TOPIC: THE IMPACT OF CORRUPTION ON FDI INFLOWS IN AFRICA: DO NATURAL RESOURCES MATTER?

SUPERVISOR: DOCTOR T KAIRIZA

A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE MASTERS OF SCIENCE IN ECONOMICS DEGREE

07 MAY 2019
RELEASE FORM

NAME OF AUTHOR: DZINGAI MUBATSA

TITLE OF DISSERTATION: THE IMPACT OF CORRUPTION ON FDI INFLOWS IN AFRICA. DO NATURAL RESOURCES MATTER?

MASTER OF SCIENCE IN ECONOMICS DEGREE-DEVELOPMENT ECONOMICS

PROJECT WAS PRESENTED: IN DEVELOPMENT ECONOMICS

YEAR GRANTED: 2019

Permission is hereby granted to the Bindura University of Science Education to produce single copies of this project and to lend or sell such copies for private, scholarly or scientific research purposes only. The author reserves other publication rights and neither the project nor extensive extracts from it may be printed or otherwise reproduced without the author’s written permission.

SIGNED: ..............................................................................................................

PERMANENT ADDRESS: 834 Sloane Square. Highlands. Harare
DATE: 07 May 2019
The undersigned certify that they have read and recommended to Bindura University of Science Education for acceptance, a dissertation entitled:

“The impact of Corruption on FDI inflows in Africa: Do Natural Resources Matter?

Submitted by Dzingai Mubatsa in partial fulfilment of the requirements for the degree of Masters of Science in Economics.

SIGNED: …………………………………………   Date…………………………

STUDENT

SIGNED: …………………………………………Date…………………………

SUPERVISOR

SIGNED: …………………………………………Date…………………………

CHAIRPERSON

SIGNED: …………………………………………Date…………………………

LIBRARIAN

DATE: …………………………………………………………………………………
DECLARATION

I Dzingai Mubatsa, hereby declare that this dissertation is the result of my own investigation and research, except to the extend indicated in the acknowledgements and references and by acknowledged sources in the body of the research and that it has not been submitted in part or full for any other degree to any other University or College.
DEDICATION

This research is dedicated to my wonderful family: My loving wife Sandra and great children Michael Tadiwanashe, Joshua Tanatswa and Nissi Chelsea Tinashé.
ACKNOWLEDGEMENTS

For the successful completion of this dissertation, I really thank God the Almighty who gave me strength and determination to undertake the MSc program. This research work could not have been a success without the patience, support and encouragement from my family. I thank all the Bindura University Lecturing staff in particular the MSc Economics Chairman and his dedicated team of lecturing professionals. I am highly indebted to Doctor T. Kairiza for being my supervisor and mentor. His patience, guidance and advice during this research work is invaluable and immeasurable. The tremendous encouragement, support and help received from colleagues and friends is greatly appreciated.
Abstract

The question of development has seized many economists for centuries. In the modern era it’s agreed that Foreign Direct Investment plays a role in a country’s development and economic growth. This common position has led to a search for the key determinants of foreign direct investments inflows into countries. Economic theory i.e. convergence theory has argued that FDI should flow more to least developed countries than the developed nations as the rate of return on investments is assumed greater in least developed countries than the developed. Evidence on the ground is however contrary to this assertion. Many factors have been put forward as the inhibitors of FDI inflows in Africa chief amongst them economic instability, over regulation, political instability and general governance. This research work though focuses more on corruption impact on FDI and its relationship with natural resources in Africa. Panel data from 2006-2016 is used and Fixed Effect model is applied. The results suggest that natural resources pull factor still appeals more to FDI inflows in Africa and that corruption is a common thread in countries in Africa irrespective of natural resources status. The research work also concluded that in natural resource rich countries corruption aids the flow of FDI. The question this research did not answer though is what determines FDI inflows within and across continents. A strong argument is emerging of separating FDI funds by sources of origin. One can argue that there is Asian, American and European and African FDI. On the face of it these sources of FDI are affected by completely different variables. Other sources thrive under the shadow of darkness and are hence promoted by lack of transparency whilst the traditional sources of FDI now have set ground rules that determine their participation. This research work has pooled all the various sources of FDI into Africa.
# Table of Contents

**RELEASE FORM** ................................................................................................................................. i

**DEDICATION** ........................................................................................................................................ iv

**ANNEXURE** .......................................................................................................................................... ix

**LIST OF TABLES** ................................................................................................................................. x

**LIST OF ACRONYMS** ........................................................................................................................... xi

**CHAPTER 1** ............................................................................................................................................ 1

1.0 Introduction ........................................................................................................................................ 1

1.1 Background ......................................................................................................................................... 1

1.4 Research Objectives .......................................................................................................................... 7

1.5 Research Questions ............................................................................................................................. 7

1.6 Research Hypothesis ............................................................................................................................ 7

1.7 Justification ....................................................................................................................................... 9

1.8 Delimitations ..................................................................................................................................... 9

1.9 Assumptions ..................................................................................................................................... 10

1.10 Limitations .................................................................................................................................... 10

1.11 Definition of terms .......................................................................................................................... 10

**LITERATURE REVIEW** ....................................................................................................................... 12

2.1 Theoretical ........................................................................................................................................ 12

2.1.1 FDI theories .................................................................................................................................. 12

2.1.1.1 Convergence Theory .................................................................................................................. 12

2.1.1.2 Harrod-Dormar Growth Model ................................................................................................... 12

2.1.1.3 Osmosis Theory ........................................................................................................................ 12

2.1.1.5 Competitive Advantage Theory ................................................................................................ 13

2.1.2 Natural Resource Theory ................................................................................................................ 14

2.1.2.1 Natural Resource Theory .......................................................................................................... 14

2.1.3 Corruption Theory .......................................................................................................................... 14

2.1.4 Correlation between Corruption and Natural Resources ............................................................. 15

2.2 Empirical Evidence ............................................................................................................................. 15

2.2.1 FDI Background Studies ............................................................................................................... 15

2.2.2 Natural Resources .......................................................................................................................... 17

2.2.3 Corruption .................................................................................................................................... 18

2.2.4 Correlation between Corruption and Natural Resources ............................................................. 20

**CHAPTER 3** ........................................................................................................................................ 22

3.0 Methodology ...................................................................................................................................... 22
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1 Estimation methods</td>
<td>22</td>
</tr>
<tr>
<td>3.3 Description of variables</td>
<td>24</td>
</tr>
<tr>
<td>Education Enrolment</td>
<td>24</td>
</tr>
<tr>
<td>CHAPTER 4</td>
<td>27</td>
</tr>
<tr>
<td>RESULTS, DESCRIPTION AND ANALYSIS</td>
<td>27</td>
</tr>
<tr>
<td>4.1. Introduction</td>
<td>27</td>
</tr>
<tr>
<td>4.2. Descriptive analysis</td>
<td>27</td>
</tr>
<tr>
<td>4.3. Estimation results</td>
<td>30</td>
</tr>
<tr>
<td>4.4 Summary</td>
<td>32</td>
</tr>
<tr>
<td>Chapter 5</td>
<td>33</td>
</tr>
<tr>
<td>Summary, Recommendations and Conclusion</td>
<td>33</td>
</tr>
<tr>
<td>5.1 Summary</td>
<td>33</td>
</tr>
<tr>
<td>5.2 Recommendations</td>
<td>35</td>
</tr>
<tr>
<td>5.3 Conclusion</td>
<td>35</td>
</tr>
</tbody>
</table>
ANNEXURE

Annexure 1: HAUSMAN TEST
LIST OF TABLES

Table 1: Corruption Perception Index ranking in African Countries..........................13
Table 2. Background characteristics of the Study.........................................................33
Table 3. Trend is FDI flows and corruption by natural resources status .................34
Table 4. Fixed effects and Random effects estimates of the impact of corruption on FDI...35
Table 5 Investigate heterogeneity in the impact of corruption on FDI inflows by natural resource .........................................................................................................................35
LIST OF ACRONYMS

FDI-Foreign Direct Investment
GDP-Gross Domestic Product
GDP Per Capita-Gross Domestic Product per capita
CPI-Corruption Perception Index
SSA-Sub Saharan Africa
OECD-The Organisation for Economic Co-operation and Development
BRIC-Brazil, Russia, India and China
UNCTAD-The Organisation for Economic Co-operation and Development
SADC-Southern African Development Countries
CREFSA-The Centre for Research into Economics and Finance in Southern Africa
WDR-World Development Report
WBE-World Business Environment
WIR- World Investment Report
CHAPTER 1

1.0 Introduction

The economic development of Africa has been anything but straightforward and positive. Various factors have been cited for the not so rosy African story. Amongst these, the FDI factor is noted as a potential panacea to this development narrative. Despite the need of FDI in Africa, inflows have however been relatively low compared to the rest of the world.

