UNIVERSITY OF GHANA

RISK PREMIUM AND FOREIGN DIRECT INVESTMENT IN AFRICA

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THIS THESIS IS SUBMITTED TO THE UNIVERSITY OF GHANA, LEGON IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF MPHIL FINANCE DEGREE

JUNE, 2015

DECLARATION

I do hereby declare that this work is the result of my own research and has not been presented by anyone for any academic award in this or any university. References used in the work have been fully acknowledged. I therefore bear sole responsibility for any shortcomings.

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CERTIFICATION

I hereby certify that this was supervised in accordance with procedures laid down by University of Ghana.

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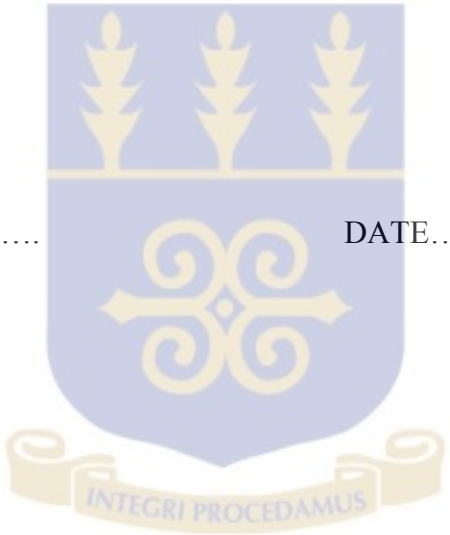
DATE……. DATE……



DEDICATION

This work is dedicated to the almighty God for his faithfulness and for providing me with the needed support throughout the research process.

ACKNOWLEDGEMENT

I hereby express my sincere gratitude to my supervisors, Dr. Godfred Bokpin and Dr. Zangina Isshaq for their guidance throughout the research process.

Special thanks go to Professor K. A. Osei, Prof. A. Q. Q. and Dr. Lord Mensah for their immense contribution, constructive criticisms, encouragement and advice.

TABLE OF CONTENTS

Content **Page**

LIST OF TABLES

DEFINITIONS

Foreign Direct Investment

Foreign direct investment (FDI) is defined as investment to obtain a lasting management interest (10% or more of voting stock) in an enterprise operating in an economy other than that of the investor.

Risk Premium

Compensation given to a foreign investor for taking on country risk

LIST OF ABBREVIATIONS

CRP – Country risk Premium

FDI- Foreign Direct Investment

UNCTAD – United Nations Conference on Trade and Development

ABSTRACT

Canonical finance theory holds that capital should move to the assets with the greater risk premium. Does foreign direct investment (FDI) move to countries with a higher country risk premia? We address this question in this study. We proxied country risk premium as the difference between the equity risk premium of an Africa country and the equity risk premium of US, sovereign bond spread and we measured foreign direct investment as the foreign inflows scaled by gross domestic product. Using a dynamic panel model and data from African countries from 2000-2012, we find that country risk premium has a positive and statistically significant effect on FDI irrespective of how the risk premium is measured. Variables commonly associated with FDI in the literature such as infrastructure availability and log of labor availability showed varying statistical significance, varying with the measurement of country risk premium. Alas, can we say international investors in the last decade are hunting for premia?

CHAPTER ONE

INTRODUCTION

1.1 Background of study

Country risk has become a key variable for foreign investors to choose among global destinations. As the risk and return of destinations are different, investors have to be selective in the case of destinations of their investment outflow. Determination of expected rate of return on an investor by a foreign investor is inevitable to proceed with without considering country risk before making investment decisions.

The increased assimilation of economies through trade, technology and financial markets has created a new world environment full of opportunities but weighed down with uncertainty and spill over risks (Gohalde, 2003; Terrier, 2011; Kumar, Susheel and Bindu, 2012). However, investing in Africa is considered riskier than investing in markets like USA, Western Europe and Japan (Naumoski, 2012). It is generally accepted that risk is relevant in investment and that riskier investment should provide higher returns than low risk investments. Country risk has seen construed to mean performance variable in returns from investment in a country on account of explainable factors having different dimensions and impacts. When investment occurs across international borders, they carry additional risks not present in the country of the investor. These additional risks called country risk, typically include risk arising from national differences in economic, policies, structures, geography, socio-political institutions and currencies. Country risk must be rewarded with a premium over an equivalent investment in a less risky country.

Previous studies find that, countries that have lower risk attract more FDI than countries with higher risk level (Lee and Rajan, 2009). Lee and Rajan find that business that occurs

across international borders carries additional risks which are not present in the domestic market of the investor. This risk arises from variety of national differences in policies, currencies and economic structures. Because of this, investors are very conscious of country risk before making an investment outside their country and would like to be compensated for any risk they are faced with. Naturally, the decision of whether or not to invest begins with an assessment of how much additional return is required to compensate for additional risk associated with a particular country. This study provides estimate of country risk premium for seven Africa countries and assesses the importance of this premium in attracting foreign direct investment inflows into Africa.

1.2 Problem Statement

Extant literature has looked at whether there should be additional premium for investing in a country other than another country (Naumoski, 2012; Damodaran, 2011). Damodaran (2013) reveals that marginal investor can achieve global diversification if he is globally diversified; otherwise the investor cannot achieve global diversification. Stulz (1999) identified two types of market; segmented and open markets. Segmented market is a type of market where investors invest only within their country and such investors don't need to be rewarded for a country risk premium. On the contrary, open market is a type of market where investors would invest outside their market into countries which are more risky and such investment need to be compensated. Damodaran study is in tandem with Stulz's study in the sense that those investors who engage in operating in the open market should be compensated for country risk.

However, Harvey (2004) observed that, developed markets are fully integrated with the world capital markets and for that matter can diversify the fluctuation of country risk,

therefore country risk does not require additional premium for these markets. This is not the same with other markets which are rarely integrated and investors are faced with non-diversifiable country risk. Hence investors investing in these countries should be rewarded with a country risk premium. Harvey also found a very high correlation between country risk and expected return in emerging countries; thus, as country risk goes up, the expected return for holding equity goes higher. Country risk premium as observed by Harvey is not far from what Damodaran observed.

A recent study by Kudaisi (2014) reveals that Africa has reported a considerable amount of FDI which amount to USD 170 million between 1995-1999 and this has been increasing consistently from 1990 to the 2000s although the speed of increment is not that high. The question this study seek to find is what could be driving foreign direct investment into Africa despite its risk profile by academic literature, could country risk premium be a significant factor?

1.3 Objective of the study

From the discussion above, the study seeks to determine whether foreign direct investors are hunting after risk premium in Africa

1.4 Hypothesis

The study expect a positive relationship between country risk premium and foreign direct investment, on that note the following hypothesis is formulated:

H_1: Country Risk Premium is an important factor in attracting foreign direct investment in Africa

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter provides a review of the relevant literature on the issue of important of foreign direct investment, the impact of country risk on FDI, general determinants of FDI and a review on risk premium and expected returns. It begins by considering the various theoretical underspinning of FDI decisions and further considers the various empirical researches on the issue of FDI.

