows and log Doing Business score per year

Correlation	Ln(FDI) _t				
	2012	2013	2014	2015	2016
Ln(DB) _(t-1)	0.3681*	0.3252*	0.2983*	0.3144	0.2666*

Source: Constructed by Author using STATA output

While the above results may indicate rejecting the 1st hypothesis of a significant relationship between FDI and governance, these correlation measures are indicative rather than conclusive. Regression analysis is conducted to confirm accurate, conclusive results on this relationship while factoring for other variables in the picture. The following section reports on the findings from different models using different fitting techniques.

5.3 Regression Results

5.3.1 Model A

This model investigates the first condition of Baron and Kenny (1986) 's conditions list. As highlighted in the methodology, a formal procedure is carried out to determine an adequate estimation technique. As shown in table 13, pool-ability is rejected by both the F-test and BM Lagrangian multiplier test, favoring fixed effect and random effect estimation, respectively. While the Hausman test favors fixed effect estimation, the existence of heteroscedasticity and serial autocorrelation points towards re-estimation with cluster-robust standard errors to account for both issues. It should be noted that the cluster-robust standard errors only accounts for the issues without correcting them. Moreover, the negative direction of the relationship between doing business and governance in the fixed effect estimation, though significant, it is unreasonable.

After re-fitting the model, the estimated random effect with cluster-robust standard errors is the significant model (P-value= 0.0001). Based on this model, it is concluded that a significant positive relationship between doing business and governance exists, where a one-unit change in the governance score, increases the total score of doing business by 0.6%. Moreover, governance explains 51% of the variation in the overall doing business score and it explains almost 58% of variation in the doing business score between the sampled countries. Hence, the first hypothesis is formally not rejected. Accordingly, Baron and Kenny's first condition is fulfilled.

Table 13: Model (A) Estimation Results

Fitting method Variables	Model A: $y = \text{Doing Business}$				
	Pooled	FE	RE	FE_Cluster	RE_Cluster
Governance	.0111643* (.0007181)	-.0059989 * (0.00226)	.006131* (.0013544)	-.0059989 (0.0040928)	.006131* (0.0016044)
Constant	5.562492* (.0300853)	6.239964 (0.0893016)	5.76117 * (0.058051)	6.239964 * (0.1615515)	5.76117 * (0.067373)
Model Diagnostics					
Prob>F	0.00000	0.0086	0.00000	0.1497	0.0001
Adjusted R ² / Overall R ²	0.5125	0.5146	0.5146	0.5146	0.5146
Between R ²		0.5709	0.5709	0.5709	0.5709
F-test: $u_i = 0$		26.62*			
BM Lagrangian Multiplier for RE	-		281.40*		
Hausman test		44.95*			
Sargan-Hansen statistic				NA	
Wald test for Heteroskedasticity	-	32073.68*			
Wooldridge Test for Serial Auto correlation	-	31.598*			

* Significant at 1%, ** Significant at 5%, ***Significant at 10%

Source: Constructed by Author using STATA output

5.3.2 Model B

This model is employed to validate the role of economic determinants in FDI inflows prior to including either institutional quality or business regulatory environment. Following the same approach in model A, the model is fitted using 5 estimation techniques. As both fixed effect and random effect with cluster-robust standard errors are significant, the Sargan-Hansen statistic is tabulated to help formally choose the most reliable estimation technique. As the statistic is significant at the 1% significance level, the technique chosen is the fixed effect with cluster-robust standard errors.

Based on this model, the only significant economic factors are market size and economic growth, whilst controlling for other variables. A one percent change in the population size decrease FDI inflows by almost 6%. While this seems counterintuitive, it could be explained by the fact that larger populations are often related to low economic growth. Moreover, the average schooling year in the sampled country is 5 years, reflecting low human capital.

Economic stability, however, showed an expected relationship; a change by 1% increases FDI inflows by 2.5%.