1.1 Background

Global FDI is a source of investment and development in all the countries both rich and poor. There is a general acceptance that FDI enhances growth through technology diffusion, human capital development, export promotion, employment generation and productivity growth.

According to Convergence Theory, a bigger share of FDI should flow into countries least developed. It’s argued that the rate of return on fresh investments should reach negligible levels in the developed world, due to reaching a saturation point. This saturation point of the developed world however is in stark contrast to the need of FDI in the developing world. The FDI returns are thus expected to be lucrative and high in the developing World, Africa included.

This postulation of the convergence theory has however been contradicted by the reality faced by the developing world. The contradiction to the theory has led many economists to try investigate the country specific factors that pull or push FDI. Traditionally FDI has been seen as largely pulled/pushed by natural resources endowment and market size. In Africa this perception was and is strongly held especially with past consistent data from three of Africa’s biggest FDI pullers: the three largest recipients of FDI used to be Angola, Nigeria and South Africa. The three accounted for 65 per cent of FDI flows to the region. (World Bank, 2004b).

Asiedu (2000) disagrees with the notion that mainly natural resources endowment and market size are the major pull factors for FDI. The idea that FDI pull is in the hands of only uncontrollable factors is rejected. She argues that we therefore should experience no investment in less natural endowed countries with poor markets.
Monkam et al (2016) agree though with the traditional pull factors of FDI. They suggest that the vast resources on the African continent have been the largest driver of FDI. Resource rich African countries they argue are the major recipients of FDI. To support their argument they cite data from 2013. In that year FDI to countries high in natural resources endowments in Sub-Saharan Africa accounted for 95 percent of the increase in FDI to Africa.

According to UNCTAD World Investment Directory, (2014), countries like Nigeria, South Africa, Angola and Mozambique, who combined account for almost three quarters of Africa’s commodities export received almost three quarters FDI of the inflows to Africa between 2001 and 2007. Of late though other countries that are not really big on natural endowments such as Ghana, Ethiopia, Kenya, Uganda and Mauritania have joined the bandwagon of top FDI destinations. It is argued that these countries have come to the party due to an increase in the population’s purchasing power, stable macro-economic environment and evolving consumer tastes.

Rwanda a country not so endowed with natural resources seems to give a more holistic approach on the pull and push factors influencing FDI. According to the research by Steven N Balinda (2016) the following factors influenced their FDI attraction:

- constitutional and legal protection of FDI
- free transfer of capital and profit gains,
- market and resources availability,
- strategic location,
- hospitality towards FDI,
- security, tax system,

Rwanda Development Board (RDB) has published on its website the reasons for investing in Rwanda, as

- market efficiency
- institutional pillars to promote FDIs:
  - Sustained High Growth
  - Robust Governance
- Access to markets
- Untapped investments opportunities
- Rwanda is Highly Competitive
- Excellent Business Environment

All these factors cited by Rwandan authorities are supported by global scholars as critical ingredients in attracting FDI.

**FDI Statistics**

According to the OECD (2018) report, global FDI flows decreased by 7% to USD 1.625 billion in 2016 compared to 2015. European Union inflows increased by 22%. OECD members had an increase by 6%. FDI inflows grew by 21% to G20 countries. Inflows to OECD G20 countries increased by 48%, but inflows to non-OECD G20 countries fell 18%.


Global foreign direct investment (FDI) flows fell by 23 per cent (2017) to $1.43 trillion.
FDI flows to developing economies remained stable at $671 billion, seeing no recovery following the 10 per cent drop in 2016.

- FDI flows to Africa continued to slide, reaching $42 billion, down 21 per cent from 2016. The decline was concentrated in the larger commodity exporters.

- Flows to developing Asia remained stable, at $476 billion. The region regained its position as the largest FDI recipient in the world.

- FDI to Latin America and the Caribbean rose 8 per cent to reach $151 billion, lifted by that region’s economic recovery. This was the first rise in six years, but inflows remain well below the 2011 peak during the commodities boom.

- FDI in structurally weak and vulnerable economies remained fragile. Flows to the least developed countries fell by 17 per cent, to $26 billion

**Africa’s Story**

Odusola (2016) argues that Africa’s experience on inward foreign direct investment (FDI) presents a paradox. Classic economists will agree that capital is expected to flow from countries with low yields due to investment saturation to countries or regions with high yields. Africa’s share of the global net FDI has been very low compared to the developed world despite the many opportunities inherent in the continent.

For instance, sub-Saharan Africa’s share of global net FDI between 2010 and 2016 stood at 1.87%, compared to 30.34% for Europe, 26.45% for East Asia and Pacific, 17.334% for North Africa and 13.25% for Latin America and the Caribbean. Global FDI inflows are now close to $1.7 trillion globally yet Africa, more so sub Saharan Africa struggles to break USD 100billion mark combined. In 2017, Angola, Egypt, Nigeria, Ethiopia and Ghana were the most attractive FDI destinations.
Africa Sub Region Specific Analysis 2010-2017(USD Billions)


- North and West Africa used to receive most of the FDI inflows. The diagram however also show Southern Africa catching up

**Corruption**

A topical issue to date has been the contribution of corruption to FDI inflows into Africa. Most African countries are considered corrupt with many amongst the most corrupt nations in the world. Of late most multinational institutions have been focusing Africa’s governance dilemma. Most African countries are in the infancy of their democracy and their institutions are a weak. The culture is tainted and there appears to be a lack of effort from the executive to encourage efficient and effective use of resources. The scourge of rampant corruption ravaged Africa with its Leaders such as Sani Abacha, Mobutu Sseko and Hosni Mubarak presenting the ugly face of African Corruption.
The table below lists the ranking and scores on of African countries on the topical mater