2.2 Theoretical Review of FDI

There are several reasons why firms tend to invest their capital and activities in different countries. Most of the studies are based on the theory of market perfect and the theory of market imperfection. According to the perfect market theory, markets are perfectly competitive, therefore goods not factor of production are mobile, so production can only take place in a country which is endowed with factors of production. This theory comprises of the currency differentiation theory (Frost and Stein, 1991), differential rates of return theory (McConnell, 1980) and portforlio diversification theory (Calvet, 1980).

According to Frost and Stein (1991), foreign direct investment moves from countries that have stronger currencies into countries with weaker currencies. From their study, the yield that comes up as result of investing in these economies with weakened currencies is very large as compared to investing in their home countries.

Calvet's theory of portfolio diversification shows that firms are interested in gaining higher returns and at the same time want to minimize risk to the bearest minimum as possible.

To achieve this, they diversify their risk by investing their capital in countries other than their home country with the assertion that the returns on their investment in all those countries are lower than a correlation of one which of course is a good deal towards risk reduction.

Another theory that explains why firms engage in investment in another country is by the pioneering work of McConnell in 1980. From McConnell's study, firms would like to invest elsewhere rather than their country because the yield on investing elsewhere is higher than the yield that would be achieved by investing in their home country. McConnell term this as differential rate of return.

Hymer (1977) also explain why firms engage in international direct investment using the imperfect market theory. The theory adds onto the perfect market theory owing to its deficiency in immobility of factors of production from one country to another. These theories consist of the locational specific advantage (Gattai, 2005), Internalization theory and eclectic paradigm (Dunning, 1995) and Ownership specific advantage (McConnell, 1980).

According to Gattai's work on locational-Specific advantages theory shows that firms that seek to invest elsewhere arise when it is more profitable to invest in another country rather than their country. From his results, such countries need to have a higher stable political

environment, tax incentives, inexpensive inputs for production and good economic policies.

Dunning (1995) propounded the internalization theory. From the theory, firms can reduce cost of transaction by engaging in forward and backward integration through mergers and acquisition with other firms in another country. Firms can also reduce cost by establishing of plants in a foreign country. This activity is mainly to maintain as well as improve profit. The other theory that explains why a firm would like to invest in another country is the theory by McConnell's Ownership Specific- advantage theory. This theory takes three different forms which is term by Calvet (1980) as the monopoly advantage theory and oligopolistic advantage theory and McConnell (1980) as the international product life cycle theory.

The monopoly advantage theory's perspective, firms that are leaders in terms of technology can take advantage of it and invest in countries that have obsolete or less than perfect technology in other to enjoy economies of scale and increase profitability. This theory is different from the oligopolistic advantage theory in the sense that, with the oligopolistic theory, firms within the same oligopolistic industries counter each other's work by engaging in similar moves. For instance, if firm A and B are in the same oligopolistic industry and firm A engages in an investment in a country C, firm B will also engage in the same move by investing in the same country C. According to McConnell's paper in 1980, this movement is term as 'band wagon effect'.

McConnell's work on international product life cycle theory of ownership specific advantage was preceded by a study by Veron (1966). From Veron's perspective,

multinationals initially engages in exporting their product from their home to other countries. As they progress in their services, they tend to reduce cost by building capitals and establishing activities in countries they initially exported their products to.

The three theories discussed above form the eclectic paradigm. Hanink (1985) calls these three integrated theories as the OLI [Ownership (O), Locational advantage (L) and Internalization (I)] framework. According to Hanink, firm must hold product related ownership advantage over foreign firms in their home country. Also, the foreign economy must be able to offer locational advantage and that firm must be able to retain profit internationally by extending its capital and activities externally rather than continual involvement in licensing.

2.3 Empirical Review of FDI

Chen (1996) studied the determinants of foreign direct investment in developing countries. According to Chen countries that have larger market size, speed in growth of the economy, higher capital income, and liberalized trade policies attract more foreign direct investment than those that do not. The study also found that, countries with greater remoteness from the rest of the world and higher efficiency wages deter FDI inflows.

Said et al (2011) studied the factors that dictate preference by foreign investors to invest in the emerging markets for the period 1980-2008. The focus of their study was on China, Brazil and India. They found that, Economic and financial variables were the strongest determinants of changes in FDI in the regions. They found out that, life quality representing social variable proxied by energy consumption was a stronger determinant of FDI as compared to financial variables such as GDP, inflation, trade balance and

sovereign credit risk. These findings give inform message to policy makers to have a stronger attention to the quality of life citizens enjoyed in a country as well as paying key attention to the movement of economic and financial incentives in order to attract FDI.

Also, Nonneserg et al (2004) used a panel regression analysis to the main determinants of FDI in 38 developing countries between the periods of 1975 and 2000. From their results, GDP, level of schooling and degree of openness has a positive impact in attracting FDI. They found a significant but negative relationship between inflation rate and FDI and also found a significant negative relationship between country risk rating and FDI. According to Nonneserg, countries that seek to receive more FDI should pay more attention to the sustainable growth of their capital market, trade balance, country credit rating, life expectancy at birth, restriction on capital market repatriation, total market capitalization and exchange rate volatility. Just as Said et al (2011), countries which intend to attract more investment from foreign investors should consider focusing more on financial incentives owing to financial risk in the economy to be able to optimize the amount of FDI flowing into their economies.

Tsai (1994) used simultaneous equation approach to investigate whether economic variables such as market size, economic growth, balance of trade and wage rate has any significant impact on FDI for the period 1975-1978 and 1983-1986. The study found out that market size and economic growth has a positive significant impact on FDI while wage rate and balance of trade has a negative impact.

Shamsuddin (1994) used a cross-sectional data of 36 developing countries to determine the impact of GDP per capita, wage cost, investment climate proxied by capital debt, price

volatility and availability of energy on foreign direct investment. The study found a significant impact of these variables on FDI.

According to Clegg et al. (1995), the main reason why foreign direct investment moves more into other countries than others is due to explanatory factors such as GDP, GDP growth, R & D intensity, economies of scale, import and export per capita, exchange rate differentials, availability of reliable infrastructure, tariff barriers, availability of raw materials, level of political stability and political risk, proximity of host country to investing country and availability of skilled labor.

2.4 FDI in Africa

Countries are increasingly aware of the role of FDI as a driver of growth in their economies. Many researchers have investigated the main drivers from one country to another. Again, the variables that determine FDI inflows differ from one country to another. Reuber (1973) on the determinants of FDI in US into the western part of Africa found that, the main drivers of FDI is a market that is very lucrative and also has very sound government policies. Reuber also found that cultural proximity and access to technological infrastructures are the main drivers of FDI into western part of Africa.

In examining the main determinants of FDI to MENA countries, Rogmans and Ebbers (2013) found that GDP per capita, openness to trade and oil prices positively impact the flow of FDI. According to Rogmans & Ebbers, natural resource endowment has a negative impact on FDI. This means that large endowments of natural resources have a lower impact on FDI inflow.

According to the world investment report by UNCTAD (1998), infrastructure which consist of telephone, internet accessibility, good roads, have a significant positive impact on FDI inflows. This finding is not different from the result from Mody and Murshid (2002) who found that well developed infrastructure is a strong determinant of capital investment by multinationals.

Anyanwu (2012) examined the factors that influence the flow of FDI into Africa. Their results show that, openness to trade, size of the market, rule of law, foreign aid, natural resources, past FDI inflows, financial development has a significant impact on FDI inflows . According to his findings, eastern and southern parts of Africa are seen to have higher FDI inflows than other regions of Africa.