Table 14: Model (B) Estimation Results

Fitting method		Model B: y=Ln (FDI)				
Variables	Pooled	FE	RE	FE_Cluster	RE_Cluster	
Governance						
Ln (DB)						
Internal Market	1.144013*** (0.0768116)	-6.075557** (2.951355)	1.116237* (0.112619)	-6.075557** (3.341463)	1.116237* (0.129035)	
Economic Stability	0.0544278*** (0.017661)	0.0258909 (0.019018)	0.0382694** (0.016215)	0.0258909** (0.013478)	0.0382694** (0.015679)	
Market Size	0.778374* (0.144671)	2.284592 (1.557151)	0.8398267* (0.212733)	2.284592 (1.655689)	0.8398267* (0.204685)	
Openness	0.0234996* (0.003778)	-0.0100134 (0.011428)	0.0196165* (0.005209)	-0.0100134 (0.0209734)	0.0196165* (0.0078764)	
Labor	0.0929414 (1.423562)	-3.811521 (11.64354)	0.3076082 (2.09738)	-3.811521 (7.092048)	0.3076082 (1.943998)	
EI	-0.0591831 (0.06406)	-0.4720584 (0.504665)	-0.0626821 (0.095955)	-0.4720584 (0.5774436)	-0.0626821 (0.0764748)	
NRI	0.0038047 (0.008687)	0.0048321 (0.018031)	0.0081899 (0.011166)	0.0048321 (0.0301073)	0.0081899 (0.015618)	
IDI	0.0015871 (0.007231)	0.0025035 (0.025889)	-0.0017811 (0.010241)	0.0025035 (0.0175926)	-0.0017811 (0.0095042)	
Constant	-6.316243*** (1.927915)	105.2402** (43.98738)	-6.003014** (2.831981)	105.2402** (47.96949)	-6.003014** (3.125707)	
Model Diagnostics						
Prob>F	0.00000	0.0099	0.00000	0.0001	0.00000	
Adjusted R²/ Overall R²	0.6213	0.2097	0.6174	0.2097	0.6174	
Between R²	-	0.2752	0.7858	0.2752	0.7858	
Within R²	-	0.1142	0.0236	0.1142	0.0236	
F-test: u_i=0		3.39*	-	-	-	
BM Lagrangian Multiplier for RE	-	-	21.92*	-	-	
Hausman test		15.95**		-	-	
Sargan-Hansen statistic	-	-	-	77.42*		
Wald test for Heteroskedasticity	-	78143.65*	-	-	-	
Wooldridge Test for Serial Auto correlation	-	0.609	-	-	-	
Multicollinearity	All VIF values <10					

* Significant at 1%, ** Significant at 5%, ***Significant at 10%

Source: Constructed by Author using STATA output

It is worth noting that model B explain almost 21% of the overall variation of FDI inflows while it explains 27.5% variation of FDI inflows between the sampled countries.

5.3.3 Model C

This model investigates the role of governance in determining FDI inflows. Following the same approach in Model B, the most reliable estimation method is found to be the fixed effect with cluster-robust standard errors, as the Sargan-Hansen statistic is significant at the 1% significance level. The cluster -robust standard errors technique is used to account only for heteroskedasticity (Wald test P-value <0.01) as there is no serial autocorrelation among observations.¹⁰ As shown in table 15, Both governance and economic growth exhibited a significant effect on FDI inflows. A one-unit increase in governance increases FDI inflows by 12%, holding other factor constants. The economic growth effect almost has the same effect compared to model B; such that a one percent increase in economic growth, increases FDI inflows by 2.6%.

Interestingly, the overall R-square of model C is less than model B although the newly added variable is significant. The model explains only 15.5% of the overall variation in FDI inflows, yet it explains almost 21% of the variation between countries in the sample, which is less than model B by 6%. Having a closer look, we realize that whilst the explanatory power of the between country sample decreased, the degree of variation explained in the within country sample increased. This possibly indicates that monitoring governance levels is a way for countries assess their performance in attracting FDI inflows. This raises a further question on what governance index actually reflects for the country itself.

Based on model C, **the second sub-hypothesis of the thesis is formally not rejected.**

Moreover, Baron and Kenny's second condition is satisfied.

¹⁰ Wald test null hypothesis is the absence of autocorrelation. The p-value of the test is very high, so we fail to reject the hypothesis indicating no autocorrelation.