<table>
<thead>
<tr>
<th>Country</th>
<th>CPI Score 2018</th>
<th>CPI Ranking</th>
<th>Country</th>
<th>CPI Score 2018</th>
<th>CPI Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seychelles</td>
<td>66</td>
<td>28</td>
<td>Sierra Leone</td>
<td>30</td>
<td>129</td>
</tr>
<tr>
<td>Botswana</td>
<td>61</td>
<td>34</td>
<td>Togo</td>
<td>30</td>
<td>129</td>
</tr>
<tr>
<td>Cabo Verde</td>
<td>57</td>
<td>45</td>
<td>Guinea</td>
<td>28</td>
<td>138</td>
</tr>
<tr>
<td>Rwanda</td>
<td>56</td>
<td>48</td>
<td>Comoros</td>
<td>27</td>
<td>144</td>
</tr>
<tr>
<td>Namibia</td>
<td>53</td>
<td>52</td>
<td>Kenya</td>
<td>27</td>
<td>144</td>
</tr>
<tr>
<td>Mauritius</td>
<td>51</td>
<td>56</td>
<td>Mauritania</td>
<td>27</td>
<td>144</td>
</tr>
<tr>
<td>Sao Tome and Principe</td>
<td>46</td>
<td>64</td>
<td>Nigeria</td>
<td>27</td>
<td>144</td>
</tr>
<tr>
<td>Senegal</td>
<td>45</td>
<td>67</td>
<td>Central African Republic</td>
<td>26</td>
<td>149</td>
</tr>
<tr>
<td>South Africa</td>
<td>43</td>
<td>73</td>
<td>Uganda</td>
<td>26</td>
<td>149</td>
</tr>
<tr>
<td>Burkina Faso</td>
<td>41</td>
<td>78</td>
<td>Cameroon</td>
<td>25</td>
<td>152</td>
</tr>
<tr>
<td>Ghana</td>
<td>41</td>
<td>78</td>
<td>Madagascar</td>
<td>25</td>
<td>152</td>
</tr>
<tr>
<td>Lesotho</td>
<td>41</td>
<td>78</td>
<td>Eritrea</td>
<td>24</td>
<td>157</td>
</tr>
<tr>
<td>Benin</td>
<td>40</td>
<td>85</td>
<td>Mozambique</td>
<td>23</td>
<td>158</td>
</tr>
<tr>
<td>Swaziland</td>
<td>38</td>
<td>89</td>
<td>Democratic Republic of the Congo</td>
<td>22</td>
<td>160</td>
</tr>
<tr>
<td>Gambia</td>
<td>37</td>
<td>93</td>
<td>Congo</td>
<td>20</td>
<td>161</td>
</tr>
<tr>
<td>Tanzania</td>
<td>36</td>
<td>99</td>
<td>Angola</td>
<td>19</td>
<td>165</td>
</tr>
<tr>
<td>Cote d'Ivoire</td>
<td>35</td>
<td>105</td>
<td>Chad</td>
<td>19</td>
<td>165</td>
</tr>
<tr>
<td>Zambia</td>
<td>35</td>
<td>105</td>
<td>Congo</td>
<td>19</td>
<td>165</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>34</td>
<td>114</td>
<td>Burundi</td>
<td>17</td>
<td>170</td>
</tr>
<tr>
<td>Niger</td>
<td>34</td>
<td>114</td>
<td>Equatorial Guinea</td>
<td>16</td>
<td>172</td>
</tr>
<tr>
<td>Liberia</td>
<td>32</td>
<td>120</td>
<td>Guinea Bissau</td>
<td>16</td>
<td>172</td>
</tr>
<tr>
<td>Malawi</td>
<td>32</td>
<td>120</td>
<td>Sudan</td>
<td>16</td>
<td>172</td>
</tr>
<tr>
<td>Mali</td>
<td>32</td>
<td>120</td>
<td>South Sudan</td>
<td>13</td>
<td>178</td>
</tr>
<tr>
<td>Djibouti</td>
<td>31</td>
<td>124</td>
<td>Somalia</td>
<td>10</td>
<td>180</td>
</tr>
<tr>
<td>Gabon</td>
<td>31</td>
<td>124</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A look at the above table highlights a strong correlation between corruption and development. The most corrupt countries are also the least developed. Given that FDI inflows aid in development, it can then be also assumed that overtime the most corrupt countries may fail to attract significant FDI.
1.3 Problem Statement

Classical economic theory, the Convergence Theory suggests that Africa should be receiving its fair-share of Global FDI but as the figures highlight, reality is far from the notion. Despite being natural resource rich Africa still fails to attract significant FDI inflows. The country specific factors at play have to be investigated. Odusola (2016) argues that Africa’s experience on inward foreign direct investment (FDI) presents a paradox.

1.4 Research Objectives

- Investigate the impact of natural resources on FDI inflows
- Investigate impact of corruption on FDI inflows
- Investigate heterogeneity in the impact of corruption on FDI inflows by natural resource endowment

1.5 Research Questions

- Do natural resources status have an impact on FDI inflows?
- Does corruption have an impact on FDI inflows?
- Is there heterogeneity in the impact of corruption on FDI inflows by natural resource resources?

1.6 Research Hypothesis

Many scholars assert that natural resources are the key drivers of FDI inflows into Africa. Scholars such as Asiedu (2006) assert that countries that are endowed with natural resources or have large markets will attract more FDI than the ones with little natural resources. We however have other scholars that believe in the “Dutch Disease” as far as natural resources and FDI are concerned. The following hypotheses (1) is hence proposed in light of this background:

- \( H_{10} \): natural resources have significant impact on FDI inflows
- \( H_{11} \): natural resources have no impact on FDI inflows
Corruption is considered by many scholars as the albatross around Africa’s development. Its impact on development is arguably negative but its impact on FDI is still debatable. Two (2) schools of thought emerge, the grabbing and greasing hand. Dahlström and Johnson (2007) argue that corruption increases the cost of FDI. Bribes act like an extra tax on investors and the uncertainty created makes it difficult to forecasts the future as more and more officials may come and claim benefits from the investors, without investors having realized the benefits of the corruption. The greasing hand theory argues that in corrupt aids economies with little institutional frameworks by oiling the wheels of industry. The following hypotheses (2) is hence proposed in light of this background:

- $H_{2_0}$: Corruption has no impact on FDI inflows
- $H_{2_1}$: Corruption has an impact on FDI flows

It’s argued that prevalence of natural resources determines the impact of other variables such as corruption. It’s argued that in natural resource rich country the level of corruption is high but it will not be a deterrent of FDI. Zhan (2011) argues that one major causal mechanism of resource curse is that reliance on resources leads to bad governance and weak political institutions that suffer widespread corruption. However, others argue that abundance of natural resource does not necessarily translate into weak institutions (corruption) as political elites can invest windfall revenues from resource in building state capacity. The following hypotheses (3) is hence proposed in light of this background:

- $H_{3_0}$: there is heterogeneity in the impact of corruption on FDI inflows by natural resource status
- $H_{3_1}$: there is no heterogeneity in the impact of corruption on FDI inflows by natural resource status
1.7 Justification

FDI is considered a source of developmental funds according to economic theory such as the Harrod Dormar Growth Model. Countries such as Japan, Germany, and South Korea have in-part developed due to FDI inflows.

It is then critical to study why this important economic growth variable is not being attracted into Africa, a continent in need of development. This despite the abundant natural resources and cheap labour.

The impact of natural resources as a pull factor of African FDI flows is necessary to investigate so that countries can be clear on the need to improve on other noted variables such as ease of doing business property rights, economic and political stability.

The contribution of governance and indeed corruption has to be investigated so that countries are clear on the key impediments to FDI inflows and measures can be put in place to tackle the vice of corruption head-on.

The global village demands that all global players are cognisant of the key developmental variables that separate countries and indeed continents. Countries and continents can only improve on what has been highlighted to them.

It’s also to understand if factors that determine the choice of one African country over another are the same choices that determines FDI inflows between continents.

The study will assist African governments to focus on the key areas that allow them to attract more FDI inflows

1.8 Delimitations

The study will consider twenty two countries (22) in Africa with available data. World Bank data, Panel data is used from 2006-2016.
1.9 Assumptions

- It's assumed FDI is critical for development
- Secondary data used is accurate and robust
- Resource depletion rate is an accurate measure of a country’s natural resources
- Corruption’s impact on FDI flows is strongly affected by endowment status
- Natural resources endowment has a bearing on FDI inflows
- There is heterogeneity in the impact of corruption on FDI inflows by natural resource endowment
- It’s assumed that FDI inflow data hasn’t been manipulated.
- It’s assumed that all relevant data is captured consistently across all the variables within the twenty-two countries.
- It’s assumed that all proxies used are able to depict the actual variable being sought.

1.10 Limitations

Secondary data from World Bank had to be use due to primary data costs considerations and bias considerations. Unfortunately most countries in Africa do not submit information on open access platforms thus limiting the number of countries or indicators one can use. Some of the variables targeted for the research did not have the specific targeted data hence proxies had to be used i.e. Military Expenditure to GDP to measure Political Instability. Naturally data meant for other uses was used and converted for our research work. We run the risk of measurement error and omitted variables error.

1.11 Definition of terms

Corruption:

It’s the inefficient and ineffective use of resources. At most times the inefficiencies and red-tape is meant to benefit few selected individuals, who prioritize personal wealth accumulation at the expense of a country or communities development.
Natural Resources:

Natural resources refers to both renewable and none-renewables resources such as minerals, water bodies, gas, oil and even sunlight. These resources are sought after by various business entities.