Furthermore, there has been a poor record of FDI in Africa owing to macroeconomic and political instability, slow growth rate with regards to GDP, weak governance systems and weak and insufficient infrastructures (Dupasquier and Osakwe, 2006). According to Dupasquier and Osakwe , existing investors are not given the needed attention and this is the reason why investors from other developed countries do not see it feasible to invest their capital in the regions of Africa. They recommend that countries in Africa should give incentives to existing foreign investors to gain reputation and hence attract more FDI towards the development of their respective countries and Africa at large.

Lemi and Asefa (2002) examined the impact of economic and political uncertainty on FDI flows from U.S to the economies of Africa. They used generalized autoregressive heteroscedastic model (GARCH - model) to engender economic uncertainty indicators of inflation rate and real exchange rate. They found that economic and political uncertainty

of host country does not matter when Investors from United State want to invest in Africa. This means that uncertainties spanning from inflation and real exchange rate are not significant for U.S investment flows to Africa.

2.5 Trends of FDI inflows in Africa

From the table below, Northern part of Africa has been highly performing in attracting FDI since 1980 until 2010 when the region continuously witness economic and political instability. From 1980 to 1984, FDI flows into Africa are 30.6. This figure has been on the increase from the periods of 1995-1984 and 1985-1994. From 1994 to 1999, there has been a significant increase in FDI. The average FDI between the periods of 1995-1999 was on the high owing to more political stable environment, economic integration and flexibility of investment in some countries in the continent. From 2000-2012 (the focus of the current study) shows an increase FDI over the past years. It is not of a surprise that South Africa has negatively attracted FDI in the period 1985-1989. This can be attributed to the period of apartied, debt crises and economic sanctions within the country. It experience higher inflow after 1990 after the lifting of the economic sanctions.

Annual Average of FDI Inflows across Africa sub-regions (% share, 1980-2012)

	1980-84	1985-89	1990-94	1995-99	2000-04	2005-09	2010-12
Africa	30.60	55.40	83.60	171	340	1060	45.70
Sub-regions							
West Africa	26.90	61.30	115	147	177	613	55.8
South Africa	62.6	-4.40	47.70	369	544	1280	30.40
East Africa	6.40	12.70	19.30	70.7	106	265	25
Central Africa	37.8	41.3	31.2	147	647	1670	14.7
North Africa	74.4	224	278	392	807	3420	37.80

Source: Kudaisi (2014)

2.6 Benefits of FDI

FDI can affect growth and development by complementing domestic investment and by facilitating trade and transfer of knowledge and technology (Hulger and Greenawas, 2004).

Most developing countries today seek the influx of FDI because it creates opportunity for increased employment and also to reap some revenues from the taxes these companies pay. Over the past decade, Africa has made considerable efforts to improve their investment climate. It has liberalized investment regulations and has offered incentives to foreign investors in other to attract FDI into their country (UNCTAD, 1998)

Ngowi (2001) found some benefits FDI give to the host country. He found out that, host country benefit from FDI through, financial source, job creation, transfer of technology, assistance with capital formulation and increased access to foreign markets.

FDI can be expected to encourage economic growth of the host nation, given the prevailing view and stimulate growth and welfare in the host nations (Grossman and helpman, 1991; Barro and Salai-Martin, 1995)

2.7 Risk faced by foreign investors

Country risk constitutes factors common to all foreign investment and business activities: generally, national political instability, barriers to capital flows and currency exchange issues. Market risk is the possibility for an investor to experience losses due to factors that affect the overall performance of the financial markets.

Another type of market risk is transparency risk. International markets encompass different countries with different administration, legislative and fiscal regimes, issues arise

regarding the compatibility of property data on cross border basis. In Africa, the quality of information is obviously not at par with the kind of information that is generally available in the western markets, so FDIs need to do thorough due diligence.

Furthermore, foreign investors are faced with liquidity risk which is another type of market risk. This is the amount of time required to find a motivated buyer for a particular period of time. The capacity to exit an investment successfully is a crucial component of the investment process and one that can seriously harm investor's return. Markets can suffer from low liquidity, depending on the number of other players in the market as well as tax issues related to ownership and transactions.

A more challenging market risk over decades is operational risk. Countries that there have no clear, accurate, easily discernible and widely accepted practices governing the relationship among firms, investment, government. (Balasbramanyan and Mahamere, 2002).

Kurtzman, Yago and Plumisana (2004) note that operating risk is largely caused by opacity and incremental scale risks like fraudulent transactions, legal and regulatory inefficiency, unenforceable contracts, and negative attitudes towards foreign investors rather than dramatic risk events (macro political risk) like revolutions, major acts of terrorism and expropriation of private property.

2.8 Country risk

Multinationals are faced with country risk as a result of making investment in countries other than their country of origin. This is the only type of investment that depends on the location of the country in relation to international border. Foreign investors are so much

keen about country risk since it affects their investment returns. Country risk encompasses the country's political environment, economic environment and financial environment. Political environmental risk is a type of country risk that reveals that government's actions will adversely affect an investor's returns. Credit rating agencies such as Moody, Standard and Poor's, Fitch have been periodically developing country credit ratings for countries. According to Haque et al (1996), country credit risk rating is an attempt to estimate country specific risks, particularly the probability that a country will default on its debt servicing obligations. When these countries are downgraded, attraction external finance requires a higher interest rate due to a higher level of probability of default.

Nordal (2001) separated country risk into economic risk, transfer risk, political risk, sovereign risk and exchange rate risk. He defines economic risk as a type of country risk that captures changes in a country's comparative advantage or the goals of government economic policies. This risk may be revealed in the form of regulation of property rights, tax policy, government expenditures or inflation. Transfer risk on the other hand arises from government's regulations on capital movements that may be a political response to a permanent growing current account deficit.

According to Nordal (2001), political risk arises from cultural and socio-economic alterations in political institutions. This reveals the quality of a political institutional environment. That is, the risk that returns to investment may suffer as a result of political instability and low institutional quality. In an extremely poor institutional environment that is under high political risk multinationals may suspect that the host country's government might appropriate some of the returns on foreign direct investment and even implement enforced nationalization. Foreign investors are concern about their operating

cost, but however political risk can adversely affect the operating cost of their operation which might lead to negative net present value projects. Another way to look at political risk is in the area of local investors. Because they have better access to political process, they may convince the government to favor them at the expense of foreign investors, thus reducing the competiveness of multinationals. The fourth type of county risk by Nordan is sovereign risk which emanates from government's inability or unwillingness to fulfill its loan obligation. The final type of country risk is the exchange rate risk. It is the type of risk which arises that affects the profits of a foreign investor when transferring the profit of its cash flow. This type of country risk arises from areas of unstable macroeconomic policies since they arise from changing inflation rates or interest rate.

2.9 Country risk and FDI

This part briefly reviews empirical literature on the impact of country risk on foreign direct investment. A number of studies have found a significant impact of country risk on inflows of foreign direct investment. For instance, Gastanaga et al (1998) studied twenty-two developing countries and found that lower corruption and nationalization risk levels and better contract enforcement are associated with greater foreign direct investment inflows. Their finding was consistent with that of Wei (2000) who found significant negative relationship between corruption and FDI inflows.