Table 15: Model (C) Estimation Results

Fitting method Variables	Model C: Ln(FDI)				
	Pooled	FE	RE	FE_Cluster	RE_Cluster
Governance	0.0413332* (0.008193)	0.120565* (0.043268)	0.0501143* (0.011118)	0.120565*** (0.061707)	0.0501143* (0.0131044)
Ln (DB)					
Internal Market	1.168465* (0.072802)	-2.355551 (3.185225)	1.154804* (0.105473)	-2.355551 (4.279039)	1.154804* (0.1090877)
Economic Stability	0.0352702** (0.017129)	0.026271 (0.018636)	0.025719 (0.015827)	0.026271** (0.011373)	0.025719*** (0.0137593)
Market Size	0.7386531* (0.137042)	0.293353 (1.684861)	0.7511332* (0.199561)	0.293353 (1.872133)	0.7511332* (0.1680667)
Openness	0.0161329* (0.00386)	-0.008695 (0.011208)	0.0128502** (0.005137)	-0.008695 (0.02042)	0.0128502** (0.007345)
Labor	-0.96352 (1.362451)	-0.898355 (11.457)	1.375005 (1.993394)	-0.898355 (7.664823)	1.375005 (2.053204)
EI	-0.04551 (0.060642)	-0.551113 (0.495321)	0.045468 (0.089622)	-0.551113 (0.617999)	0.045468 (0.0720935)
NRI	0.009408 (2.86)	0.0120477 (0.017857)	0.0288751** (0.011529)	0.0120477 (0.029133)	0.0288751** (0.0171836)
IDI	-0.00899 (0.007152)	0.0139497 (0.025698)	0.013281 (0.009947)	0.0139497 (0.023357)	0.013281 (0.0114065)
Constant	-7.13909* (1.830509)	53.78001 (46.89183)	6.835134** (2.650548)	53.78001 (61.34998)	6.835134** (2.573162)
Model Diagnostics					
Prob>F	0.00000	0.001	0.0000	0.0004	0.0000
Adjusted R ² / Overall R ²	0.6630	0.1555	0.6596	0.1555	0.6596
Between R ²	-	0.2250	0.8236	0.2250	0.8236
Within R ²	-	0.1547	0.0751	0.1547	0.0751
F-test: u _i =0		2.89*	-	-	-
BM LaGrangian Multiplier for RE	-	-	17.08*	-	-
Hausman test		26.82*		-	-
Sargan-Hansen statistic				37.27*	
Wald test for Heteroskedasticity	-	45840.78*	-	-	-
Wooldridge Test Auto correlation	-	0.652	-	-	-
Multicollinearity	All VIF values <10				

* Significant at 1%, ** Significant at 5%, ***Significant at 10%

Source: Constructed by Author using STATA output

5.3.4 Model D

This model examines the third condition for the mediation analysis by estimating the effect of business regulatory environment over FDI inflows while controlling for other variables. Doing business is only significant in the pooled estimation techniques, which is rejected in favor to both fixed and random effect estimation technique. Like previous models, robust cluster standard error estimation is applied to account for absence of homoscedasticity. The fixed effect estimation technique is nominated as the most reliable based on the Sargan-Hansen statistics (P-value<0.05).

Unlike previous models, economic stability is insignificant. However, internal market size has a significant negative effect on FDI, in line with model B. A one percent change in the population size lowers FDI by 5.9%. As highlighted in model B, this could potentially be due to the association of a large population with low human capital, low economic growth and macroeconomic instability due to anticipated high unemployment and effect on public finances (Asongu, 2013a).

Another factor to be considered, MNCs do not necessarily invest in foreign markets to target local consumers. In many cases, MNCs decide on investment abroad to lower transaction costs by taking advantage of trade agreements between certain countries, free trade areas, cheap labor or investment incentives.

Based on the estimation results of this model, shown in table, the 3rd hypothesis of the thesis is rejected. Moreover, the Baron and Kenny's third condition for mediation analysis is not fulfilled. Hence, the main hypothesis of the thesis is statistically rejected. There is no support that institutional quality matters to FDI due to its effect on the business regulatory environment.