FDI:

FDI refers to foreign direct investments. It implies capital inflow into a host country by foreigners seeking business opportunities that naturally pay higher than in the own countries.
CHAPTER 2
LITERATURE REVIEW

2.1 Theoretical

The section of the literature review will expound on the theories and various models that seek to explain and bring light to the FDI phenomena. Theories such as the Convergence, Comparative and Competitive advantage are investigated.

2.1.1 FDI theories

2.1.1.1 Convergence Theory

The convergence theory by Clark Kerr (1983) states that over time nations that are developed should have less and less growth than nations still developing. The reason being that investment capital is expected to move from the economies with lower returns (developed) to the regions with higher returns or yields. It’s argued that capital will shy away from economies that are reaching a point of investment saturation to economies that are still thirsty for development and growth. With this theory as guiding tool many in the 1950s expected Africa to close the gap on FDI inflows and eventually surpassed growth of the developed world.

2.1.1.2 Harrod-Dormar Growth Model

The Harrod-Dormar Growth model (1939 Harrod, 1947 Domar) argues that savings that are channelled towards investment are the engine of economic growth of a nation. In cases were the savings rates are low like in Africa it’s argued that foreign savings i.e. FDI will plug the hole left by domestic savings, to foster growth. According to the model FDI becomes a necessary tool for growth and development hence the emphasis of FDI growth in Africa.

2.1.1.3 Osmosis Theory

Borrowing from nature the osmosis phenomena observed Nollet (1748) argues that matter, gas, liquid will flow from a region of higher concentration to a region of lower concentration until an equilibrium position is found. In other words nature dictates that surplus units shed-off
excess matter to deficit units until there is parity. This phenomena has same conclusion to convergence theory. It’s expected through this phenomena that Capital rich nations should see more of their capital flowing to countries with low capital.

2.1.1.4 Comparative Advantage Theory

According to the comparative advantage theory by Ricardo (1817) countries should concentrate on those activities that they are better than competition. The theory in a way argues that resource rich African States should focus their intention on their scarce resources and sweat them to their maximum benefit. It’s therefore stands to reason that natural resources present a comparative advantage that should attract FDI.

2.1.1.5 Competitive Advantage Theory

According to Michael Porter a country has to establish a competitive advantage. In this instance competitive advantage should be established in FDI inflows. Michael Porter considers the competitiveness of a country as a function of four major determinants:

- factor conditions;
- demand conditions;
- related and supporting industries; and,
- Firm/country strategy, structure, and rivalry.

✓ Factor Conditions

- Human resources
- Physical resources
- Knowledge resources
- Capital resources
- Infrastructure resources

✓ Demand Conditions

- Home Demand Composition
- Demand Size and Pattern of Growth
- Internalization of Domestic Demand
Related and Supporting Industries
Firm Strategy, Structure, and Rivalry

Porter also argues that opportunities and governance determine the competitive advantage. In this regard investment yields can be enhanced by natural resources, government policies, rule of law and property rights.

2.1.2. Natural Resource Theory

2.121 Dutch Disease

The availability of natural resources may not necessarily mean the flow of capital and FDI to exploit the resources. This phenomena was experienced in the Netherlands a country abundant in mineral and natural resources. Despite its vast mineral and gas wealth at a certain point in time the Dutch economy stagnated as Capital and FDI failed to flow to spur growth. This phenomena was termed the Dutch Disease, describing slow growth on an economy dependent on intensive use of natural resources. Barro and Sala-i-Martin (1995)

Bailey et al (2007) argue that long-term stability in resource intensive industries is conditional upon the resource maintaining value and exclusivity. If the resource is discovered elsewhere and is no longer sufficiently exclusive, prices fall, and the resource intensive industries fail.

Other theorists however believe that natural resources in the hands of an efficient government are a blessing. Botswana is cited as example of natural resources being used efficiently to attract FDI and hence the growth and development of the nation

2.1.3 Corruption Theory

Theoretically corruption has been cited as negative for FDI inflows as it is tax on investment. The likelihood that the corrupt will consistently seek more hand-shakes makes the cost of corruption to the would-be investor unquantifiable at any point in time hence unlimited risk.

Quazi (2014) postulates that corruption theoretically can act as either a grabbing hand by raising uncertainty and transaction costs, which should impede FDI, or a helping hand by
“greasing” the wheels of commerce in the presence of weak regulatory framework, which should facilitate FDI.

The “greasing the wheels of commerce” argument is presented by some studies. It’s argued that countries with weak legal and regulatory systems can have corruption as a catalyst of FDI inflows—Bardhan (1997).

### 2.1.4 Correlation between Corruption and Natural Resources

Kolstad and Tina Søreide (2009) argue that corruption is the development problem in resource-rich countries. In resource rich economies corruption is said to take the form of rent seeking and patronage.

Karl; 1997; Leite & Weidmann (1999) argue that vast natural resources are a heavy temptation for corruption. Ross, (1999) argues that the nationalisation of resources created an opportunity for state employees in resource rich countries to be corrupt.

Gylfason (2001) argues that most resource rich countries are not transparent and lack defined property rights which leads to corruption. The lack of institutions and democracy in resource rich countries is cited as giving raise to corruption due the power a political elite wields-.Sonin, (2003)

### 2.2 Empirical Evidence

#### 2.2.1 FDI Background Studies

Empirical studies have seen little evidence of the applicability and effectiveness of the following FDI theories and models in Africa

- Convergence
- Harrod Domar Model
- Osmosis
• Comparative

The models and theories cited earlier have lacked empirical merit in Africa except the Competitive Advantage theory by Michael Porter.

**Competitive Advantage**

The rest of Africa countries have been seeking to improve their FDI competitive advantage by cultivating the right environment that pulls FDI inflows. Countries like Rwanda, Ethiopia and Ghana are at the fore-front of improving the competitive advantage and FDI has been noted to follow by some measure the competitive advantage theory.

African countries have sought to pull FDI by undertaking the some of the following: macro-economic and political stability, key infrastructure development, improving the ease of doing business, growing the market and trade openness.


Asiedu (2002) and Zeng et al. (2001) make the argument that the determinants of FDI inflows in SSA countries differ fundamentally from other regions and those policies that have proven successful in other regions may not be as successful in SSA. Asiedu (2004) finds competitive advantage in market size, infrastructure, and quality of education of the labour force, macroeconomic and political stability to all influence FDI inflows to the region. Suliman and Mollick (2009) studied 29 countries in Africa and determined that civil rights, political instability and literacy rate are factors that encourage or discourage firms to invest.

Fedderke and Romm (2006) studied South Africa and determined that trade openness, political stability and market size boost FDI inflows. Nyamwange (2009) and Abala (2014) found that FDI into Kenya is pulled by trade openness, infrastructure, macro-economic stability and political stability. In a study of Lesotho Malefane (2007) highlighted that macro-economic and political stability, South African Market are major determinants of FDI inflows.
2.2.2 Natural Resources

Pendergas et al (2008) reason that in the late nineteenth and early twentieth century, Britain and France gained economic prosperity by exploiting the natural resources of their colonies. Britain benefited from gold and diamond extraction in South Africa, and France from harvesting rubber and mining bauxite in Guinea.

During the nineteenth century, land was one of the most important natural resources, and land abundant countries such as Canada, the United States and Australia had some of the highest real wages in the world. (Weil, 2005). Britain, Germany and the US relied heavily on coal and iron ores deposits during their industrialization phases. (Sachs and Warner, 1995).

Asiedu (2006) concludes that the natural resources factor is strong no wonder South Africa had almost 36% of African FDI inflows in year 2004, 16 per cent to Nigeria, 13 per cent to Angola and 19 per cent to the remaining 45 countries in the region.

Dunning (1993) argues and gives empirical evidence that the first form of FDI into Africa was primarily driven by the natural endowment factor. The industrialization of Europe and North Africa prompted the scramble for countries rich in resources and primary products.

According to Onyeiwu and Shrestha (2004) the availability of natural resources has a positive relationship to FDI flows into Africa. Kolstad and Tondel (2002) argue that those countries rich in oil and other natural resources, for example Libya, and Nigeria, are able to attract higher FDI inflows.