Busse and Hefeker (2007) studied the determinants of foreign direct investment among eighty-three developing countries. They found out that, government stability, internal and external conflict, corruption, ethnic tensions, law and order, democratic accountability of government, and quality of bureaucracy are highly significant determinants of FDI.

Ali et al (2010) find that property right regulation is a significant variable that influence foreign direct investment inflows. They found that institutions have a significant impact on FDI in manufacturing and in services but that institutional quality does not matter for FDI in the primary sector. Their findings is similar to that of Walsh and Yu (2010) who found that FDI flows into the primary sector showing little dependence on institutions, secondary and tertiary sector investments are not that much affected by institutions but which occurs in advanced economies.

Lee and Rajan (2009) studied cross border investment linkage among APEC economies and found out that countries with lower risk tend to attract more FDI inflows than countries that are very risky. In particular, they found out that most component of the country risk could be attributed to political risk.

Zhao (1990) establish that, there is an inverse relationship between political risk and FDI. They found out that though political risk may worsen their operating positions and profit expectations, high risk in political regime is not an impediment to FDI. Albuquerque (2000) found out that, the share of FDI in total influx is higher in more risky countries than less risky ones, using credit rating from sovereign debt as a measure of the riskiness of the country. Pan and Li (2000) show that FDI inflows into china despite the country's high political risk profile, is driven by long-term strategic advantage rather than short term risk exposure. However, Pan (2003) noted that, a more favorable risk assessment of china was associated with smaller FDI inflows (using country risk data than political risk data)

2.10 Risk Premium and Expected return

Estrada (2001) notes, beta and stock returns are largely uncorrelated. Harvey (1995) finds, that in these markets the betas are very low, which when they are applied as an input in the CAPM, generates "too low" required returns. As a result, many studies propose an alternative way to estimate the cost of equity in emerging markets: some of these are, Godfrey and Espinosa (1996) and Damodaran (2013) which propose an adjusted CAPM, where they added the sovereign bond spread (the difference between a risky country's yield on sovereign bond and a developed country, US) to the risk free rate as a reward for investing in an emerging market. Godfrey & Espinosa also propose a second approach using an "adjusted beta, 60% of the ratio between standard deviation of equity returns in emerging markets and the standard deviation of equity returns of USA market. Expecting this ratio to be greater than one reflecting the higher volatility of emerging market's returns. In addition, Damodaran (2013) computed equity risk premium for emerging country as the relative standard deviation of a country's equity returns and that of US equity returns multiplied by the equity risk premium of USA. He called the difference between the two premiums the country risk premium. Prior to this studies Damodaran suggested two ways MNCs can estimate their cost of equity, E(R) = r_f + β(ERP) + CRP. Also, Damodaran states that not all firms are equally exposed to country risk and a company's exposure to country risk should not be determined by where it is incorporated and traded. Exposure to country risk should come from a company's operations, making country risk a critical component of the valuation of almost every large multinational corporation. He proposes E(R) = r_f + β(ERP + CRP) and another model adjusting CRP with some weight λ as E(R) = r_f + β(ERP) + λ CRP. Where ERP is the equity risk premium for a mature market (USA)

Damodaran note that equity risk premium reflects fundamental judgements we make about how much risk we see in an economy and what price we attach to that risk. In the process it affects the expected return on every risky investment and the value that we estimate for that investment.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter outlines the methodology used in the studies to address the objectives of the study. The model adopted for the study, description of variables and sources of data are identified in this chapter. The method of estimation of variables is also identified.

3.2 Research design

The study adopts a quantitative analysis to achieve stated objectives. A dynamic panel model is used to examine the impact of country risk premium on foreign direct investment. The study focused on Africa as the scope of the study.

3.3 Econometric model

Following from Damodaran (2014) measure of country risk premium we formulated the following dynamic panel model:

$$FDI_{it} = \alpha + \rho FDI_{it-1} + \beta CRP_{kit} + \sum_{i=1}^{n} \gamma_i \, CONTROLS_{it} + \lambda_i + \varepsilon_{it} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

i represent each country, t represent time . λ_i is a country specific effect which captures unobserved country specific effect. ε_{it} is a disturbance term which has a zero mean and a constant variance. α is a constant term, β and γ are coefficients estimators. FDI denotes the foreign direct investment as a percentage of Gross Domestic Product (GDP). Lag of

the dependent variable, FDI_{it-1} is controlled for in the formulated model. CRP denotes the country risk premium with subscript k represent method of calculating country risk premium .CONTROLS represent vector of control variables. The control variables to be used in this are GDP growth rate (GDPG), availability of Infrastructure (INFR), Labour availability (LA), and natural resource rent as a percentage of GDP (NR).

Arellano and Bond (1998) found that if there is a country specific effect that are time invariant and unobservable, then the lagged of the dependent variable will be correlated with the error term and however OLS will lead to biased estimates. Also, the introduction of lag of FDI among the explanatory variables makes the OLS estimator biased since the lagged dependent variable becomes correlated with the error term. However, to get consistent estimates, I used the generalized method of moments (GMM) techniques proposed by Arellano and Bond (1991) to estimate equation (1). With this method, the country specific effect is removed by taking the first difference of all variables in equation (1)

This give rise to the model:

$$\Delta FDI_{it} = \rho \Delta FDI_{it-1} + \beta \Delta CRP_{kit} + \sum_{i=1}^{n} \gamma_i \, \Delta CONTROLS_{it} + \Delta \varepsilon_{it} \quad \ldots\ldots\ldots\ldots\ldots\ldots (2)$$

The above model implies that the first differenced of the error term error term $(\varepsilon_{i,t} - \varepsilon_{i,t-1})$ is now correlated with $(FDI_{i,t-1} - FDI_{i,t-2})$ the OLS estimates become biased therefore Anderson and Hsiao (1981) suggests using either lags 2 or 3 of the dependent variable, $FDI_{i,t-2}$ or $FDI_{i,t-3}$ be used as instrumental variables to solve this problem. The instrumental variables become uncorrelated with the error term but now correlated with $(FDI_{i,t-1} - FDI_{i,t-2})$. Arellano and Bond (1991) developed a one-step and two-step generalized method of moment estimators for the differenced equation.

Arellano and Bond (1991) used all the lagged values of the dependent variable and lagged values of all endogenous variables as instrumental variables. This was criticized by Arellano and Bover (1995) who claim that for panels with short time periods, the estimator is inefficient if the instrument used is weak predictors of endogenous changes. According to Arellano and Bover (1995), the number of instrument used should be less than the number of cross sectional units (country in this study). Blundell and Bond (1998) also showed weakness in using lagged level of dependent variable as instruments. As a result, Blundell and Bond (1998) proposed the system GMM estimator that uses moment conditions in which lagged differences are used as instruments for the level equation in addition to the moment conditions of lagged levels as instruments for the differenced equation. Blundell and Bond (1998) showed using Monte Carlo simulations significant advantages of system GMM over the traditional GMM developed by Arellano and Bond (1991). The advantages of the system GMM relative to the traditional GMM is that it accounts for situations where the autoregressive parameter is close to unity and the number of time series to number observation is relatively small.