Table 16: Model (D) Estimation Results

Fitting method Variables	Model D: Y=Ln(FDI)				
	Pooled	FE	RE	FE_Cluster	RE_Cluster
Governance					
Ln (DB)	1.2391** (0.5718523)	-0.2451877 (1.740686)	0.6225428 (0.7406091)	-0.2451877 (3.039508)	0.622543 (0.711717)
Internal Market	1.117705* (0.0770971)	-5.871046*** (3.297154)	1.104887* (0.1130453)	-5.871046*** (3.002707)	1.104887* (0.131496)
Economic Stability	0.0478579* (0.0177665)	0.0255535 (0.0192252)	0.0374677** (0.0162726)	0.025554 (0.015651)	0.0374677** (0.016042)
Market Size	0.6998956* (0.1478998)	2.279699 (1.56224)	0.8023212* (0.2162433)	2.279699 (1.643867)	0.8023212* 0.211167
Openness	0.0218821* (0.0038187)	-0.0099012 (0.01149)	0.0052375 (0.2576068)	-0.0099 (0.021281)	0.0191096** (0.008117)
Labor	0.0366281 (1.411263)	-4.225417 (12.0427)	2.089806 (-0.0686617)	-4.22542 (9.659416)	0.257607 (1.889565)
EI	-0.0635786 (0.063528)	-0.4412067 (0.5515441)	0.0958421 (0.0119048)	-0.44121 (0.029996)	-0.06866 (0.073417)
NRI	0.0133218 (0.0096661)	0.0051414 (0.0182187)	0.0191096* (0.0120209)	0.005141 (0.836086)	0.011905 (0.018626)
IDI	-0.0027196 (0.0074374)	0.0016388 (0.0266826)	-0.0038773 (0.0105219)	0.001639 (0.021829)	-0.00388 (0.009091)
Constant	-12.60347* (3.474322)	103.4717** (45.87184)	- 9.1987*** (4.730894)	103.4717** (41.47347)	-9.19868 (3.78259)
Model Diagnostics					
Prob>F or X2	0.0000	0.0174	0.0000	0.0002	0.0000
R2/Overall R2	0.6297	0.2073	0.6248	0.2073	0.6248
Between R2	-	0.2720	0.7986	0.2720	0.7986
Within R2	-	0.1143	0.0191	0.1143	0.0191
F-test: u_i=0	-	3.21*	-	-	-
BM Lagrangian Multiplier for RE	-	-	17.34*	-	-
Hausman test		21.87*		-	-
Sargan-Hansen statistic	-	-	-	82.470*	
Wald test for Heteroskedasticity	-	92540.35*	-	-	-
Wooldridge Test Auto correlation	-	0.646	-	-	-
Multicollinearity	All VIF values <10				
* Significant at 1%, ** Significant at 5%, ***Significant at 10%					

Source: Constructed by Author using STATA output

5.3.5 Model E

Given the conclusion drawn from the previous four models, this model is fitted to test for hypotheses 5 and 6. Following same approach mentioned previously, the fixed effect with robust cluster standard error is employed. Based on the results in table 17, we fail to reject

hypothesis 4 and reject hypothesis 5 since the business regulatory environment is not a significant factor.

Table 17: Model (E) Estimation Results

Fitting method	Model E: Ln(FDI)				
Variables	Pooled	FE	RE	FE_Cluster	RE_Cluster
Governance	0.0413622* (0.0092036)	0.121021* (0.043429)	0.0557495* (0.012307)	0.1210211*** (0.061603)	0.0557495* (0.0141539)
Ln (DB)	-0.00428 (0.6129301)	-0.43928 (1.706861)	-0.8175 (0.773609)	-0.43928 (2.868476)	-0.8175 (0.7588022)
Market Size	1.168573* (0.0746015)	-1.97508 (3.519951)	1.17399* (0.107864)	-1.97508 (3.845351)	1.17399* (0.1219628)
Economic growth	0.0352794** (0.0172213)	0.025668 (0.018836)	0.025463 (0.015808)	0.025668*** (0.012846)	0.025463** (0.0135606)
GDP per Capita	0.7388965* (0.1417214)	0.277054 (1.690924)	0.790361* (0.204354)	0.277054 (1.846972)	0.790361* (0.1888608)
Openness	0.0161333* (0.0038698)	-0.00849 (0.011269)	0.0127674** (0.005164)	-0.00849 (0.020726)	0.0127674*** (0.0074977)
Labor	-0.96407 (1.368014)	-1.62887 (11.83558)	-1.50467 (2.011711)	-1.62887 (10.09652)	-1.50467 (2.137889)
EI	-0.04549 (0.0608932)	-0.49614 (0.540735)	-0.03598 (0.090776)	-0.49614 (0.857645)	-0.03598 (0.0743134)
NRI	0.0269123** (0.0097269)	0.012629 (0.018051)	0.02615** (0.011854)	0.012629 (0.028699)	0.02615** (0.0182106)
IDI	-0.00899 (0.0072487)	0.012444 (0.026428)	-0.01182 (0.010114)	0.012444 (0.026541)	-0.01182 (0.0113299)
Constant	-7.117941** (3.540024)	50.41696 (48.80934)	-2.72613 (4.712406)	50.41696 (54.98118)	-2.72613 (3.868446)
Model Diagnostics					
Prob>F	0.0000	0.002	0.0000	0.0007	0.0000
Adjusted R²/ Overall R²	0.6465	0.1371	0.6564	0.1371	0.6564
Between R²	-	0.2034	0.8149	0.2034	0.8149
Within R²	-	0.1550	0.09		
F-test: u_i=0		2.88*	-	-	-
BM LaGrangian Multiplier for RE	-	-	17.10*	-	-
Hausman test	-	22.07**		-	-
Sargan-Hansen statistic		-	-	33.475*	
Wald test for Heteroskedasticity	-	48038.60*	-	-	-
Wooldridge Test Auto correlation	-	0.699	-	-	-
Multicollinearity	All VIF values <10				