In the mining industry and oil sector Africa is a prominent recipient of Foreign Capital and these two sectors have the greatest potential for future FDI inflows. Basu (2002) Lee (2012) argue that resource endowment has positive but insignificant impact FDI.

Balinda and Manag (2016) conclude that the availability of natural resources is a prime requirement before company establishment by foreign players. They conducted a survey and
found out that 76.6% of respondents strongly agreed that in Rwanda natural resources are a critical component in attracting FDI. In total 96.7% of those surveyed agreed with the assertion.

Stivell et al. (2015) agree on the natural resources factor. Their study in Congo argues that the discovery and exploitation of new oil wells in Congo is one of the major FDI determinants.

Certain studies however have shown evidence of natural resource being a curse rather than a blessing. Kafayat et al. (2016) conclude that oil exporting SSA countries appear to suffer from a “natural resource” curse.

Manzano and Rigobon (2001) built on Sachs and Warner’s model. The model estimated the effect of natural resources on economic growth. Panel data and alternative measures of the non-resource side of the economy were used. Their research showed that the negative impact of the resource curse appears in their cross-sectional data, but is insignificant when they estimate a fixed-effects panel data model.

According to UNCTAD (1998) natural resources are no longer as critical factor as they used to be in yester-year, though they are still very important for inward investment.

2.2.3 Corruption

Asiedu (2000) looked into the factors that affect or constrain FDI inflows in Africa. She focused her paper on 4 surveys previously done. The following are the four surveys:

(i) WBE Survey: The survey was carried in 1999/2000. The survey had 10,000 participating organisations in 80 jurisdictions. SSA was re-presented by 413 multinational organisations in 16 countries. A four-point scale was used to measure the severity of each inhibiting FDI factor. 8 research subjects were used.

(ii) WDR in 1996/7 Survey had 3,600 organisations in 69 jurisdictions. SSA had 549 multinational companies in 22 countries. Nine (9) of them were asked to rate FDI inhibiting factors in Sub-Saharan Africa. They were asked to rate on a six point scale, the severity of each particular factor (1 to 6).

research subjects Ten (10) of them were asked to rate FDI inhibiting factors in Sub-Saharan Africa.

(iv) CREFSA Survey: The survey had 81 multinationals in SADC. The survey subjects, 11 of them, were asked to rate FDI inhibiting factors in Sub-Saharan Africa.

The four research works cited as the chief cancer stopping the flow of FDI into Africa.

Tokunova (2015) in his study of the Developed and BRIC Countries established that corruption has both a positive and negative relationship with FDI. In the first world countries with low corruption, the low corruption positively affected FDI inflows and the reverse is true in developing countries though the negative effect is not significant, he argues. The study suggests that ceteris paribus, countries with high level of CPI receive relatively higher amounts of FDI inflows compared to the countries with low levels of CPI.

Mauro (1995) postulates that corruption has a direct and indirect effect on FDI inflows. He argues that corruption also affects the other variables that impact FDI inflows. Mauro (1995) investigates how corruption and other 55 factors suggested by Business International influences the economic growth of 68 countries chosen by Business International. The conclusion is that corruption is a double edged sword.

Tanzi and Davoodi, (1997) and Gupta et al., (2000) agree on both the direct and indirect link of corruption to FDI. They conclude that corruption negatively affects every facet of the economy and its social fabric.

A study by Wei (2000a) contrasted “the greasing the wheels of commerce” studies. Wei analysed bilateral FDI flows from 12 home countries to 45 host countries, and found that corruption acted like a tax and reduced FDI. Voyer and Beamish (2004) studied a sizeable number of nearly 30,000 Japanese FDI investments in 59 countries, and concluded that Japanese FDI in developing countries, was strongly affected by corruption. Ketkar et al. (2005) found that corruption impeded FDI inflows to a sample size measuring 54 countries.

Cuervo-Cazurra (2006) found out that host country corruption reduces FDI from home countries that are signatories to a prominent anti-corruption legislation (OECD Convention on Combating Bribery of Foreign Public Officials in International Business Transactions). However, the contrary was found for FDI flowing from relatively corrupt home countries to
corrupt host countries, which suggests that investors from relatively corrupt home countries are more likely to invest in host countries with high levels of corruption.

Freckleton et al. (2011) examined the association between FDI, economic growth of a country and corruption in developing and developed countries covering the period of 1998-2008. They suggest that there is a significant effect of corruption on FDI in the short and long runs. Moreover, they state that corruption is now recognized as a policy variable that affects almost all aspects of social and economic life, especially in developing countries.

Quazi (2014) in a study carried-out in East Asia and South Asia, concluded that corruption had a significantly negative impact on FDI inflows, which gives weight to the “grabbing hand” hypothesis.

### 2.2.4 Correlation between Corruption and Natural Resources

Kolstad and Søreide (2009) argue that Nigeria and Angola are the two largest oil-producing countries in Africa. Corruption is extremely high in these nations. Nigeria in current CPI rankings is number 144 and Angola is number 165. In 2007 the chairman of Nigeria’s Economic and Financial Crimes Commission estimated that more than $380bn of public funds were looted by public officials since 1960. In Angola more than USD 1billion oil funds vanished in the early 2000s McMillan (2005). Petermann et.al (2007) argues that this is just two of the most gripping evidence that natural resource rich countries attract high levels of corruption.

In their study of the relationship between natural resources and corruption, Kolstad and Søreide (2009) concluded that corruption is at the core of the resource curse phenomenon. They reasoned that lessons and institutions in advanced economies could not be positively copied and implemented to a developing country context due to the vice of corruption. Instead, developing countries had to fight the vice of corruption in the form of rent-seeking and patronage. A thorough understanding of key structural features is necessary in dealing with corruption and the many agents that benefit from it.
The positive experiences of resource-rich developing countries such as Botswana suggest that the resource curse is not always the inevitable outcome. Botswana however seems like an outlier African economy.

Zhan (2011) studied the 31 provinces of China to establish the relationship between natural resources and corruption. The Panel data analysis compared the provincial corruption rates between 1999 and 2007 revealed a robust positive correlation between the two variables natural resources and corruption. The research worked targeted corruption of public officials. Using cross-provincial and longitudinal data analysis, it finds that the abundance of and dependence on mineral resources undermine local political institutions by increasing the propensity for corruption.

Zhu & Wu (2011) concluded that in the case of China the abundance of natural resources gave rise to the vice of corruption through various sectors. He studied corruption across ten sectors. He established that mining sector corruption was top three ranked as it paid government officials the most tributes.

Zhan (2011) studied the 31 provinces of China. The research work lands support to the theory that natural resources are good ground for corruption to thrive. In their work they controlled for economic development. The fact that resource abundance and dependence are significant even after controlling for the level of economic development, suggests that there is indeed a natural resource curse at provincial level in China.

The results of Zhan (2011) were consistently statistically significant. The result confirms that the more people working for the state, the more likely it is for some to abuse the official positions for private gains.
CHAPTER 3

3.0 METHODOLOGY

The vast area that needed to be covered and complexity of data and its sources made use of primary data impossible in the research. The various sources of bias and indeed the extreme budgetary weight made the use of reliable secondary data rational in this study. The research relied on secondary data from World Bank.

Though the World Bank is an accepted source of data, its usefulness is at times limited due in part to lack of participation or misleading data from most countries. Most African Countries simply lack reliable sources of data and at least deliberately misled even the World Bank. The World Bank though given its extensive coverage has developed ways and means to try mitigate input error.

The research wanted to work with the entire population of 52 of African countries. However due to serious data limitations on the variables, only countries with data had to be picked. A sample of 22 African countries was used using elimination technique. The resulted in 262 observations.

There was a deliberate attempt to have 10 year data, as recent empirical studies have suggested that the impact of FDI is difficult to measure in the year corresponding independent variable but rather over a period of time.