The nature of the data set for this research requires that the system Generalized Method of Moments estimator developed by Arellano & Bover (1995) is used. The reasons for using system GMM are;

The fact that explanatory variables in equation are likely to be endogenous, there might be a reverse causality; the explanatory variables are caused by the dependent variable and vice versa. Moreover, the explanatory variables could be correlated with the error term. To solve this problem the system GMM uses the lagged levels of endogenous regressors in addition to the exogenous variables. This makes the endogenous variables predetermined and therefore not correlated with the error term.

Secondly, time-invariant characteristics (fixed effects) such as country may be correlated with the explanatory variables. The error term ($\varepsilon_{i,t}$) in equation (1) consists of the unobserved country specific effect (μ_i). To cope with this problem, the system GMM uses first difference to transform the equation (1). By transforming the model using first differencing, the fixed country specific effect is removed because it does not vary with time.

Thirdly, the presence of lagged dependent variable creates the problem of autocorrelation. The system GMM corrects this by instrumenting with the past levels of the first differenced lagged dependent variable. According to Arellano & Bover (1995), to ensure the consistency of the system GMM estimator, the Arellano-Bond test for serial autocorrelation was performed as well as the Sargan test.

3.4 The Arellano-Bond test for serial autocorrelation

According to Arellano and Bond (1991), the estimated model (2) is only valid if the first differenced error terms are not correlated. We test first and second order autocorrelation of the first differenced error terms. The null hypothesis is that the error terms are not serially correlated. Because the difference of independent and identically distributed errors will be serially correlated, rejecting the null hypothesis at order one (i.e. AR (1)) does not mean the model is wrongly specified. But rejecting the null hypothesis of no autocorrelation at order two (i.e. AR (2)) implies that the moment conditions are not valid.

3.5 Sargan Test

This tests whether the instruments used are valid; the over identification moment conditions are valid. The null hypothesis is that the overidentifying restrictions are valid. Rejecting the null hypothesis means that we need to reconsider the model estimator unless it is attributed to heteroskedasticy. Failure to reject the null hypothesis in the Arellano-Bond and Sargan test will support the model specification.

3.6 The Wald χ^2 Test

The Wald chi-square test whether the regressors used explain variation in the dependent variable. The null hypothesis is that the coefficients of the regressors are jointly zero. Rejecting the null hypothesis will indicate that at least one of the independent variables has an effect on FDI

3.7 Definition of variables

Variable name	Variable Representation	Definition	Data Source	Expected sign	Authors
Foreign Direct Investment	FDI	Investment outside the country of the investor to obtain a long lasting management interest	World bank database		Jun and Sigh (1995), Kudaisi(2014), IMF (2013)
Natural resource endowment	NR	a measure of availability of natural resource measured using natural resource rent as a percentage of GDP	World bank database	positive	Kudaisi (2014), Rogmans & Ebbers (2013), Anyanwu (2012)
Gross Domestic product growth rate	GDPGR	The growth rate of GDP measured as the percentage change in GDP	World bank database	positive	Kudaisi (2014)
Infrastructure	INFR	Availability of telephone lines measure per 100 people in each	World bank database	positive	UNCTAD (1998), Kudaisi(2014)

		country			
One-year Lagged FDI	FDI (-1)	Previous foreign direct investment lagged one year	World bank database	positive	Abdoul (2010), Bevan & Estrin (2000), Busse & Hekefer (2005)
Log of labor Availability	Log LA	Log of number of labor force available	World bank database	positive	Kudaisi (2014), Rogmans & Ebbers (2013)

3.8 Measuring country risk premium

The studies followed Damodaran (2013) in measuring Country risk premium:

The first is the use the spread on the yield of a 10year government bond of a country X and that of the yield on similar 10year government bond of USA. i.e.

$CRP_{X1} = r_X - r_{USA}$

Where r_X is the yield is on a 10 year bond of country X and r_{USA} is the yield on a 10 year government bond of USA.

From this, it implies that total Equity Risk Premium for country X = $CRP_{X1} + ERP_{US}$

The second method of measuring country risk premium is:

$CRP_{X2} = ERP_X - ERP_{US}$

where $ERP_X = ERP_{US} \times \frac{\sigma_{equityX}}{\sigma_{equityUSA}}$

Where CRP_{X2} is the Country Risk Premium for country X, $\sigma_{equityX}$ is the standard deviation of monthly equity index returns for country X and $\sigma_{equityUSA}$ is the standard deviation of monthly equity index returns for USA. ERP_{US} is the equity risk premium of USA computed from the S&P index as the monthly market returns minus monthly Treasury bill rate. The term $\frac{\sigma_{equityX}}{\sigma_{equityUSA}}$ is called the relative standard deviation of country X relative to USA. This term implies that, as market in country X becomes more volatile than the market of USA the ERP of country X increases which increases the corresponding country risk premium of country X. However, if the term is near 1 or equal

to one, the Equity Risk premium of country X and Equity Risk Premium of US will be equal leaving the country risk premium a zero figure.

CHAPTER FOUR

DATA ANALYSIS, INTERPRETATION AND DISCUSSION

4.1 Introduction

This chapter presents results from the data analysis. The presentation of results, interpretation and discussion has been also been provided in this chapter. The chapter begins with descriptive statistics of the variables used in the empirical analysis.

4.2 Descriptive Statistics

Table 1 presents a summary of descriptive statistics of continuous variables for the first measure of country risk premium, foreign direct investment as a percentage of GDP and control variables. We observe an average FDI of 2.640 as a percentage of GDP whereas the deviation from this average is 2.499% for the period. The highest percentage recorded for the period is 9.517%. The maximum country risk premium recorded for the seven Africa countries was 15.919% which is far higher as compared to the minimum of -3.344%. This is because of the higher country risk proxied by the relative standard deviation between a country and USA. The minimum country risk premium being negative implies that, such country was better off than a risk free country by 3.344%. That is on average, the worst US equity market has ever reported for country risk premium is 3.344% over its risk free instrument as compared to Africa countries. These findings is consistent with the finding of Dimson et al (2003) who analysed global equity risk premium and found out that before 2000, US equity market has been experiencing higher equity risk premium which was reflected in the expected return on equities. They found that US equity market started experiencing decreasing equity market risk premium after year 2000 which was reflected in the lower equity market return. This is basically as a result of a declining market risk premium which is a component of country risk premium.

It can also been seen that Africa has reported a very high percentage of GDP for natural resource rent and a minimum of 0.003% for the period. The high standard deviation recorded for labour availability implies that there is a very high level of labor force fluctuation. This can be seen in downward fluctuation implying diminishing labor availability and an upward fluctuation otherwise. The results show that Africa has recorded 15.007% as the highest GDP growth rate (GDPGR) with the minimum GDPGR of -1.526%. This minimum GDPGR recorded is very lower and that offset the highest GDGR ever recorded to result in an average GDPGR of 4.469%. Availability of infrastructure (INFR) proxied by telephone line per 100 is not that encouraging. This is because, out of 100 people chosen in Africa, only 31.503 of them have access to telephone lines.