** Significant at 1%, ** Significant at 5%, ***Significant at 10%

Source: Constructed by Author using STATA output

5.4 Discussion Summary

To sum up the findings of the conducted analysis, only governance and economic growth showed a consistent, positive effect on FDI inflows to African countries that was both robust to different estimation techniques and significant. While these findings are in line with the discussed literature (Globerman & Shapiro, 2002; Gani, 2007; Gangi and Abdulrazek 2013), the finding regarding the doing business score is not. Also, contrary to the consensus in the literature such as Moosa (2002), other variables such as real GDP, population size, labor share, natural resources and infrastructure did not show an impact on FDI inflows.

Such misalignment with the literature could be attributed to a few factors. Firstly, African economies differ to other countries. Most studies in the literature, whether for governance or the doing business effect, have paid greater attention to developed or transition economies. Few of them focused on developing economies, whilst others aggregated all countries together. This potentially had masked the effect for countries with the lowest level of development, which is pre-eminent in the African context. This conclusion is supported by Bayraktar (2013) and Gillanders and Corcoran (2015), who found that the significance of the relationship between EDB and FDI inflows does not hold for poor economies or decline for developing countries.

Second, the methodology for examining the relationship between the variables differ. For instance, both Morris and Aziz (2011) and Bayraktar (2013) concluded that a significant relationship between the doing business score and FDI inflows exists; however, they relied only on the Pearson correlation coefficients. Both studies' conclusion on the correlation measures are similar to the findings in the descriptive statistics section of this study. This thesis extended on their analysis by applying regression analysis to control for other relevant factors.

In addition, other studies in the literature that opted for regression analysis either used a pooled regression for the panel (Piwonski, 2010) or applied OLS to the average values over the

addressed time period (Gillanders and Corcoran, 2015). Again, pool-ability has been tested in this model and proved to provide inconsistent estimates, which is why fixed effect was favored instead.

Though governance and the doing business score showed significant relationship using both panel regression and Pearson correlation measures, the main hypothesis regarding the mediation effect of the doing business score on the relationship between governance and FDI inflows is rejected.

The findings from this thesis raise a question on whether the business regulatory environment is important for FDI inflows or not. It also raises a question on whether it explains the relationship between institutional quality and FDI. An important aspect to consider is that perhaps the relationship did not show significance because of the proxy measures used for the variables of interest i.e. both EDB score for business regulatory environment and governance index for institutional quality.

Hence, the findings potentially question whether the doing business score actually captures the business regulatory environment or how the governance index measure is perceived. For instance, UNCTAD (1999) highlighted that investor's perception of Africa's business suitability is often affected by the stereotype image of the prevalence of political turmoil, economic instability, diseases and natural disasters. An image that is potentially reflected by the governance index to investors. Therefore, institutional quality matters for FDI inflows in Africa since it determines how investors perceive and classify different African countries.

Accordingly, there is no conclusive evidence that the business regulatory environment does not mediate the relationship between institutional quality and FDI inflows in practice, although the main thesis hypothesis is rejected.

Chapter 6: Conclusion and Policy Recommendation

6.1 Conclusion

The main objective of this thesis is to understand the interrelation between the business regulatory environment and institutional quality, and their effect on attracting FDI inflows. This thesis employs a quantitative research method using secondary, panel data consisting of 46 African countries from between 2012-2016. The author extends on previous literature from scholars such as Globerman and Shapiro (2002), Gani (2007), Piwonski (2010), Morris and Aziz (2011) and Alemu (2015) by examining the dynamics of interrelation between institutional quality and business regulatory environment on FDI inflows. The thesis focuses on whether business regulatory environment mediates the relationship between institutional quality and FDI inflows. In short, **the main hypothesis is statistically not accepted** using a mediation analysis approach, developed by Baron and Kenny (1986), where multivariate regression models, estimated by robust cluster standard error fixed-effect techniques, are used to assess the mediation conditions and effects.