For the purpose of this work Panel data was used. According to Yaffee (2003) and Jirata (2014) asserts the many advantages associated with Panel data such as increasing sample size that contributes to more accuracy of measurement of the true population parameter. Panel data also accounts for heterogeneity across countries and attempts to control for multicollinearity and omitted variables.

3.1 Estimation methods

Jirata (2014) asserts that Fixed and Random effects models are the most common models used to take advantage of special time structure. Mundlak (1978) retorts that the main point of variance between fixed effects model and Random effects model is that in the latter the omitted time-invariant variables are assumed to be uncorrelated with the included time-varying
covariates while in the former they are allowed to correlate. Hsiao (2003) argues that random effects model has greater efficiency relative to the fixed effects model leading to smaller standard errors and higher statistical power to detect effects.

We use of the Hausman test to determine which of the two (2) models can be used.

Random effect: \( y_{it} = \beta_0 + \beta_1 x_{it1} + \cdots + \beta_k x_{itk} + a_i + u_{it} \)

- unobserved effect \( a_i \) is uncorrelated with each independent variable in all the periods: 
  \( \text{Cov}(x_{itj}, a_i) = 0, t = 1,2,\ldots,T; \ j = 1,2,\ldots,k. \)
- The key difference between fixed and random effects is that \( a_i \) and \( x_{itj} \) are correlated in the fixed effects, while random effect is not allowed that correlation.
- We utilize the Hausman test to choose between fixed-effects and random-effects.
- Hausman test is a test that whether the errors are correlated with the regressors, the null hypothesis is they are not correlated with the regressors.
- When the Chi-squared value is smaller than 0.05 (i.e. significant), we use fixed effects (Cameron & Trivedi, 2010).

Given that the results of the Hausmann test presented in the annexure show that results from Random Effects model are statistically different from the Fixed Effects Model, we employed the Fixed Effect Model as the main specification and gave the Random Effect Model a Robustness check to estimate the following equations:

I estimate the following equation to test hypotheses 1&2

\[ \text{FDI}_{it} = \beta_0 + \beta_1 \text{Corr} + \beta_2 \text{Ne} \cdots + X^{1it} \alpha \] \hspace{1cm} (1)

To test hypotheses 3 there is a modification done to equation 1

\[ \text{FDI}_{it} = \beta_0 + \beta_1 \text{Corr} \times \text{Ne} + \beta_0 + \beta_1 \text{Corr} + \beta_2 \text{Ne} \cdots + X^{1it} \alpha \] \hspace{1cm} (2)

- \( FDI \)-foreign direct investment
- \( Ne \)-Natural Resources Status
- \( Corr \)-Corruption

\( X^{1it} \alpha \)- Explains all the other control variables listed below

- \( edu \)- education
- \( ps \)-political stability
3.3 Description of variables

**Education Enrolment**

Past and present work has shown that education is critical in creating a skilled labour force a critical ingredient for effective productivity. Net Primary School Enrolment is the proxy that was chosen as it had data across the 22 chosen countries. Literacy is hence expected to have a positive impact on FDI flows.

**Natural Resource Status**

Literature both theoretical and empirical supports the natural resource endowment a factor in attracting FDI in Africa. In fact Africa’s history is shaped by the pursuit of its natural resources be it from the slave trade, colonization and even recent history with developed world. Unfortunately a proxy had to be used to measure Resource Endowment namely Natural Depletion. The proxy only measures the extent to which natural resources are depleting in country and may not adequately measure how much of the natural resource a given country has.

**Size of Local Market**

It has been argued that the size of the local market is critical in influencing FDI. It’s an argument used to explain why every global brand pursues a presence in China and India, to countries combined that have probably 30% of global population. In Africa Nigeria with its close 160 million people is fingered as a country benefiting from the numbers. The size of the local market is hence measured by a proxy population density.
Capacity of Local Market to Consume

Besides the size of the market one argument is that it’s not necessarily the size of the market but rather the buying power of that market. This argument is strongly supported by FDI inflows into USA and the rest of Europe. A country like Netherlands and Scandinavian countries may attract more FDI than populous countries. In fact the USA it’s established consumes a third of global production, and hence any country worth its salt would require a presence in USA. The study chose GDP per Capita as measure of market purchasing power.

Political Instability

Literature both empirical and theoretical suggest that Capital is emotional and very sensitive to instability or any assumed instability. Risk of coups, assassinations and unstable political environment have been suggested as one of Africa’s Achilles heels. Political instability brings complexity and uncertainty in business, something Capital tries to avoid. For this study Military expenditure as a percentage of GDP was used to infer into likely instability of a country.

Infrastructure

Much attention is focusing on supporting infrastructure for business. Most African governments are making efforts to market it easy to trade by cutting the logistical cost of doing business. The research work chose to make use of Trade Related Infrastructure Rating.

Ease of Doing Business

The Ease of doing business has been topical. It encompasses bureaucratic red tape and inefficiencies. For this study the Business Regulatory Environment Rating was used to infer into the Ease of Doing Business.

The business regulatory environment also infers into the Economic environment that either discourages or encourages investment. Variables such as inflation, exchange rate, budget deficit are also factored-in, in the business regulatory environment.
Property Rights and Governance Rating

Closely associated with Ease of Doing Business is Property Rights and Governance. Literature suggests that Capital takes flight from countries that have high risk of expropriation and rule of law. For this variable Property Rights and Governance Rating was used.

Corruption

Corruption has been reported as the cancer of Africa. Most theories and studies have revealed that corruption is a tax on both business and citizens. The underground nature of corruption make it more likely that the corrupt have to ship-out their funds to destinations far from host country, hence denying any economy access to own resources. For this variable Transparency, Accountability and Corruption Rating was used.

Macro-Economic Environment

It has been argued business world-over prefers a stable economic environment, were inflation is termed and the exchange predictable. Instability causes major business risks that a business would not want. Also major instability has been known to lead to political upheavals hence the need to contain the macro-economic environment
4.1. Introduction

A regression tests on the relationship between the Independent variables and the dependent variables were done. The random and fixed effects tools were applied. Background characteristics showed that there isn’t much difference between the independent variables in resource rich countries and resource poor countries. The impact of corruption and natural resources is tested.

4.2. Descriptive analysis

Table 2. Background characteristics of the Study

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Depleted [D]</th>
<th>None depleted [N]</th>
<th>Difference in means [D - N]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Education enrolment</td>
<td>79.88</td>
<td>23.87</td>
<td>66.34</td>
<td>32.14</td>
</tr>
<tr>
<td>Business reg [1-5]</td>
<td>3.21</td>
<td>0.70</td>
<td>3.01</td>
<td>0.60</td>
</tr>
<tr>
<td>Prop Rights [1-5]</td>
<td>2.82</td>
<td>0.68</td>
<td>2.55</td>
<td>0.57</td>
</tr>
<tr>
<td>GDP Per Capita [1-5]</td>
<td>2.92</td>
<td>4.01</td>
<td>3.55</td>
<td>4.56</td>
</tr>
<tr>
<td>Trade Infrast [1-5]</td>
<td>2.18</td>
<td>0.62</td>
<td>2.01</td>
<td>0.57</td>
</tr>
<tr>
<td>Military Exp [1-5]</td>
<td>6.09</td>
<td>3.32</td>
<td>6.49</td>
<td>3.68</td>
</tr>
<tr>
<td>Pop Density [1-5]</td>
<td>103.79</td>
<td>141.95</td>
<td>63.92</td>
<td>41.23</td>
</tr>
</tbody>
</table>

Notes. Sample size is 262. Number of years is 12. Number of countries is 22.
Educational Enrolment

Table 2 above shows the background characteristics of the sample countries by resource depletion status. According to Table 1 the mean enrolment in resource depleted countries is 66.34% whereas it is 87.42 none depleted countries. The mean difference of 21.08% is statistically significant @1% level of significance.

Business Regulation

Table 2 also shows the mean Business Regulation for depleted countries is 3.01 whereas the mean for non-depleted countries is 3.33. The differences in mean is 0.32 which statistically significant at 1% level of significance.