Table 4.1 descriptive statistics for the period 2000- 2012 with first method of measuring country risk premium

Variable	Observation	Mean	Standard Deviation	Minimum	Maximum
FDI	91	2.640	2.499	-0.610	9.517
NR	91	9.876	11.145	0.003	49.781
LogLA	91	7.0569	6.8739	5.7232	7.4346
GDPGR	91	4.469	2.249	-1.526	15.007
INFR	91	10.327	8.855	0.583	31.503
CRP1	91	1.933	4.077	-3.344	15.919

Table 2 presents summary statistic for the second measure of country risk premium (using sovereign bond spread) and foreign direct investment as a percentage of GDP and control variables for the period 2007-2012. The highest sovereign bond spread recorded is 8.715% with the lowest recorded within the period as 0.857%. From table 4.1, FDI recorded the maximum value of 9.517% between the periods of 2007-2012. This finding is the same for

natural resource rent, Labour availability and GDP growth rate. Unlike infrastructure availability, the highest recorded, 31.503 is between years 2000-2007. The mean spread (3.013%) could also be explained by the minimum spread recorded (0.857 %) for the period which offset the highest spread of 8.715%. This level of spread reveals that, gradually, Africa has been a risky country hence the higher premium recorded.

Table 4.2 Descriptive statistics for the period 2007- 2012 with second method of measuring country risk premium (using sovereign bond spread)

Variable	Observation	Mean	Standard Deviation	Minimum	Maximum
CRP2	24	3.013	1.871	0.857	8.715
FDI	24	4.276	2.977	-0.205	9.517
NR	24	19.859	13.384	6.276	49.781
LogLA	24	7.1613	6.93135	6.54477	7.4346
GDPGR	24	4.901	3.336	-1.526	15.007
INFR	24	8.841	4.839	0.623	15.700

4.3 Results for country risk premium

The annualized relative standard deviation (RD) of Africa countries which reflect respective country risk in relation to the US benchmark (S & P 500 index) is given in table 1. Egypt recorded the highest country risk in 2006 followed by Morocco and then South Africa. Ghana reported the least country risk in 2001 and 2002 followed by Mauritius and Tunisia. On the average, Egypt recorded the highest country risk followed by South Africa and Kenya. This result implies that Egypt is a risky place for doing business than investing in USA. The findings also shows that, on average Tunisia is less risky as compared investing in US market (a benchmark for global investors) and this is seen in the relative standard deviation which is less in 9 different years out of 12 year period.

Table 4.3 Annualized Relative standard Deviation (RD) – 2000-2012

Year	Benchmark (US S &P 500 index)						
	Egypt	Ghana	Kenya	Morocco	Mauritius	Tunisia	South Africa
2000	1.39	1.11	1.52	0.51	0.59	0.94	1.13
2001	0.92	0.36	0.90	0.89	0.39	0.56	1.04
2002	0.54	0.35	0.75	0.58	0.64	0.46	1.14
2003	2.86	1.01	2.62	1.46	2.45	1.59	1.25
2004	2.97	3.08	3.37	2.08	1.32	0.68	2.38
2005	3.33	2.38	2.47	1.35	1.43	1.76	2.39
2006	4.81	0.52	2.67	4.50	2.99	2.66	4.49
2007	1.39	0.91	2.05	1.25	1.43	1.26	2.38
2008	1.31	0.61	1.80	0.99	1.12	0.77	1.48
2009	1.85	1.40	1.28	0.70	2.07	0.72	1.02
2010	1.04	1.24	0.55	0.59	0.89	0.64	0.92
2011	1.18	1.57	1.62	0.44	0.72	0.79	0.88
2012	3.26	1.08	0.65	1.34	0.78	0.82	1.20

The country risk premium which is the essential part of the current study is reported in table 2 below. From the table 2, South Africa reported a negative country risk premium in only two years, 2010 and 2011. Likewise, Egypt recorded negative country risk premium in 2001 and 2002. These results reflect the higher relative standard deviation for this two countries showing how risky an investment would be for an investor in Egypt and South Africa compared to an investment in US market. Tunisia on the other hand reported only three (3) positive country risk premium which also reflect the lower country risk proxied by the relative standard deviation in table 1. Morocco, Mauritius, Ghana, Kenya followed Tunisia with positive country risk premium reported in 5, 6, 8, 8 different years respectively.

Table 4.4 Country Risk Premium for Africa countries (Benchmark US S&P 500 index)

Country	Year	Relative standard deviation	Equity Risk Premium US (%)	Equity Risk Premium	Country risk premium
Egypt	2000	1.39	2.87	3.98	1.11
	2001	0.92	3.62	3.33	-0.29
	2002	0.54	4.10	2.21	-1.89
	2003	2.86	3.69	10.55	6.86
	2004	2.97	3.65	10.84	7.19
	2005	3.33	4.08	13.59	9.51
	2006	4.81	4.16	20.01	15.85
	2007	1.39	4.37	6.07	1.70
	2008	1.31	6.43	8.42	1.99
	2009	1.85	4.36	8.07	3.71
	2010	1.04	5.20	5.41	0.21
	2011	1.18	6.01	7.09	1.08
	2012	3.26	5.78	18.84	13.06
Ghana	2000	1.11	2.87	3.19	0.32
	2001	0.36	3.62	1.30	-2.32
	2002	0.35	4.10	1.44	-2.66
	2003	1.01	3.69	3.73	0.04
	2004	3.08	3.65	11.24	7.59
	2005	2.38	4.08	9.71	5.63
	2006	0.52	4.16	2.16	-2.00
	2007	0.91	4.37	3.97	-0.40
	2008	0.61	6.43	3.92	-2.51
	2009	1.40	4.36	6.10	1.74
	2010	1.24	5.20	6.45	1.25
	2011	1.57	6.01	9.44	3.43
	2012	1.08	5.78	6.24	0.46
Kenya	2000	1.52	2.87	4.36	1.49
	2001	0.90	3.62	3.26	-0.36
	2002	0.75	4.10	3.08	-1.02
	2003	2.62	3.69	9.67	5.98
	2004	3.37	3.65	12.30	8.65
	2005	2.47	4.08	10.08	6.00
	2006	2.67	4.16	11.11	6.95
	2007	2.05	4.37	8.96	4.59
	2008	1.80	6.43	11.57	5.14
	2009	1.28	4.36	5.58	1.22
	2010	0.55	5.20	2.86	-2.34
	2011	1.62	6.01	9.74	3.73
	2012	0.65	5.78	3.76	-2.02
Morocco	2000	0.51	2.87	1.46	-1.41
	2001	0.89	3.62	3.22	-0.4
	2002	0.58	4.10	2.38	-1.72
	2003	1.46	3.69	5.39	1.70