To apply the Baron and Kenny (1986) approach, the EDB score is used as a proxy for the business regulatory environment (excluding minority investor's rights and the enforcement of contract scores). Alongside this, a governance index is also constructed as a proxy measure for institutional quality, using a factor analysis technique aggregating the WGIs developed by the Kaufmann and Kraay.

The initial analysis begins by examining the bivariate relationship between the main variables of interest and FDI. Afterwards, a more comprehensive regression analysis is carried out to control for the economic determinants of FDI within the Eclectic paradigm. 5 regression models are estimated, where each model is estimated using 5 estimation techniques: pooled OLS, fixed effect, random effect, robust cluster standard error fixed effect and robust cluster

standard error random effect. The different estimation techniques are applied to formally test for the most reliable estimation technique and also to check for the robustness of the results.

The findings of this study can be summarized as follow:

1. There is a robust, consistent and significant relationship between governance and the doing business score.
2. Controlling for economic determinants, there is a robust significant relationship between FDI inflows and governance.
3. Controlling for economic determinants, there is no evidence for a robust relationship between FDI inflows and the estimated EDB score.
4. Economic stability has a significant, positive effect on FDI inflows, whilst holding other factors constant.

Only the 1st, 2nd and 4th results are in line with studies from previous literature addressed in chapter 3 (Globerman & Shapiro, 2002; Gani, 2007; Karr & Cardak, 2006; Alemu, 2015). Although the 3rd finding is not in line with academics such as Morriz and Aziz (2011) and Piwonski (2010), it is aligned with Gillanders and Corcoran's (2015) findings.

Two main reasons are identified for this deviation from the literature: the geographical context of the African region and the different methodological approach. Africa has 33 Least Developing Countries (LDCs) out of 54, in addition to having the lowest ranks in WDIs. This raises a question on the validity of previously adopted models in the aforementioned literature when modelling Africa.

Regarding the methodological approach, since both the business regulatory environment and institutional quality are of a qualitative nature, employing proxy measures is limited in its effectiveness of comprehensively capturing the different and unobservable dimensions. Moreover, the thesis employs different statistical techniques than the studies addressed in the

literature review, as there is a scarcity in the studies employing the same approach, i.e. Baron and Kenny's (1986) mediation approach, with regards to the scope of the study.

To conclude, the proxy measures employed to measure the business regulatory environment showed an insignificant relationship with FDI inflows, which in turn dissatisfy one of the necessary conditions to establish mediation analysis. Nonetheless, this cannot count as conclusive evidence that the business regulatory environment does not mediate the relationship between institutional quality and FDI inflows. On the contrary, this findings points towards the need for examining whether the EDB score captures the reality of the business regulatory environment outside the developed world, in order to validate the key results of the thesis.

6.2 Policy Recommendations

As highlighted in the introduction, attracting FDI is a necessity for countries striving for economic development and growth. Therefore, governments prioritize policies concerned with attracting FDI on their agendas. Since a high degree of institutional quality and economic stability showed a positive effect on FDI inflows, this section would focus on policies promoting these two factors.

6.2.1 Institutional Quality Policies

While aggregating the six dimensions of the WGIs in one index has resolved multicollinearity issues, it has masked the importance of each dimension and hence the ones which government should address as a priority in their policies. This section will shed insights on various policies that tackle these different dimensions separately.

Corruption control defines the extent to which public authorities are able to effectively discourage state capture and corruption at all levels. Asongu (2013b) suggested the popular prescription of investing in sustainable economic growth as a method for curbing corruption. The logic behind this being that growth brings along with it higher incomes and standards of

living, reducing the reward of corruption and hence the incentive. Asongu also discovered meaningful relationships between the corruption control dimension and other WGI. This means that curbing corruption policies shall enhance other dimensions of institutional quality.

Addressing the rules of law dimension, government can strengthen faith in the legal system through thorough investigation of any reported crimes, in particular when elected officials are suspected of corruption (Montes & Paschoal, 2016). Montes & Paschoal also found that government effectiveness was greater in countries with lower rates of corruption and more open democracies. This relates government effectiveness dimension to the voice and accountability dimension.

Alternatively, governments can focus on the voice and accountability dimension. For instance, governments can focus on educational empowerment to enhance governance through this dimension. By providing more educational opportunities, citizens can develop their political understanding, gaining the confidence and knowledge to engage in democratic proceedings. Alternatively, governments can take steps to optimize communication channels between internal and external stakeholders. This builds transparency and trust, encouraging the public to participate.