Property Rights

The same table shows the mean Property Rights for depleted countries is 2.55 whereas it is 2.96 in none depleted countries. The mean difference is 0.41 which is statistically significant @1% level of significance.

GDP per Capita

The mean GDP Per Capita in resource depleted countries is 3.55 whereas it is 2.57 in none depleted countries. The mean difference is 0.98 which is statistically significant @10% level of significance.

Trade Infrastructure

The mean trade infrastructure in resource depleted countries is 2.01 whereas it is 2.27 in none depleted countries. The mean difference is 0.26 which is statistically significant @1% level of significance.

Political Instability

The mean trade military expenditure in resource depleted countries is 6.49 whereas it is 5.87 in none depleted countries. The mean difference is 0.62 which is statistically insignificant.

Population Density
The mean population density in resource depleted countries is 63.92 whereas it is 125.97 in none depleted countries. The mean difference is 62.05 which is statistically significant @1% level of significance.

**Objective 1:**

**To investigate the trends in FDI inflows by corruption**

Table 3. Trend is FDI flows and corruption by natural resources status – Objective 1

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Total</th>
<th>Depleted</th>
<th>Depleted</th>
<th>Non</th>
<th>Non</th>
<th>differ</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Sd</td>
<td>mean</td>
<td>Sd</td>
<td>mean</td>
<td>sd</td>
<td></td>
</tr>
<tr>
<td>FDI</td>
<td>5.58</td>
<td>11.63</td>
<td>8.75</td>
<td>17.33</td>
<td>3.82</td>
<td>5.99</td>
<td>4.93***</td>
</tr>
<tr>
<td>Transp&amp;Corruption</td>
<td>2.79</td>
<td>0.58</td>
<td>2.71</td>
<td>0.50</td>
<td>2.83</td>
<td>0.62</td>
<td>-0.12</td>
</tr>
</tbody>
</table>

**FDI inflows and corruption by natural resources status**

Table 3 shows trends in FDI inflows and corruption by natural resource status. The results in the table indicate that there is a significant difference in FDI inflows in resource rich countries (8.75) and resource poor (3.82). The inflows in resource rich countries are more than double resource poor countries, which implies that holding all else constant natural resources are still playing a significant role in making FDI decisions in Africa which tentatively lends support to Hypothesis 1 of this study.

Furthermore, the table indicates that there is no statistically significant differences in the corruption rankings of the countries that are resource endowed and those that are not endowed with resources. This finding is consistent with literature such as Acemoglu et al which states that corruption is one of the major problems in Africa’s under development as a result of low institutional quality regardless of the natural resource status of the countries themselves. Tured (2017) asserts that although corruption is seen more in underdeveloped and developing countries, it is a global problem that, far beyond a national or regional problem, can be encountered in all countries. It’s a vice found in resource rich and resource poor nations.
### 4.3. Estimation results

**Objective 2**

**Investigate impact of corruption on FDI inflows**

Table 4. Fixed effects and Random effects estimates of the impact of corruption on FDI – Objective 2

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>Fixed Effects</th>
<th>Random Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(I)</td>
<td>(II)</td>
</tr>
<tr>
<td>Transp&amp;Corruption rating</td>
<td>2.979</td>
<td>2.516</td>
</tr>
<tr>
<td></td>
<td>(3.287)</td>
<td>(3.385)</td>
</tr>
<tr>
<td>Education enrolment rate</td>
<td>0.0153</td>
<td>0.120</td>
</tr>
<tr>
<td></td>
<td>(0.0731)</td>
<td>(0.0726)</td>
</tr>
<tr>
<td>Business Reg rate</td>
<td>-1.980</td>
<td>-1.396</td>
</tr>
<tr>
<td></td>
<td>(2.311)</td>
<td>(1.711)</td>
</tr>
<tr>
<td>Prop Rights rating</td>
<td>-1.092</td>
<td>0.0888</td>
</tr>
<tr>
<td></td>
<td>(1.894)</td>
<td>(4.424)</td>
</tr>
<tr>
<td>GDP Per Capita</td>
<td>0.272</td>
<td>0.335</td>
</tr>
<tr>
<td></td>
<td>(0.194)</td>
<td>(0.220)</td>
</tr>
<tr>
<td>Trade Infrast rating</td>
<td>0.136</td>
<td>0.583</td>
</tr>
<tr>
<td></td>
<td>(0.631)</td>
<td>(0.648)</td>
</tr>
<tr>
<td>Military Exp</td>
<td>-0.369</td>
<td>0.342</td>
</tr>
<tr>
<td></td>
<td>(0.263)</td>
<td>(0.421)</td>
</tr>
<tr>
<td>Pop Density</td>
<td>-0.0104*</td>
<td>0.00220</td>
</tr>
<tr>
<td></td>
<td>(0.00543)</td>
<td>(0.0357)</td>
</tr>
<tr>
<td>Constant</td>
<td>7.712</td>
<td>-11.35</td>
</tr>
<tr>
<td></td>
<td>(5.843)</td>
<td>(19.38)</td>
</tr>
<tr>
<td>Observations</td>
<td>262</td>
<td>262</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.0940</td>
<td>0.043</td>
</tr>
</tbody>
</table>
Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

No significant relationship between corruption and FDI inflows. This lands support to hypothesis 2 that corruption does not have an impact on FDI inflows. This is consistent with literature by Akçay (2001). He used the data of 52 developing countries and reports that corruption does not have a significant impact on FDI inflows. Jadlav (2012) examined the pull FDI factors in BRICS and found that corruption wasn’t a factor among the many factors that had an impact on FDI inflows.

**Objective 3**

Investigate heterogeneity in the impact of corruption on FDI inflows by natural resource status

**Table 5 – Objective 3**

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>(1) FDI</th>
<th>(2) FDI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrupt Deplete</td>
<td>0.999*</td>
<td>0.683**</td>
</tr>
<tr>
<td>***1(corruption and resource)</td>
<td>(0.582)</td>
<td>(0.320)</td>
</tr>
<tr>
<td>Transp &amp; Corruption rating</td>
<td>2.333</td>
<td>2.341</td>
</tr>
<tr>
<td></td>
<td>(2.960)</td>
<td>(3.324)</td>
</tr>
<tr>
<td>Education enrolment rate</td>
<td>0.0240</td>
<td>0.116</td>
</tr>
<tr>
<td></td>
<td>(0.0684)</td>
<td>(0.0732)</td>
</tr>
<tr>
<td>Business Reg rate</td>
<td>-1.739</td>
<td>-1.497</td>
</tr>
<tr>
<td></td>
<td>(2.158)</td>
<td>(1.659)</td>
</tr>
<tr>
<td>Prop Rights rating</td>
<td>-0.722</td>
<td>0.00341</td>
</tr>
<tr>
<td></td>
<td>(2.021)</td>
<td>(4.369)</td>
</tr>
<tr>
<td>GDP Per Capita</td>
<td>0.258</td>
<td>0.329</td>
</tr>
<tr>
<td></td>
<td>(0.188)</td>
<td>(0.220)</td>
</tr>
<tr>
<td>Trade Infrast rating</td>
<td>0.222</td>
<td>0.568</td>
</tr>
<tr>
<td></td>
<td>(0.594)</td>
<td>(0.636)</td>
</tr>
<tr>
<td>Military Exp</td>
<td>-0.320</td>
<td>0.337</td>
</tr>
<tr>
<td></td>
<td>(0.250)</td>
<td>(0.418)</td>
</tr>
<tr>
<td>Pop Density</td>
<td>-0.00871*</td>
<td>0.0115</td>
</tr>
<tr>
<td></td>
<td>(0.00495)</td>
<td>(0.0367)</td>
</tr>
<tr>
<td>Constant</td>
<td>5.210</td>
<td>-11.68</td>
</tr>
<tr>
<td></td>
<td>(5.569)</td>
<td>(19.14)</td>
</tr>
</tbody>
</table>

Observations 262 262
R-squared 0.046
Table 5 shows heterogeneity in the impact of corruption on FDI inflows by natural resource status of the country. According to Column (I) of the table which shows the fixed effects estimates of the heterogeneity, being resource rich increase the impact of corruption on trade inflows. All else constant, Column (I) of the table shows that if a country is endowed with resources then corruption increases FDI inflows by 0.999. This result is statistically valid at 10% level of significance and lends support to Hypothesis 3 of this study.