	2004	2.08	3.65	7.59	3.94
	2005	1.35	4.08	5.51	1.43
	2006	4.50	4.16	18.72	14.56
	2007	1.25	4.37	5.46	1.09
	2008	0.99	6.43	6.37	-0.06
	2009	0.70	4.36	3.05	-1.31
	2010	0.59	5.20	3.07	-2.13
	2011	0.44	6.01	2.64	-3.37
	2012	1.34	5.78	7.75	1.97
Mauritius	2000	0.59	2.87	1.69	-1.18
	2001	0.39	3.62	1.41	-2.21
	2002	0.64	4.10	2.62	-1.48
	2003	2.45	3.69	9.04	5.35
	2004	1.32	3.65	4.81	1.16
	2005	1.43	4.08	5.83	1.75
	2006	2.99	4.16	12.44	8.28
	2007	1.43	4.37	6.25	1.88
	2008	1.12	6.43	7.20	0.77
	2009	2.07	4.36	9.03	4.67
	2010	0.89	5.20	4.63	-0.57
	2011	0.72	6.01	4.33	-1.68
	2012	0.78	5.78	4.51	-1.27
Tunisia	2000	0.94	2.87	2.70	-0.17
	2001	0.56	3.62	2.03	-1.59
	2002	0.46	4.10	1.89	-2.21
	2003	1.59	3.69	5.87	2.18
	2004	0.68	3.65	2.48	-1.17
	2005	1.76	4.08	7.18	3.10
	2006	2.66	4.16	11.07	6.91
	2007	1.26	4.37	5.51	1.14
	2008	0.77	6.43	4.95	-1.48
	2009	0.72	4.36	3.14	-1.22
	2010	0.64	5.20	3.33	-1.87
	2011	0.79	6.01	4.75	-1.26
	2012	0.82	5.78	4.74	-1.04
South Africa	2000	1.13	2.87	3.24	0.37
	2001	1.04	3.62	3.76	0.14
	2002	1.14	4.10	4.67	0.57
	2003	1.25	3.69	4.61	0.92
	2004	2.38	3.65	8.69	5.04
	2005	2.39	4.08	9.75	5.67
	2006	4.49	4.16	18.67	14.51
	2007	2.38	4.37	10.40	6.03
	2008	1.48	6.43	9.52	3.09
	2009	1.02	4.36	4.45	0.09
	2010	0.92	5.20	4.78	-0.42
	2011	0.88	6.01	5.29	-0.72
	2012	1.20	5.78	6.94	1.16

4.4 Correlation coefficient (2000-2012, Using equity returns as measure of country risk premium)

	NR	LA	GDPGR	INFR	CRP1	FDI(-1)
NR	1					
LogLA	-0.0191	1				
GDPGR	0.1183	-0.0366	1			
INFR	-0.0787	-0.4048	-0.1510	1		
CRP1	-0.0127	0.3274	0.1239	-0.0232	1	
FDI(-1)	-0.0091	0.1000	-0.0225	-0.1690	0.0499	1

From the Pearson correlation matrix, all the explanatory variables except infrastructure availability and labor availability beats the benchmark for test of multicollinearity (> 30%). The correlation coefficient between these two variables is -40.48%. We did variance inflation factor test to analyze how much of these variables are inflated by multicollinearity. The results for this test are seen in table 4.5

Table 4.5 Variance inflation factor- (2000-2012)

Variable	VIF
LogLA	1.41
INFR	1.31
CRP1	1.20
GDPGR	1.11
FDI(-1)	1.04
NR	1.02
Mean VIF	1.18

From the above variance inflation factor output, all the independent variables have variance inflation factor to be less than 10 passing the test of multicollinearity, hence all the variables were included in the model.

4.5 Correlation coefficients (2007-2012, using sovereign bond spread as a proxy for country risk premium)

	NR	LA	GDPGR	INFR	CRP2	FDI(-1)
NR	1					
LogLA	-0.0673	1				
GDPGR	-0.0032	-0.1806	1			
INFR	0.3296	0.2772	-0.0301	1		
Spread	-0.2525	-0.0623	0.238	-0.7109	1	
FDI(-1)	0.3615	-0.0615	-0.2520	0.1805	-0.1959	1

The Pearson's coefficient correlation matrix above reports that labour availability and natural resource rent, infrastructure availability and natural resource rent, one-year lagged FDI and natural resource rent, one-year lagged FDI and labour availability, infrastructure availability and gross domestic product growth rate, spread and infrastructure availability are highly collinear. We also performed a variance inflation test to know the variable to consider deleting from the model. We report the variance inflation factor in table 4.6

Table 4.6 Variance inflation factor (2007-2012)

Variable	VIF
LogLA	2.17
INFR	2.11
CRP2	2.27
GDPGR	1.85
FDI (-1)	1.12
NR	2.22
Mean VIF	1.96

The above results from the variance inflation test shows that, despite the high collinearity among certain variables using a benchmark of >30% VIF is less than 10. On this account we used all the variables in the model with no problem with multicollinearity.

Following from this we continued to run the panel regression analysis using a dynamic model (generalized methods of moment- GMM). We run separate regression for two models. The first model consist of all control variables; Infrastructure availability, natural resource rent, log of labor availability, GDP growth rate, one-year lagged FDI and the explanatory variable which is the country risk premium using the difference between equity risk premium of an Africa country and the equity risk premium of US. The second model consists of all the control variables plus an explanatory variable which is country risk premium proxied by sovereign bond spread between and African country and US. The result from the regression analysis is reported in table 4.7 and 4.8.

Table 4.7 Regression output – using country risk premium- model 1

Variable	Coefficient	Standard Error	Z	P > Z
FDI (-1)	0.3281206	0.1094674	3.00	0.003
CRP1	0.1030538	0.0472174	2.18	0.029
NR	0.0885311	0.0319114	2.77	0.006
GDPGR	0.2045156	0.1207076	1.69	0.090
INFR	0.0048698	0.0918423	0.05	0.958
logLA	-0.3141949	0.5669874	-0.55	0.579
Constant	4.688472	9.474445	0.49	0.621
Wald chi square	52.41 P-value: 0.0000			
AR(1)	Z- value : -2.143, P-vale: 0.132			
AR(2)	Z-value: 1.4511, P-value: 0.1468			
Sargan Test	Chi- Square: 8.3075, P-value: 0.5980			

Table 4.8 Regression results- country risk premium- model 2

Variable	Coefficient	Standard Error	Z	P > Z
FDI(-1)	0.5064543	0.1543524	3.28	0.001
CRP2	0.8639922	0.3283711	2.63	0.009
NR	-0.1969359	0.1187079	-1.66	0.097
GDPGR	0.4805184	0.1876532	2.56	0.010
INFR	0.5693879	0.3010789	1.89	0.059
Log LA	-4.856007	2.825384	-1.72	0.086
Constant	74.82661	45.57628	1.64	0.101
Wald chi square	Chi-square value: 27.22, P-value: 0.0001			
AR(1)	Z-value:-1.6121, P-value: 0.1058			
AR(2)	Z-value: 1.1136, P-value 0.2654			
Sargan test	Chi-square: 29.62852, P-value 0.5360			

4.6 Regression Results

4.6.1 One-year Lagged FDI

From the results from the first model, it can be seen that the coefficient associated with the one-year lagged value of FDI is positive and significant at 1% level. This shows that a 1% increase in one-year lagged FDI will increase FDI scaled by GDP by 0.3281206. This implies that, the presence of foreign direct investment today in a particular country in Africa will have influence in future to attract more FDI to that country. This finding is same for the second model using the spread as a proxy for country risk premium. The second model conveys that, one-year lagged FDI is also positive and statistically

significant at 1%. The results also show that 1 % increase in one-year lagged FDI will increase foreign direct investment by 0.5064543.