To enhance government effectiveness Montes and Paschoal found that high levels of debt and inflation rates can impede the effectiveness of policy formulation and implementation. Hence, perhaps prudent fiscal and monetary policies can be employed to encourage efficient policy-making alongside economic development and the promotion of economic stability.

In tandem with promoting the effectiveness of government, efforts should be made to enhance the quality of regulation, enabling greater development of the private sector. This requires a two-pronged approach, taking both proactive and reactive measures.

During the early stages of the regulatory process, a forward-looking approach should be taken, involving subject matter experts, such as behavioral economists, consultants and affected parties to a greater degree. Creating attractive incentives to inspire voluntary engagement with affected parties should serve to create more efficient legislation, requiring less re-formulation, as the affected parties have an inherent interest in creating policies which they are onboard with. Having said this, caution should be taken to ensure that laws are not created which asymmetrically benefits certain parties involved in this process.

After new regulations have been implemented, a backward-looking approach should be taken involving a comprehensive assessment to evaluate compliance and enforcement rates, and hence whether the regulation has been effective in producing the desired outcome.

Bardhan (2002) highlighted the emphasis the WB placed on the role of decentralization in governance reforms (World Bank, 2000). Hence, promoting decentralization is a key policy issue that need to be addressed by governments to promote good governance. There are 4 types of decentralization according to the WB; they are political, administrative, financial and markets. However, the thesis cannot extend of this analysis as the WGI used to construct governance did not measure the degree of decentralization in the country or measure what type of decentralization is the most relevant to them.

6.2.2 Economic stability policies

Economic stability comprises two main elements: economic growth and inflation. Hence, policies aiming at promoting economic stability must address these two elements. Inflation is directly associated with macroeconomic stability since it is associated with currency and interest rates shocks.

As for economic growth, governments should focus on promoting the role of the private sector and encouraging small businesses and entrepreneurship since they are the main employer of

labors. Governments can support the private sector through a flexible fiscal policy when it comes to tax return, helping the sector to accumulate capital at its early stages. Moreover, governments can also utilize their monetary tool through central banks to lower lending interest rates, hence lowering the cost of investment, increasing production, employment and spending. However, governments need also to pay attention to inflation. This is where policies concerned with macro-economic stability play a role.

When it comes to macroeconomic stability, governments should focus on limiting economic leakages and taking precautions to curb potential fluctuations. Usually, governments opt for official policy measures such as implementing automatic fiscal stabilizers which create fiscal drags during periods of economic prosperity and encourage the opposite during economic troughs. Similarly, implementing a floating exchange rate or altering monetary policy can be used to absorb demand-side or supply-side economic shocks.

Alternatively, governments can indirectly intervene by encouraging open and flexible labor markets to smoothen unemployment rates given variations and transitions in aggregate demand. Other measure such as interest rate manipulation, supply-side measures and many of the policies conducive to improving governance would also serve to providing greater economic stability.

6.3 Limitations and Further Research

Although the study employed formal specifications test to select the most robust estimation technique, the study faced multiple limitations related to the data and variables selection which impacted the findings. The data spans only 5 years, which is relatively a short time span for macro-panel data analysis. Moreover, 8 countries are excluded due to incomplete data on all the variables of interest. Moreover, both the regulatory environment and institutional quality

are measured using proxy measures due to their unobservable nature. This raises a concern regarding the external validity of the adopted methodology.

Further Research should investigate different proxy measures for the business regulatory environment and check whether the findings hold or not. In addition, investigating which WGI dimensions are impacting FDI inflows is a central concern so that governments can prioritize issues that they need to address. Moreover, it would be interesting to fit the same models to other regions, continents or countries' and examine whether the findings validity. Such examination would also validate the African context justification provided in the thesis.

Another interesting approach to be applied is to conduct focused cases studies on a sample of African countries with a focus on the policy dimension in addition to the institutional quality and the role of investment promotion agencies in attracting FDI inflows. In addition, analyzing types of FDI or sectors of FDI inflows to Africa may provide a breadth analysis on the findings of the study. Moreover, addressing the role of decentralization in the model as highlighted by Bardhan (2002), is of a paramount importance.

Understanding FDI inflows is a very generic topic that involves multidimensional analysis to gain a thorough understanding. This makes it a research area that is always open to new ideas and exploration studies.