The result in column (I) are robust to the random effects specification presented in Column (II) of the table. The results in Table are consistent with prior results such as Tured (2017) who posit that the fact that some developed and developing countries known to have high levels of corruption also attract a high amount of FDI makes corruption a double edged sword. For instance, Habib and Zurawicki (2002) and Teixeira and Guimarães (2015) report that Mexico, Brazil, Indonesia, Italy, Poland, Russia, China, Thailand, Argentina, Malaysia, Belgium, and India have attracted high amounts of FDI in recent years despite high levels of corruption. Kendall and Zhou (2009), Barassi and Zhou (2012) support the findings by suggesting that MNEs prefer countries with high corruption as they are able to create monopolies through corruption.

### 4.4 Summary

The results indicate a strong association of corruption to natural resources. Corruption is scourge for both resource rich and poor countries. There isn’t much gap on other key variables between resource rich and resource poor countries. In fact in other variables like education resource poor countries slightly out-score resource rich countries. Ultimately corruption on its own does not seem to have a huge impact on FDI inflows as all the African Countries are extremely corrupt. Our results are robust, as two different tests fixed effects and random effects models gave the same results.
Chapter 5

Summary, Recommendations and Conclusion

5.1 Summary

It has been proved by facts and numbers that Africa isn’t getting a sizeable chunk of the global FDI inflows despite its dire need of FDI. Various African governments have tried to create a competitive edge in FDI attraction through efforts to tame corruption, improve trade openness, macro and political stability, good infrastructure and improve the easy of doing business and guarantee property rights. All these initiatives have not yet yielded the desired outcomes and Africa is still receiving less than 10% of Global FDI.

This scenario in Africa is contrary to various models and economic theories like the convergence theory that argues that at some point more capital should flow to poor nations from the rich nations. The study hence chose to focus its attention on the topical issue of corruption and indeed the impact natural resource variable in FDI attraction in Africa.

The sample of 22 African countries was used. Secondary data from the World Bank was used and a regression model using fixed and random effect was deployed to come up with statistically robust results. Heterogeneity of corruption was a matter that was of keen interest to the study.

Objective 1 & Hypothesis 1

- The research sought answers on three research questions and hypothesis. The first hypothesis was that natural resources endowments have a positive pull effect on FDI inflows. The results of the study allows us to accept the null hypothesis that indeed natural resources are a pull factor of FDI in Africa. In the study natural resource rich countries had more than double FDI inflows to countries with little resources. The results are statistically significant at 1% (level of significance).
- Objective 1 was satisfactorily achieved.
Objective 2 & Hypothesis 2

- Hypothesis two (2) looks at the impact of corruption on FDI inflows. The null hypothesis is that corruption has no impact on FDI inflows. The results indicated that in both resource rich and resource poor countries corruption is high. It therefore means that corruption isn’t the differential variable that allows an investor to choose one African country over the other as corruption is generally high in Africa. We therefore accept the null hypothesis and reject the alternative hypothesis. The results are statistically significant at 1% (level of significance).

A point to note though is these results could be a lot different if the research was comparing the pull factors across continents i.e. Africa compared to Europe, Asia and Americas.

- Objective 2 was satisfactorily achieved.

Objective 3 & Hypothesis 3

- Hypothesis three (3) proposes that there is heterogeneity in corruption impact on FDI by natural resources. Again we accept the null hypothesis as the study has proved that the more resource rich a country is in Africa, the more corruption pulls FDI inflows. The result is statistically significant at 1% (level of significance).

Again it should be noted this is African empirical evidence which is likely not to apply to the entire globe or a comparison of pull and push factors across continents. It also has to be noted that the study did not address the question of how to increase FDI inflows into Africa relative to the rest of the world, which is effectively tackled by an across continents survey.

- Objective 3 was satisfactorily achieved.
5.2 Recommendations

- It’s recommended that African governments improve the ease of doing business, governance, infrastructure development, regulatory environment, macro and political stability so as to attract more global FDI than the other continents.
- All the many variables on their own may not have significant impact on FDI inflows except natural resources, hence all the other variables are only key if they are all done together and move in the same direction.
- Corruption among many supposed vices should be tackled together with other variables. Since corruption is an indicator of poor governance and poor institutions its recommended governance and key institutions be strengthened.
- Resource rich countries may never see the positive impact of FDI inflows due to corruption no wonder despite the inflow of better FDI numbers education, health, infrastructure, shelter and life expectancy of the resource rich countries is no better than the resource poor countries. It’s therefore important for all countries in Africa to take up the fight against corruption.
- Resource poor countries have to tackle the vice of corruption so that the little in FDI they are getting can benefit society.
- Dubai has proved that a country can create a unique comparative and competitive advantage from nothing to pull FDI inflows. Natural resource poor countries can create man-made resources that can pull FDI into their borders.

5.3 Conclusion

More research has to be done to establish why Africa is still lagging behind other continents in attracting FDI inflows. It has to also be noted that the next generation of studies should not pool FDI funds but rather split them by source of origin. Some scholars by observation split FDI into Asian, America and Europe and African FDI. On the face of it, it appears as if Asian and African FDI is not too sensitive to most of the variables in our model.
In-fact corruption propels this FDI as it thrives under the shadow of darkness. This phenomena seems divergent from the traditional sources of FDI. Further studies have to be undertaken to establish the authenticity of this hypothesis of distinguishable pull factors by source of funds.

This study has been a study of pooled FDI funds from various sources of origin. The study looks at the in-house dynamics in Africa that differentiate between the various African countries.

The critical role natural resources still play in attracting FDI inflows in Africa highlight the bad state of the development in Africa, were we are still over-reliant on primary products for our growth and development.

The Dutch Disease has proved primary products extraction can have limits in how far it can push the growth and development of a country. Very few nations have solely developed by over reliance of primary industry.

Africa has to quickly industrialise and also grow its service industry if it’s to catch-up with the developed world. The evil vice of corruption is now a constant menace in Africa that has to be tackled if we are to develop and earn the trust of the world. Capital is shy and it flies away at the slightest of provocation.
References


Asiedu, E., (2006), Foreign direct investment in Africa: The role of natural resources, market size, government policy, institutions and political instability, The World Economy, 29(1).


Barro, R. J., (1989), Economic growth in a cross section of countries (No. w3120), National Bureau of Economic Research


Dahlström, T. and Johnson, A. (2007), Bureaucratic Corruption, MNEs and FDI, Jönköping International Business School (JIBS), paper n. 82.

Dahlström, T. and Johnson, A. (2007), Bureaucratic Corruption, MNEs and FDI, Jönköping International Business School (JIBS), paper n. 82


Jing Vivian Zhan (2011)- The Chinese University of Hong Kong- Natural Resources and Corruption: Empirical Evidence from China


Kafayat Amusa, Nara Monkm and Nicola Viegi (2016) - Foreign aid and Foreign direct investment in Sub-Saharan Africa: A panel data analysis


Organisation for Economic Co-operation and Development- Credit Reporting System (OECD-CRS) online database.

Rahim M. Quazi (2014)-Corruption and Foreign Direct Investment in East Asia and South Asia: An Econometric.


Svetlana Tokunova- A Comparative Study on the Effects of Corruption on FDI- Erasmus School of Economics.


The Centre for Research into Economics and Finance in Southern Africa (CREFSA) Survey The survey covered 81 TNCs in the Southern Africa Development Community (SADC).00

Transparency International (2012), Corruption Perceptions Index. Berlin: Transparency International,
http://www.transparency.org/policy_research/surveys_indices/cpi/2012


World Bank (2004b), World Bank Africa Database on CD-ROM.

World Business Environment (WBE) Survey the survey was conducted by the World Bank in 1999/2000.

World Development Report (WDR) Survey The survey was conducted by the World Bank in 1996/97.