4.6.2 GDP growth rate

The growth rate of GDP is positive and statistically significant at 10% level. This variable is a national indicator of the expansion of an economy. The result shows that a 1% increase in gross domestic product growth rate will increase FDI inflows by 0.2045156. This is an indication that, countries that are large in market size tends to attract more FDI than those that are small in size. The results also convey that, the rate at which this market size charges with time has a significant influence on FDI attraction. The second model also shows a positive and significant level at 5%, implying that, a 1% increase in the rate of change of gross domestic product will attract FDI by 0.4805184. These findings are consistent with that of Kudaisi (2014).

4.6.3 Natural resource endowment

Coefficient of natural resource is positive and significant at 1% level in the first model. The results reveal a coefficient of 0.0885311 and a p-value of 0.006. This result is expected, and shows that countries that are endowed with much natural resource attract more FDI than those that have less natural resource. The coefficient of natural resource in the second model is positive with value -0.1969359 and has a p-value of 0.097showing a 10% significant level. This findings from the second model in unexpected and not in consistent with that of Kudaisi (2014). However, the finding in the first is consistent with the finding of Kudaisi (2014), who found a positive statistically significant impact of natural resource rent on foreign direct investment.

4.6.4 Infrastructure Availability

The number of telephone lines subscribers (per 100 people) was used as a proxy for the availability of infrastructure. A p-value of 0.958 in the first model shows that international investors don't mind the state of infrastructure availability when considering their investment destination in the presence of the first measure of country risk premium. Unlike the second model which is consistent with the finding of Kudaisi (2014), infrastructure availability matters for foreign investors in the presence of the spread as a proxy for measuring country risk premium. This second model shows a p-value of 0.059 and shows a positive and statistically significance at 10%. From the results in the second model, a 1% increase in infrastructure availability will increase foreign direct investment by 0.5693879.

4.6.5 Log of Labor availability

A p-value of 0.579 in the first model shows that in the presence of the first measure of country risk premium, labor availability does not matter for foreign investors. This finding is not consistent with that of the second model. In the second model, we found out that, foreign direct investment will decrease by 4.856007 if log of labor availability increase by 1%. Both findings were not in accordance to our expectation that labor availability matters positively to FDI attraction. It is also not consistent with the findings of Kudaisi (2014) who found a highly positive impact of labor availability on FDI attraction into the regions of West Africa.

4.6.6 Country risk premium

The first measure of country risk premium in the first model which considers the annualized relative standard deviation of equity returns of countries in Africa to a

benchmark (US equity returns) is reported to have a positive and statistical relationship with FDI inflow. Table 3 reports a p-value of 0.029 and a coefficient of 0.1030538. This results show that, countries that compensate foreign investors for the risk they assume will tend to attract international investors to that countries by 0.1030538 provided the adjustment in the country risk premium increases by 1%. This result is not far different from the second model where sovereign bond spread is used as a proxy for the country risk premium. The findings from the second model show that country risk premium is highly significant at 1% level and positively impact foreign direct investment. Table 4 reports a p-value of 0.009 and coefficient of 0.8639922. This implies that sovereign bond spread as a measure of country risk premium will influence FDI by 0.8639922 provided the country risk premium proxied by sovereign bond spread increases by 1%. These results show that, country risk premium is important to FDI irrespective of the kind of method the use to measure the premium.

4.6.7 Wald χ^2 result

In both models (using relative standard deviation method and sovereign bond spread), from the reported tables, it is clear that the coefficients are jointly significant in both models

4.6.8 Hansen's Sargan test

The Hansen's Sargan test is built on the assumption of Homoscedasticity and tests the hypothesis that overidentifying restrictions are valid, that is the number of endogenous variables used as instruments are valid. We report from the first model a chi-square value of 8.3075 with p-value 0.5980. From the second model, we report a chi-square value of 29.6285 and a p-value of 0.5360. These result shows that the null hypothesis that over

identifying restrictions are valid cannot be rejected in both model. These also implies that the number of endogenous variables used as instruments are valid.

4.6.9 Arellano-Bond test for serial autocorrelation

We tested the null hypothesis of no autocorrelation from the two models. We reported the Arellano-Bond test for serial autocorrelation in the regression table 3 and 4. The p-values reported shows that there exist no serial autocorrelation in both models since the p-value of autoregressive order two is more than 5% level of significance from both models.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Introduction

The overall aim of the study was to examine the impact of country risk premium on foreign direct investment in Africa. Country risk premium in this study was proxied by two measures, that is, using the annualized relative standard deviation of equity returns and sovereign bond spread. This chapter begins with a summary of the findings followed by conclusions drawn. The chapter also includes recommendations and further studies in the area of FDI and country risk premium to enhance FDI attraction into the regions of Africa.

5.2 Summary of findings

The findings of the study reveal that, sovereign bond spread which is one of the proxies for measuring country risk premium is an important factor towards FDI attraction. Among all the variables included in the second model, the sovereign bond spread has the highest coefficient of 0.8639922 showing that it is one of the most important determinants of foreign direct investment. Besides, a p-value of 0.009 reveals that it is highly significant at 1% level. The other measure of country risk premium was the annualized standard deviation of equity returns. The results from the study reveal a coefficient of 0.1030538 significant at 5% level sovereign bond spread have a higher coefficient of 0.7609384 over that of the annualized standard deviation method. The findings reveal that GDP growth rate is positively significant variable in influencing foreign direct investment. This result shows that, countries that are increasing in size have high potential in attracting FDI that

those that do not. Our finding also reveals that, the presence of FDI in Africa has a higher propensity of influencing subsequent FDI into Africa.

Natural Resource that shows the presence of mineral availability in a country was significant in both models but the result from the second model was far from what we expected. The result from the first model reveals that countries that have abundant natural resource rent tend to attract more FDI than those that reports low natural resource rent. The result from the second model shows otherwise.

Our findings also shows that large availability of labor force tends to adversely impact foreign direct investment. This was seen from the results from estimating both models and is highly unexpected and not in tandem with academic literature such as Kudaisi (2014), Rogmans and Ebbers (2013).

5.3 Conclusion and Recommendation

Foreign direct investment has helped many countries in Africa to see growth in its economy and most researchers from different part of the regions of Africa have considered how to attract more of this investment into their countries. Our results clearly reveal that, international investors are hunting for higher returns in the form of risk premium in the regions of Africa. This implies that, foreign direct investment will move to Africa irrespective of their risky nature provided they receive appropriate compensation for the risk they face. Our findings also revealed that, countries that want to attract more FDI should pursue growth policies that will increase the size of the economy. The gross domestic product reveals the size of the host's market and foreign investors are keen towards how this size changes with time. We also found that the significance of

infrastructure availability, which in the extant literature is found associated, varies with our proxy for country risk premium.

5.4 Contribution of the study

This research is the first study to examine whether country risk premium is an important determinant of foreign direct investment in Africa and this will add to existing studies giving room for further studies. Our core contribution to literature is to demonstrate that within the subset of African countries that we have studied, global investors seek premia. This is important, in theories of firm internationalization that holds that firms go abroad to seek rents. To us our results suggests that the increased integration of the world's markets has shifted investors focus to generating returns at home.

5.5 Future studies

This study has found out that, country risk premium matters for FDI attraction into Africa irrespective of how the premium is measured. Further studies can consider the following:

- Using the world index as a benchmark rather than US benchmark in computing for the country risk premium
- Consider relative standard deviation of bond returns to the spread in measuring country risk premium
- Impact of country risk premium on sectorial foreign direct investment

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