Appendices

Appendix A: List of Sampled countries and their Governance Index Score

Table 18: Governance Index for African Countries (2011-2015)

Country	2011	2012	2013	2014	2015
Algeria	33.00	33.15	34.30	33.15	31.51
Egypt, Arab Rep.	36.51	36.27	32.35	31.21	30.31
Libya	21.57	21.55	17.74	11.70	8.27
Morocco	46.82	46.90	46.43	47.43	46.77
Tunisia	50.55	49.29	47.82	48.82	47.41
Angola	28.69	29.81	27.89	28.41	27.19
Burundi	26.18	24.53	26.83	29.74	21.79
Benin	47.49	46.22	46.60	45.71	43.99
Burkina Faso	45.49	44.02	42.39	41.59	42.38
Botswana	71.22	71.54	70.81	69.76	68.92
Central African Republic	24.34	21.97	16.54	12.65	13.74
Cote d'Ivoire	27.41	30.86	33.46	37.81	38.32
Cameroon	31.93	30.87	30.83	30.50	29.05
Congo, Dem. Rep.	14.84	15.41	16.77	16.83	14.19
Congo, Rep.	29.17	27.57	28.04	28.75	27.29
Comoros	30.76	31.00	32.61	33.95	33.05
Cabo Verde	68.03	67.42	66.52	65.26	66.19
Ethiopia	32.01	32.10	31.89	33.94	30.72
Gabon	41.39	40.79	40.79	40.01	37.27
Ghana	57.38	56.22	56.33	53.53	53.20
Guinea	26.66	25.81	26.27	27.06	29.86
Gambia, The	41.88	40.99	38.93	37.86	34.55
Guinea-Bissau	29.38	23.59	21.94	24.04	23.58
Equatorial Guinea	24.12	23.12	21.99	19.07	18.11
Kenya	38.08	36.85	38.51	40.10	38.35
Liberia	35.72	35.80	34.53	34.52	32.47
Lesotho	51.58	51.27	53.00	49.20	47.02
Madagascar	36.50	35.35	34.21	34.77	34.07
Mali	42.92	32.83	34.36	33.82	32.90
Mozambique	46.24	45.51	42.05	40.61	37.39
Mauritania	33.20	33.02	31.98	33.08	30.90
Mauritius	74.43	74.75	74.28	74.64	74.15
Malawi	46.49	45.66	44.66	43.56	41.81
Namibia	61.62	62.63	62.99	60.63	60.79
Niger	41.48	38.27	37.37	37.16	36.85
Nigeria	27.55	27.31	26.96	25.36	27.30
Rwanda	48.86	49.04	51.20	53.05	52.38
Sudan	17.25	15.76	15.27	14.80	13.17
Senegal	45.87	49.24	50.44	51.61	50.51

Country	2011	2012	2013	2014	2015
Sierra Leone	38.25	36.33	36.58	35.80	34.76
South Sudan	18.77	20.78	16.46	7.51	5.42
Sao Tome and Principe	46.23	44.99	44.76	45.61	44.35
Eswatini	38.89	39.49	40.64	39.53	37.96
Seychelles	59.55	59.32	59.98	57.72	62.00
Chad	22.94	22.87	23.19	21.31	21.20
Togo	32.87	31.86	31.55	34.14	33.86
Tanzania	44.99	43.79	43.15	41.90	41.48
Uganda	40.97	40.21	39.62	38.88	38.02
South Africa	61.37	59.41	60.38	59.05	57.45
Zambia	47.75	49.60	48.92	47.42	46.34
Zimbabwe	18.53	19.73	20.61	21.26	22.28
Eritrea	20.06	18.79	17.33	16.78	13.08

Source: Constructed by Author using SPSS output

Appendix B: Summary Statistics of Controlled Variables

Table 19: Summary Statistics of Control Variables

Variable	Obs	Mean	Std. Dev.	Min	Max
IDI	230	23.48082	19.63218	3.91	93.7131
EI	230	5.096957	2.146906	1.4	10.1
Economic growth %	229	4.440429	4.685388	-36.7	20.71577
GDP per capita	230	2622.232	3479.707	228.4325	18236.31
Openness	230	78.20498	33.7556	19.1008	216.4832
NRI	230	13.56302	11.78053	0	59.27
Market Size	230	19351542	22389842	87441	100835458
Labor share	225	0.391966	0.0674	0.25301	0.556228

Source: Constructed by Author using STATA output

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